Vaasan yliopisto
UNIVERSITY OF VAASA

CLOT CAMILLE

How can a feature-film be sustainable?

School of management
Master's Thesis in International Business

VAASA 2022

UNIVERSITY OF VAASA
School of Management
Author: Clot Camille
Title of the thesis: How can a feature-film be sustainable?
Degree: Master's degree in International Business
Programme: International Business
Supervisor: Susanna Kultalahti
Year: 2021-2022
Pages: 72

ABSTRACT

As an art existing since the end of the 19th century, cinema has evolved multiple times throughout history; the way that we make and consume it has changed, and will change again, because cinema is in constant dialogue with society and the issues related to its time. Nowadays, one of the biggest issues that concerns most of our societies is the question of sustainability. Most societies right now have gained consciousness about issues related to sustainability, the most obvious one being ecology and the concerns regarding global warming.
Since cinema is an evolving art, and a reflection of the state of our societies, then consequently it is evolving towards a more sustainable goal, both as an industry and as a content medium. We can see that some efforts are being made by producing and distributing companies trying to emit less carbon emissions; and by directors putting social issues into the spotlight in their movies.
But as an industry, cinema remains first and foremost a source of pollution. Producing a movie results in a lot of carbon emissions for a lot of different reasons. Distributing movies, even if it is less easy to tell, is a polluting phenomenon as well. Furthermore, as an industry, cinema exists as an entity that has an impact on people and on the economy.
The theoretical framework of this thesis is based on a large number of researches that were made more precisely on different subjects, such as how can we define sustainability, and how to be more ecologically friendly during the production phase. However, in the middle of all of those researches and studies, one question remains : what can be considered as a sustainable film exactly? A film, as a finished result, contains a lot of processes for it to arrive in front of the consumer's eyes. But in the end, how can a film be sustainable?
We will try in this thesis to understand the outcomes of those issues, and to reflect upon the notion of sustainability as a whole in the movie industry.

KEYWORDS: cinematography, sustainability, global warming, arts

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Acknowledgements

I would like to thank my thesis supervisor Susanna Kultalahti for her guidance throughout the year.

I also want to thank Josefine Madsen for all of her precious advice.

Eventually, I want to thank Anne Ahn Lund, Ronny Fritsche, and Tim Wagendorp for their time and for the inspiring and captivating discussions that we had.

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Abbreviations

UN= United Nations

GIEC = “Groupe d’experts intergouvernemental” (Intergovernmental Expert Group)

IPCC = Intergovernmental Panel on Climate Change

SDGs = Sustainable Development Goals

SRF= “Société des Réalisateurs Français” (the French Directors Society)

SMIC= “Salaire Minimum de Croissance” (minimum wage in France)

CNC= “Centre National du Cinéma et de l’Image Animée” (National Center of Cinema and Moving Image).

SACD= “Société des auteurs et compositeurs dramatiques” (Authors and dramatic composers’ society).

1. Introduction

1.1 Background of the study

It seems that when it comes to defining sustainability in movies, we often think about the ecological part of the work “sustainability” first. The United Nations defines sustainability as an “integrated approach that takes into consideration environmental concerns along with economic development.” The UN also defined it in 1987 as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”

So, what makes a movie sustainable? A movie, from creation to diffusion to the viewer, has an enormous amount of steps, and the amount of processes and factors involved in the process makes it very hard to tell if the movie is, in fact, sustainable. If we follow the definition of sustainability, a sustainable film should be one who has a great concern about the environment, the social, and the economy.

The first thing that comes to mind when talking about how to be more sustainable in movie creation, is the production phase. That is indeed where the most efforts seem to be put right now, on a new way of producing movies : green production. Green production could be defined as the ensemble of ecological efforts that are being put during the production phase. Those efforts are often very practical ones, such as recycling waste, avoiding the plane, preparing vegetarian food for the crew… When asking the question : is movie production sustainable, the one question that could be asked to better understand the question could be : can we sustain movie production the way that it is being done now without jeopardizing our future as a society? As the slogan of the European initiative *Green Screen* says : “No Planet, No Film” (Green Screen, n.d.).

But the social, environmental and economic aspect of the cinema industry should also be reflected upon when it comes to film distribution. Film distribution could be defined as the act of making the movie available to the viewer via multiple ways : movie theaters, festivals, SVOD platforms, television, or DVDs.

Then, a sustainable movie could also be a movie whose content could be defined as sustainable, in a sense that the subjects that are being treated in the movie can help the viewer see a new perspective on different subjects. In that sense, a lot of little actions can help the viewer to take more ecological actions in their daily lives, even the subtle, unspoken moments such as the main character recycling a bottle instead of throwing it on the floor. A sustainable movie could be, through the content and the ideas, a link of ideas created between the filmmaker and the viewer.

Taking into account those 3 aspects of sustainability as defined by the UN (social, ecologic and economic) is very important, because any development in society is impacting those 3 aspects. “Development as we know it since the 1970’s leads to three main tendencies: it is leaving behind people living in extreme poverty and still dying of hunger; it increases economic, social, and cultural disparities disparities; and it accelerates exponentially pollution and environmental damages” (Dartiguepeyrou, 2013)

Sustainability is a popular topic of research, especially now that a lot more researchers on every subject have gained consciousness of the ecological problem that we face today: global warming. From newspapers to more thorough research papers, the online material on the subject is quite dense.

Yet, all that scientific research seems to be focusing on the ecological element of sustainability. Yet, in order to be sustainable, something (an organization, an industry, for instance) must take into account the other pillars that can define sustainability, and participate in building a better future.

One of the key materials when it comes to sustainability is the sustainable development goals that were set by the United Nations in 2015: they were written in order to ensure that the global warming's effect would be contained and reduced, so that people from all countries can have peace, prosperity, and health. All of the 17 SDGs are integrated, which means that "they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.". (United Nations, 2015). Thus, once again, the cinema industry should develop while balancing social, economic and environmental sustainability.

When it comes to sustainability in cinema, the research that has already been made is not extensive. However, a few student's thesis that were written in the past few years are key elements in order to better understand how the movie industry can be more sustainable. Furthermore, more and more public institutions are taking actions in order to encourage the cinema industry to be more sustainable.

In France, the impact of the audiovisual industry on the environment is now well researched. The carbon footprint of the french audiovisual industry was, in 2018, 1,7 million tonnes of CO2, which represents the amount of CO2 emitted by 185 191 french people, which is equivalent to the 12th French city (Reims). (CNC, 2021). Among those carbon emissions, more than 15% are caused by the audience's transportation, and more than 55% are due to the online streaming of audiovisual content. (Ecoprod, 2022). Furthermore, researchers found out that online videos represent 80% of the worldwide data consumption in 2018, which emits 306 millions tons of CO2 each year. (Efoui-Hess, 2019).

One particular thesis is a key theoretical asset when it comes to thinking about sustainability in the Film and TV industry. Josefine Madsen was the first student to specialize in sustainable film production at the University of Copenhagen, Denmark.

Her thesis “A call to environmentally friendly action in the Danish film and tv industry” is a great way to better understand how the film and tv industry can take action in order to be more sustainable. (Madsen, 2018).
Her thesis shows how productions can be more sustainable, in theory and in practice, through new ideas but also already existing initiatives and tools in Europe. Even if her thesis is focused on the Danish film and tv industry, the core or the research can be used by every country as a guide on how to be more eco-friendly in this industry.

When it comes to the distribution process of cinema and understanding what are the newest changes in that field, the journalist Capucine Cousin made an extensive research about the economic models of SVOD platforms and the important impact that those platforms have on the cinema industry (Cousin, 2018). When thinking about sustainability, it is important to study the economical changes that are at stake. The cinema industry is a very peculiar one, with precise rules and regulations that allow the global system to work. Especially in France, the system is quite different than the other countries when it comes to the regulation of the distribution process, particularly when it comes to the “chronologie des médias”, a French exception.
Those platforms are bringing a lot of changes in the system, changes that are a threat to the French audiovisual system. Some actors in the industry are afraid that those changes are happening very quickly and with little to no regulations from the public powers, threatening the whole system to collapse. They call this phenomenon the “uberisation” of cinema. (SRF, 2021)

1.2 Justification for the study

Should we excuse every behavior in the name of art? It seems that today, there is a consensus around the fact that global warming exists, and that we should all make some efforts and change our behaviors in order to have a sustainable development, as a society. Sustainability is at the core of our modern concerns, as it should. However,

when we think about sustainability and industries, we don't necessarily think about the arts, and in particular, about the movie industry. Yet, the movie industry is generating a lot of carbon emissions and waste, in every step of the long process that is creating a movie. Today, in 2022, some research has been made in order to understand why the movie industry is polluting, and what are the tools that professionals in the industry can use in order to generate less waste and carbon emissions. However, defining sustainability in the field of cinema includes other aspects than ecology, and not only when it comes to the production phase.

This research was carried out because it is important to reflect upon the notion of sustainability in the movie industry, in every step of the way, and including every aspect of the concept.

1.3 Research question

The concept of sustainability is very important today, especially regarding global warming. Every industry should acknowledge how they could do better. But the notion of sustainability is also a concept because it relies on 3 elements : the social, the ecological, and the economic. Thus, the question that this thesis will reflect upon is the following: How can a film be sustainable?

1.4 Key concepts and definition

One of the key sources of this thesis is the IPCC, the Intergovernmental Panel on Climate Change. The term "GIEC" will also be used at some point, which is the french translation of IPCC. According to their website, "The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change." (IPCC, n.d.)

The Sustainable Development Goals (SDGs) are also a key concept throughout this thesis. The United Nations defines the SDGs as a ”universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.”. The 17 SGDs are “integrated”, which means that “they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.”(United Nations, 2015)

Chronologie des médias / media-chronology. Used in France, it is a system that organizes film diffusion after their releases in movie-theaters. It is mandatory for each diffusion medium to wait a certain amount of time before being allowed to broadcast a movie. The time allocated to each actor in the diffusion process depends predominantly on how much this particular actor finances the movie industry. The more a diffusion medium helps to produce cinema, the less it has to wait in order to acquire the rights to a movie. This system is fixed and doesn’t change depending on the movie. However it is fixed again every few years in order to take into account the newest changes in the industry. It was changed in 2018, and again in february 2022. (Cousin, 2018)

One society that will be mentioned is the SACD, whose goal is to “defend authors' rights and liberties. It provides authors with support and assists them throughout their careers.” Thereby, the SACD “work alongside artists for the defense of human and democratic values”. (SACD, 2022).

The last important concept that will be discussed in this thesis, and that needs to be defined, is the concept of “Carbon sink” or “carbon sequestration” = “the long-term storage of carbon in plants, soils, geologic formations, and the ocean. Carbon sequestration occurs both naturally and as a result of anthropogenic activities and typically refers to the storage of carbon that has the immediate potential to become carbon dioxide gas. “ (Eckley, 2019) The concept of carbon offset is linked to the

concept of carbon sink, since carbon offset is the action of removing carbon dioxide in order to offset, or compensate, for carbon emissions that were emitted elsewhere. To do so, carbon sinks are used in order to store carbon that could become, as we said, carbon dioxide.

1.5 Structure of the study

This thesis contains 5 main chapters. The first chapter presents the introduction of this thesis. The second chapter is dedicated to a reflection on the different sources and theories that are useful in order to begin an answer to the research question. Indeed, the concept of sustainability as a whole will be presented. Then, we will discuss the concept of sustainability when it comes to the production process, and then, its relationship with SVOD platforms. Sustainability is a very complex and embedded concept that can be reflected upon through multiple angles. The last part of the theoretical background will be dedicated to a reflection on sustainability when it comes to content, or in other words, films. The third chapter will present the research design, including the research method and philosophy, followed by the data collection and sample, the data analysis, and eventually, the validity and reliability of the study. The findings of the research will be presented in chapter 4. Eventually, chapter 5 will focus on the conclusion, including a discussion of the key findings, the practical implications of the findings, and finally, the limitations and future suggestions.

2. Theoretical background

2.1 The concept of sustainability

There is a scientific consensus around the fact that global warming is real, and is happening right now. The latest proof of that, in may 2022, would be the terrible heat waves that are hitting India and Pakistan: India experienced the worst heatwave that May has ever experienced in 122 years, and Pakistan experienced the high temperature of 51°C. (Pakistan Meteorological Department, 2022).

There are multiple, complex, and entangled consequences to Global Warming. If we follow the example of heat waves, the sectors that are impacted are health, employment, economy, agriculture, energy… It is important to understand the outcomes of our actions in order to build a future, that is why scientific research such as the IPCC publications are necessary.

IPCC published a report in february 2022, advising policy makers on what changes must be made in order to avoid climate change as much as possible. This report shows exactly how our human societies are impacted and impacting the ecosystem, and it gives ideas of what are our "options to reduce climate risks and establish resilience". (Pörtner & al., 2022). The figure that follows, called "From climate risk to climate resilient development: ecosystems (including biodiversity) and human society as coupled systems", is a clear visual demonstration of those ideas.

The first figure shows the risk that comes from an overlap of climate hazards, but also vulnerability and exposure of human systems, ecosystems and their biodiversity. We can see here that one of the main interactions is the greenhouse gas emissions from human society that causes climate change. We can also see that in the second figure, the "options to reduce climate risks and establish resilience" shows that we could launch some new interactions between human society, ecosystems and climate change

that could result in a “climate resilient development” of “human health and well being equity, justice”.

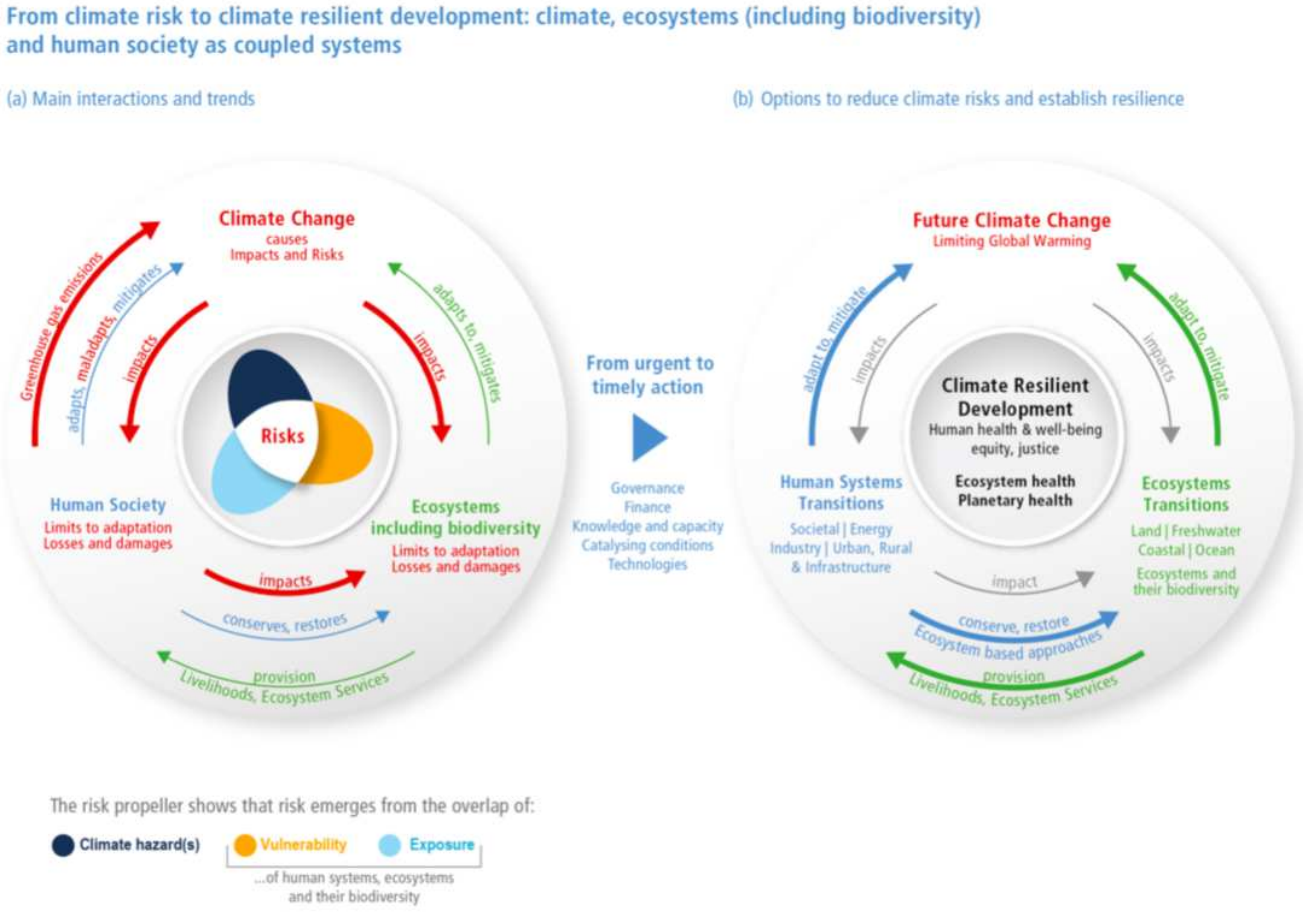

Figure 1: From climate risk to climate resilient development; climate, ecosystems (including biodiversity) and human society as coupled systems (IPCC, 2022)

These graphs are extremely important to understand a few things. First of all, human society and ecosystems are not doomed, and some new interactions could be replacing the ones from figure 1, such as greenhouse gas emissions, that could lead to a limitation to global warming. Secondly, it is very interesting to see that this scientific report is showing that a climate resilient development can’t happen without the other

pillars in the sustainability's definition : the social and economic one. Human systems should transition in all domains : societal, energetic, industrial, urban and rural…

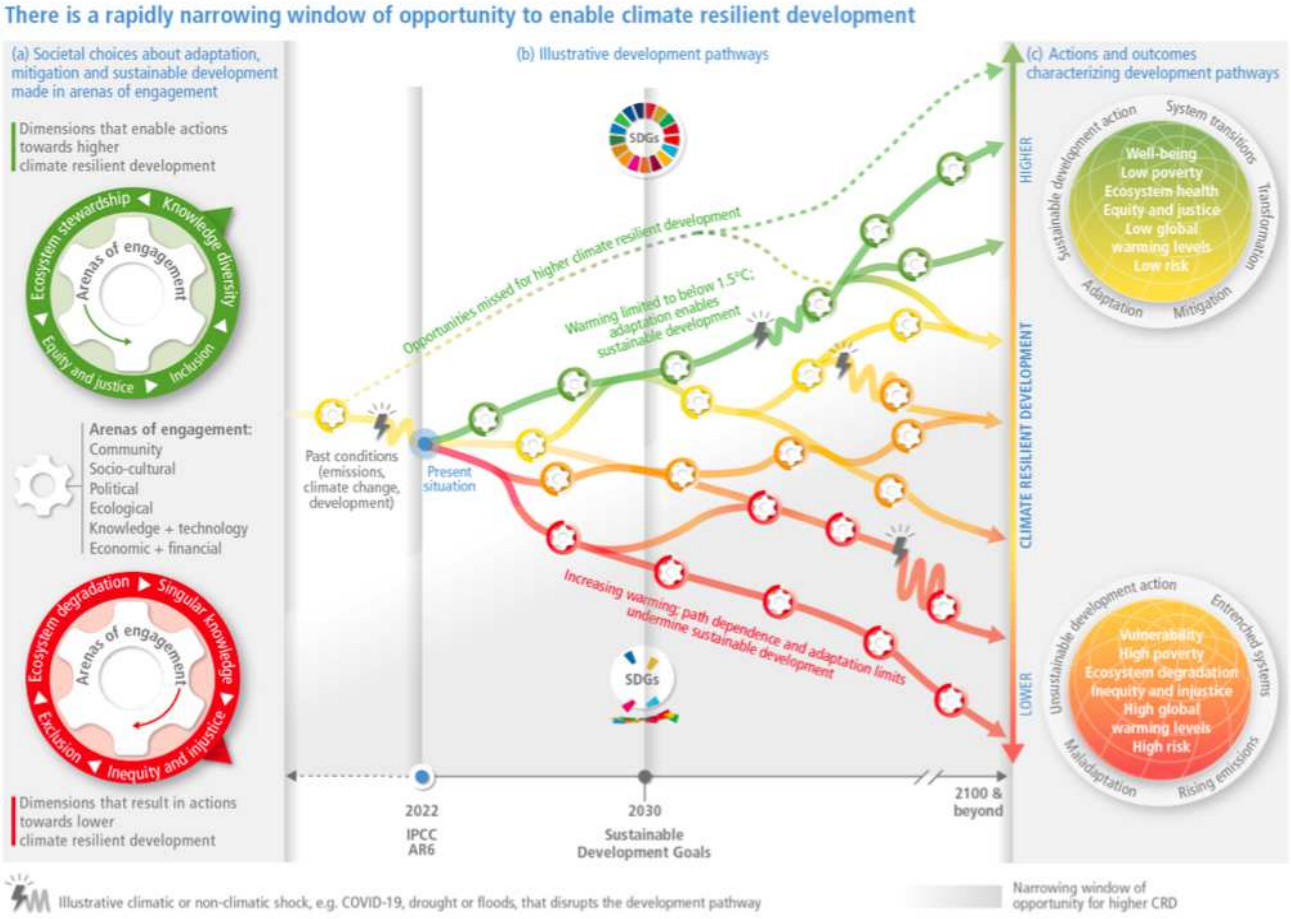

Figure 2: There is a rapidly narrowing window of opportunity to enable climate resilient development. (IPCC, 2022)

This figure shows different paths and potential futures that awaits society depending on the choices being made, and depending on how quick these choices are made. The green colors and the higher paths describe the societal choices that are the most sustainable, and lead us to a sustainable development. On the other hand, the red colors show the societal choices that result in "lower climate resilient development". As

we can see, the sooner somes changes are made, the better are our chances to achieve sustainable development goals such as well-being, low poverty, ecosystem health… On the contrary, if societal efforts towards sustainability are made later, then it will be very complicated or even impossible to achieve the highest climate resilient development. Furthermore, we can notice that, as the point “present situation” indicates, society is at an important crossroad in 2022. Either somes sustainable development changes are made as quickly as possible, and we manage to keep global warming under 1,5°C; or we wait a few years before taking some actions, aiming for the lower climate resilient development paths. As we can see, our window of opportunity is narrow, but the outcomes of those taken or missed opportunities are very important. In 2030, the year of the United Nations SDGs’ deadline, it would already be impossible to achieve the highest sustainable development goals if nothing is done. Indeed, we can observe that in 2030, the green path would already be out of reach: only the lowest red paths would be achievable. To sum up, if society aims to achieve the highest climate resilient development goals, then actions need to be taken today in 2022, or at the latest in the next 2-3 years, the yellow path allowing us to reach the green path again if opportunities are taken.

As we can see, the UN’s “arenas of engagement” are multiple: community, socio-cultural, political, ecological, knowledge & technology, and economic & financial.

Nevertheless, we could ask ourselves: what about the cinema industry? What about sustainable filming?

Let’s take the example of France’ situation regarding global warming.

In 2018, the carbon footprint of the french audiovisual industry was 1,7million tons of CO2, without taking into account the equipment manufacture. (Ecoprod, 2020). This represents the carbon footprint of 185.191 French people, as much as the 12th French city (Bigo, Carrega, Efoui Hess & Lacharme, 2021). If France wants to follow the Paris Agreements and keep global warming below 1,5°C, then it needs to reduce its carbon emissions by 40% (compared to 1990), and be carbon neutral by 2050. This means that

from now until 2030, the country needs to reduce its carbon emissions by 2,16%, and then 3,7% per year between 2030 and 2050. (Ecoprod, 2020). Those ambitious goals can only be reached if every sector, every industry, begins their sustainable transition right now.

Cinema is an industry that needs to take responsibility just like any other. Creating films, from pre-production to distribution, is a polluting process. The pollution generated by the movie industry will impact our common future; even if it is important to keep in mind that the countries and populations that will suffer the most from climate change are also the ones that pollute the least and have the least profit from this industry. As we saw earlier, change must be taken now if we want to aim for the highest climate resilient development possible. Cinema has power thanks to its content, but is also a polluting industry that needs to implement sustainable changes: environmental, societal and economical changes. Changes must be made in order to build the world of tomorrow. The cinema industry will struggle in the future, as any other industries, if no research is made upon the subject and if no changes occur. Cinema is, above anything else, an industry. Even if it is art, it should not be considered as an entity detached from human society. That is where the notion of sustainability is very important and should be reflected upon: we should make the necessary changes in order to protect cinema, and make the necessary changes in cinema in order to protect our society.

2.2 Sustainability in cinema production

2.2.1 Why do we need sustainability in production?

“Our images do not come from nothing, and they do not vanish into the air: they have always been generated by the earth and sun, by fossil fuels and chemical reactions, and our enjoyment of them has material consequences” (Vaughan, 2019).

Firstly, let's review a few important data to comprehend how much movie production generates all sorts of waste, as well as CO2 emissions. A $70 million budget blockbusters produce "an average of 2,840 ton of CO2 per production (it takes 3,700 acres of forest to absorb the equivalent in a year)" (Whittington, 2022). The movie *Hellfighters* (McLaglen, 1968) whose purpose is to show as much fire and explosions on screen as possible, used 350.000 gallons of diesel oil and 60.000 gallons of raw propane, producing "125 foot flames and temperatures so high they melted the director's chair". (Vaughan, 2019).

Let's take another example: the movie Titanic (Cameron, 1997). The set of the movie was not in the Atlantic Ocean but in the village of Popotla, Mexico; where two large cater tanks were built: one of 17 million gallons, and the other, 5 million gallons. To visualize, in liters, this amount of water comes to more than 83 million liters of water for both tanks. Furthermore, the set's practices polluted Popotla : "the water culled directly from the ocean was polluted during its cycling through the production and then pumped back into local waterways" (...) "Popotla was cut off from the sea and local fisheries by a massive movie wall that was built to keep local citizens away, and Fox's chlorine treatment of the water on set led to the pollution of surrounding seawater, decimated the local sea urchin industry, and reduced overall fish levels by one-third." (Vaughan, 2019).

These two examples could be seen as extreme, especially considering Titanic's high budget, allowing them such big production means. Yet, nowadays, big productions like such are released every year. For instance, the biggest production of 2022 (for now) is *Doctor Strange in the Multiverse of Madness* (Raimi, 2022) with a budget of 200 million USD, the same budget that Titanic had. Considering the urgency to reduce our worldwide carbon emissions and pollution, it is important for movies to act in a sustainable way right now, considering the amount of waste and emissions that they can generate, from low to high budget movies.

In fact, there is now a multitude of different data just like this showing how much carbon emission a movie emits in the production phase. Those numbers depend, of course, on the budget and the type of movie that we are studying. Furthermore, carbon emissions are not the only things that are not sustainable during the production phase on set. Indeed, a movie set requires a lot of different materials, new technologies, electricity, costumes; the workers need to be fed and transported from one place to another… The list goes on and on, considering that a film set has to meet the needs of the entire crew as well as the different requirements of the movie in itself (the content).

2.2.2 Green production : new ideas and habits

"How does the making of the films also significantly influence these unique social and environmental systems?"

The new way of producing movies to make them more sustainable could be called "green production". Here, the term sustainable could be easily replaced by "ecological", because the main worry when it comes to sustainability on set is the ecological aspect. This term could be used to define emerging ways of producing that take into account the pollution generated by each department on set. In the world, different green production guides and carbon calculators are arising a little bit everywhere, in order to help the producer act in a more sustainable way. We can for instance cite "Green Screen" in Europe (Green Screen, n.d.) , or the "Green Production Guide" for the US (Green Production Guide, n.d.) If we focus on France, the most known green production association is Ecoprod (Ecoprod, n.d.). This association is one of the most known green production companies in France, and is working alongside a lot of important partners in the sector. From 2010, they worked on the first french carbon footprint calculator for the audiovisual sector : "Carbon'clap". Their green production guide was introduced in 2012. Throughout the years, Ecoprod focused their work on how to reduce carbon emissions within a movie production, and what very concrete

actions could be implemented on set. They also implemented a green production guide, the "guide of eco-production", in order to help production know which sustainable practices they could implement on their own set.

Is a movie produced while implementing sustainable habits on set can be defined as a sustainable movie? Is green production enough to make a sustainable movie? It seems that to answer this question, we need to reflect upon what exactly are the efforts being made on set when a movie brands itself as being sustainable.

2.2.3 Carbon offsetting

It is important to make a distinction between sustainable initiatives on set, aiming for a greener production, to films that are targeted as sustainable while their real practices remain not so ecological. One good example of this kind of marketing campaign can be found in *Day After Tomorrow*'s communication (Emmerich, 2004), a post-apocalyptic science-fiction movie depicting the consequences of natural disasters. This film was the first one that positioned their marketing campaign as being an environmentalist, carbon-neutral film (Vaughan, 2019).

Hence, in that case, what makes this movie an environmental one? Is it the content of the film, depicting the disastrous consequences of climate change? Or is it because they produced it in a sustainable way? Well, none of those two options. Actually, they marketed themselves as carbon-neutral because they "funded environmental groups" and "planted trees". In other words, they used carbon offsetting as a way of promoting themselves as carbon-neutral, without ever implementing greener strategies during the production phase (Vaughan, 2019).

Is carbon offsetting an efficient way for movies to be carbon-neutral? It seems that it's not, as our later findings suggest. Yet, even today, carbon offsetting is used by companies and movies in order to market themselves as sustainable. We can for instance think about Netflix's "Net Zero + Nature", their plan to "achieve net zero

greenhouse gas emissions by the end of 2022". Certainly, they state that their first step will be to reduce their carbon emissions. But step 2 and 3 seem to be based only on carbon offsetting, seeing as their step 2 is called "retain existing carbon storage" and step 3 is to "remove carbon from the atmosphere" (Stewart, 2021).
Yet, "it is well recognised that carbon offsetting has been sustained via problematic knowledge claims and misleading, spectacular discourses" (Watt, 2021). The author attempts to "explain the stickiness of carbon offsetting, even in face of vigorous contestation from those seeking alternatives to better promote climate justice." The author tries to explain how the idea of carbon offset "creates misleading claims about emissions reductions" but is still being used in the climate debate today becaue it "offer subjects illusory promises of recuperated 'eco' enjoyment of capitalism's penchant for consumerist fantasies" (Watt, 2021).

It appears that carbon offsetting may be still used by companies (and in our case, movie productions) in order to demonstrate a so-called carbon-neutral process, while no other changes are being made on set. Hunter Vaughan says that we should "unmask such superficially progressive texts" and then "shift the debate to the practical problems of filmmaking and the discursive channels that spin textual meaning into a tapestry of ideological appeal and cross-market advertisement". (Vaughan, 2019). In other words, we should focus more on practical solutions and implementing sustainable practices, instead of believing that offsetting carbon is enough.

Furthermore, some scholars believe that some carbon offsetting practices, such as sink projects, could have the opposite effect as the one that was aimed at. Bäckstrand and Lövbrand's paper demonstrate the "disastrous consequences sink projects may have on tropical biodiversity and ecosystem protection", depending on what was the project and the goal. Indeed, the authors show that depending on local problems, actions that look good on paper are actually not efficient, or worse, introducing new issues. We could for instance take the example of tree plantations that result "in monocultures of non-native" trees, which, as a result, "reduce biodiversity, disturb hydrological cycles

and intensify the use of chemicals and pesticides to enhance yields" (Bäckstrand & Lövbrand, 2006).

In a nutshell, there are two issues with carbon offsetting. Firstly, we should not believe that carbon offsetting is enough for a film production to act in a sustainable way: even if the carbon emissions are compensated, they are still being emitted in the first place. A more efficient method would be to reduce as much as possible the carbon emissions in the first place, by implementing a more sustainable approach on set, as we saw with green productions initiatives. Secondly, carbon offsetting can be creating more problems when not done properly. The issue with carbon offset is that it is often being implemented without paying attention to the local problems and the interactions between fauna, flora, and inhabitants locally. Indeed, carbon offsetting tends to "displaces costs on to communities in the global South".

To sum up, carbon offsetting shouldn't be seen as an easy and magic way to become carbon neutral by capturing carbon elsewhere. "Carbon credits are purchased and tress are planted so that business can proceed as usual" (Vaughan, 2019). Companies should not avoid decreasing their carbon emissions and making sustainable efforts because they are compensating elsewhere in the world: sustainable behaviors should not be outsourced.

2.2.4 The set as a sustainable workplace

"The film's creation of local jobs for a struggling Mexican film industry earned director James Cameron the Order of the Aztec Eagle from the grateful Mexican government, but also ruined a local marine ecosystem and decimated a fishing community" (Vaughan, 2019).

As we saw earlier, *Titanic* (1997) is a good example of how some productions can have a bad sustainable impact. We studied its impact on the environment, mais not yet on the workers on the set. Cameron's production had a bad impact on both its

environment and the worker's residence: "Popotla was cut off from the sea and local fisheries by a massive movie wall that was built to keep local citizens away, and Fox's chlorine treatment of the water on set led to the pollution of surrounding seawater, decimated the local sea urchin industry, and reduced overall fish levels by one-third.". Cutting down the access to the sea and polluting a fisherman's village source of revenues does not sound very sustainable, and yet, the movie can brand itself as sustainable since it received an Aztec Eagle for helping the Mexican film industry.

Sustainability is not only about being as environmentally friendly as possible. A sustainable set should also be a set in which workers can work safely and assure them social rights. Yet, it seems that some non-sustainable behaviors are allowed on set, often unspoken behaviors, that makes the workplace an unsustainable place.

Firstly, we can think of the fact that the cinema industry relies on the precarious working conditions of a lot of its employees with unstable contracts and poor salaries. In her research, Vicki Mayer states that: "As a field of study, "production studies" captures for me the ways that power operates locally through media production to reproduce social hierarchies and inequalities at the level of daily interactions. Production studies, in other words, "ground" social theories by showing us how specific production sites, actors, or activities tell us larger lessons about workers, their practices, and the role of their labors in relation to politics, economics, and culture" (Mayer, 2009). Cinema productions, and the industry in general, seem to be an interesting field of study when it comes to working social dynamics: they are enhanced in this industry. Depending on status, but also on gender and ethnicity, employees on set know exorbitant salary differences, even between Hollywood stars (De Pater & al., 2014). As a matter of fact, the Global Green Media Network, founded by scholars specialized in sustainability and media studies, aims at addressing sustainable challenges: energy, waste, agency, and also environmental justice "the major media producers of the global media environment rely on exploitative practices like outsourcing and precarious work conditions" (Global Green Media Network, n.d.).

Secondly, a sustainable workplace should be a place where employees can work safely. Incidentally, the 8th SDG “decent work and economic growth” can also be applicable at the movie industry, just as the 5th goal “gender equality” (United Nations, 2015). The MeToo scandal, known mostly since the 2017 Harvey Weinstein case, has shine a light on the problem of sexual harassment and sexual assaults in the cinema industry. This issue is real and too common. A film aiming at sustainability should assure that its workers are safe, on set, but also economically safe by assuring them decent working contracts.

2.3 Sustainability and SVOD platforms

2.3.1 SVOD platforms and dematerialization

“The cinema has become the major site for a trade in dematerialization, a new industrial market which no longer produced matter but light” (Virilio, 1989)

The way that we think about cinema as its importance. Nowadays, especially with the rise of SVOD platforms, cinema and online content in general feels like it is completely dematerialized, in other words, that it only exists in the cloud. New content comes to us through technology every day, on our different devices, without going through a material shape as it used to only a few years ago. This difference impacts the way that consumers feel about online content, as if it does not have any material impact at all. When discussing the concept of sustainability, the diffusion phase in the lifecycle of a movie is not the phase that we think the most about. Yet, the choices that we make on how and where we consume content have its importance. Behind new movies being released on Netflix, societal and political choices were made behind the curtains that could impact our future.

2.3.2 Algorithms

“We live in a world where only one form of digital use, online video, generates 60% of world data flows and thus over 300 million tons of CO2 per year” (Efoui-Hess, 2019). Furthermore, “a recent study revealed that watching an hour-long series on 4K resolution using a fixed network emits approximately 30 gCO2e/hour. And when using a 4G network, the emission amounts to 4 gCO2e/hour. As for the data centers, on their own they account for over 2% of the global carbon emissions, and this is before the ‘Metaverse’ really takes off.”(Whittington, 2022). Some scholars studied deeply the environmental impact of our online habits, demonstrating that online content is, in fact, material in some way. The longer we spend consuming content online, the more carbon emissions are being emitted without even realizing. Moreover, Netflix and other SVOD platforms are designed to be as addictive as possible, using algorithms that push us to spend as many hours on their platforms as possible (Cousin, 2018). Thereby, in order to reflect upon the notion of sustainability in films, it is important to take a moment and analyze the impact that content diffusion practices have on society.

We already mentioned the fact that algorithms can be a problem regarding the environment, considering the fact that they are made in order to be as addictive as possible, and consequently use a lot of data and polluting servers to fonction.
Netflix seems to be creating series and deleting them a lot, sometimes, despite the fan’s incomprehension. The thing is that Netflix doesn't really transmit his result and intern data to the public. Conclusion : we cannot really know why they decide to cancel a show. Capucine Cousin thinks that their main interest being to attract new clients onto their platform, it’s better for them to create a lot of success series than to create a few good shows that will last for a very long time. “Netflix probably wants to create a buzz on social media by releasing new shows on a regular basis.”
Furthermore, the more a show has a big budget, the more greenhouse emissions and waste we can deduce that it consumes (because it means more costumes, more

creations for the set, more energy consumed, more transportation of workers….). Those shows all had an important budget, because they were hooks fishing for new consumers: at least $120 millions for *The Get Down*'s first season, $108 millions for *Sense 8*…

This model is very ephemerous, and it's interesting to question these practices in terms of sustainability : the set, costumes, decorations, everything is used for one or two seasons and then destroyed. Same idea for the workers, whose show can be canceled even if it created a strong fanbase.

Since the beginning, Netflix has been promoting its algorithm when promoting its platform, as the algorithm is its biggest strength. So, what does the algorithm do exactly? Well, it analyses a lot of the viewer's data, for instance at what time are you watching content, how long do you watch it for, if you quit watching and after how many minutes, what you watched before and after…

In 2017, Wired published an article in which Netflix's vice-president Todd Yellin explained a little bit more about the algorithm. He explains that Netflix is organizing its 125 million subscribers at the time into 2000 preferences categories, depending on what they seem to like. "Figuring out what people like is Yellin's job—and that often means spending a lot of time with data scientists and machine learning engineers." (Wired, 2017). Netflix even uses some shows as experiments to figure out some precise data. For instance, the show "The Defenders" was used by Netflix in order to understand how some viewers can be attracted to a new kind of content that they didn't like before. In the article, Yodd Yellin takes his wife as an example: she doesn't like Marvel's movies, but likes when the lead protagonist is a woman. Thus, he showed her Jessica Jones by hiding Marvel's logo at the beginning. With The Defenders, the idea is to see what kind of viewer will jump from one series to another, and according to what. Here is a figure created by Netflix that shows how everything is analyzed and dissected in order to understand each viewer:

Image 1: The Defenders (Watercutter, 2017)

Here the example was taken from some TV shows instead of movies. But the way that Netflix analyzes its consumer and makes blocks of preferences is impacting the whole way of offering content, and ultimately producing it, from tv shows to movies. Netflix's algorithm is very practical for the viewer in a way, because it shows them what they like, it decides for them what they would want to see and what they dislike. Todd Yellin says it himself in the interview: "Take someone like my 75-year-old mother-in-law, who enjoys Grace and Frankie. Are we going to necessarily suggest Iron Fist to her?

Absolutely not. But there is going to be a subset of people it appeals to, so we have to get smart about which people" (...) "So when something like The Defenders comes out, we'll look at what percent of people we showed it to actually clicked play, what percent of people had to go and look for it when we should've presented it on their homepage at the top."

So, what could be the problem if the viewer is satisfied with watching content that was made and offered for him? We can draw a link between this algorithmic way of watching content, and what is called the "filter bubble", or "ideological frame", an idea developed by Eli Pariser in 2010. As Dr Richard Fletcher writes : "A filter bubble is a state of intellectual or ideological isolation that may result from algorithms feeding us information we agree with, based on our past behaviour and search history".

The filter bubble phenomenon is often talked about when it comes to the question: how do people get their news from? But this idea can also easily be linked with plateform's practices such as Netflix's, because both are about personalisation of content. Richard Fletcher draws a distinction between self-selected personalisation and preselected personalisation. Self-selected personalisation can be defined as the personalisation "that we voluntarily do to ourselves", with the choices that we make, for instance: where we choose to get our information from, what newspaper we are avoiding and which one we are buying instead. Academics also call this phenomenon "selective exposure".

On the other hand, pre-selected personalisation refers to the selection that is made to people, usually online thanks to algorithms, and sometimes without their awareness. In this case, the choice is not made by people, but on their behalf. (Fletcher, 2020).

In the case of SVOD platforms, we could say that they use both self-personalisation and pre-selected personalisation. Self-personalisation because of what we look for in the research bar, and the "list" of content that we like when we first subscribe that will help the platform understand what we might like from the beginning. But it seems that self-personalisation stops here when it comes to platforms, because then, every choice

that we might make is previously suggested to us, and will have an impact on future choice… And future productions.

As we said previously in the definition, a filter bubble can be defined as a “state or intellectual or ideological isolation” because the algorithms are analyzing the viewer’s every move. To understand the phenomenon better, we can remember that the bubble phenomenon played a role in the results of the presidential election in 2016: the company Cambridge Analytica used social media’s data in order to do psychological targeting (Noujaim & Amer, 2019). Psychological targeting can be described as “the practice of extracting people's psychological profiles from their digital footprints (e.g., their Facebook Likes, Tweets or credit card records) in order to influence their attitudes, emotions or behaviors through psychologically informed interventions at scale” (Matz & al., 2020). Lastly, as Alexander Nix stated, “Today in the United States we have somewhere close to four or five thousand data points on every individual ... So we model the personality of every adult across the United States, some 230 million people.” (Cheshire, 2016).

Of course, Netflix’s algorithm doesn’t have this scale, but it is always interesting to see what those technologies can be used for. While it could be seen as practical at first, this effect should be reflected upon because of its potential downsides. As we reflect on the notion of sustainability, it is important to ask ourselves: can this way of distributing content be sustained? Can we keep seeing films that way? An answer would be: we can, as long as we realize it, and that it is not our only way of content consumption. Of course, Netflix's algorithm (and other platforms’) is made so that we find it practical. But it seems to be important that as a society, we keep having multiple access to different content: SVOD platforms, but also movie theaters, festivals, TV channels… It allows us to avoid putting ourselves in a comforting bubble of online material that we like and agree with, and on the contrary, expose ourselves to differences. As everything involves new practices, it is important to gain consciousness of how and why it is happening, in order to recognize potential downsides, of things that we, as consumers, should be aware of. In that case, we should keep in mind that algorithms are also an

ideological frame, putting us in thoughts, ideas and experience that we agree with and we know.

2.4 Sustainability in terms of content

2.2.1 Does the end justify the means?

“Nobody on this earth can convince me to be happy about all that”. That’s what Werner Herzog declared at the end of the shooting of his movie *Fitzcarraldo*. (Blank, 1982). *Fitzcarraldo* (1982) is a good example of a movie that was created in total devotion to art, with the core idea that the end (here, the movie) justify the means. In 1982, sustainability concerns were not as present as they are today, and they were definitely not considered in the making of Herzog’s film. First of all, we can see clearly that ecology and preservation of the environment were not a concern for the director. We can see this clearly when looking at how the shooting of the movie went, without even talking about the environmental consequences of bringing an entire crew deep into the amazonian forest in order to shoot a film and live there for a few months. One of the most impressive facts about this movie, which is also proof of the lack of sustainable behavior, is the fact that for the needs of the plot, a 320 tons steamship needed to be dragged up on a 40° hill by 60 natives of this part of the forest. Trees were cut down, the hill in itself was changed, to create a path for the boat. Furthermore, to create this path and help the natives to drag the path, a bulldozer was brought into the forest. This also brought more problems seeing as the bulldozer was second-hand, and breaking all the time, meaning that new parts needed to be flown down from miami. Moreover, the bulldozer in itself needed 150 gallons of fuel per day, which needed to be flown to the forest. Today, the boat is still in the forest, since it was left there at the end of the production. Besides environmental issues, we can question the practices of this production regarding social rights, in particular regarding the

native's security. Before even finding the right shooting location, Herzog and his crew had to move from one previous location, because there were tensions with local authorities that did not want the movie to occur. One of the reasons is that at that time, they were already facing issues regarding foreigners and deforestation, and they wanted to protect their land. One of the natives from the council that refused the documentary stated "from the start, they never considered that the communities here had their own authorities. They never respected the organizations that are here". (Blank, 1982). Tensions rose so high that some armed natives forced Herzog and the crew to leave that first shooting location.

They eventually found another location to shoot the film, but there were tensions between native tribes even there. Two native people were shot by arrows, one man at the throat, and one woman at her hip. Nevertheless, Herzog did not abandon his project, nor will he ever abandon it despite the recurring problems and injuries. This film is known for the number of people that were severely injured, or worse, during the shooting process. The steamship scene was also extremely dangerous for the workers. To drag the boat up the hill, Herzog hired a Brazilian engineer to invent a system. The system could only work safely on a 20° hill, but Herzog insisted on having a 40° degree hill: for him, the making of the movie needed to be difficult and dangerous, in order to preserve the metaphor of the movie. He also refused the use of special effects, wanting to shoot images that had never been shown before. Eventually, the engineer left the production, seeing as he did not want to participate in something so dangerous: he estimated that there was only a 30% chance that the system would work, and that out of 60 native workers, 30 might die. Herzog continued the scene anyway, without an engineer, to protect what was the most important to him: the film's metaphor. The natives also worried about their safety, and the reckless behavior of the director. They declared on camera that the owner of the ship should be taking as many risks as the workers: "If we die, he should die too" (Blank, 1982). These are only a few anecdotes of everything that went wrong during the filming of *Fitzcarraldo*. Werner Herzog received the Best Director award at the 1982 Cannes Film Festival, and still today, the film is considered as a masterpiece, and its director, a brave genius. But

in the end, one question remains: are all of those behaviors worth it? Should we let every artistic project see the light of day, without ever questioning its consequences, in the name of art? Even Werner Herzog did not seem entirely satisfied at the end of the shooting of *Fitzcarraldo.* In 2001, talking about this experience, he described himself a "conquistador of the useless"(Herzog, 2001). The director of the documentary that followed Herzog to film the behind the scenes, Les Blank, was also exhausted and worn out at the end of the shooting. In his journal, he wrote that he felt "like some Viet Nam veterans, horribly calloused". He also wrote: "I'm tired of it all and I couldn't care less if they move the stupid ship – or finish the fucking film" (Blank & Bogan, 1984). This movie is an interesting example when reflecting upon the question: does the end justify the means? *Fitzcarraldo* even seems to be a metaphor about this, considering the fact that the plot itself is about a man exploiting nature in the name of art.

2.2.2 The willing suspension of disbelief and our cultural imagery

Cinema, just like art in general, has a power of persuasion. We could for instance think about how cinema is used as propaganda in times of war, and why "propaganda films" were created in history. "A propaganda film is made with the intent that the viewer will adopt the position promoted by the propagator and eventually take action towards making those ideas widely accepted." (Kuhn, A., & Westwell, G. 2012). For instance, still today, Leni Riefenstahl's propaganda films are well-known for the power of persuasion that they used to have during the Second World War in Germany. Apart from the extreme example that is propaganda, films have the power to put the viewer into another mental state, to a point that the viewer forgets his existence, with his focus entirely into the piece of art, for a few hours. This state of mind allows new ideas to emerge, new experiences to be known, new realities to be aware of. This power of persuasion and sharing knowledge is a major asset when it comes to changing mentalities, and habits, in order to achieve more sustainable goals as a society for instance. This process of transporting the viewer into another reality can be described

with the theater metaphor: “The theater provides an excellent illustration of such playing on the part of adults. The transition between realities is marked by the rising and falling of the curtain. As the curtain rises, the spectator is transported to another world (...) when the curtain falls, the spectator returns to reality, that is, to the paramount reality of everyday life by comparison with which the reality presented on the stage now appears tenuous and ephemeral, however vivid the presentation may have been a few moments previously (Berger & Luckmann, 1966). Art has the power to “transport the person from being a spectator to being absorbed by the characters and the story”. (Ferry, 2007). In our case, the piece of art being a movie, we can better understand how the spectator is in another mental state while he watches cinema, a mental state that has the power to bring some new ideas into the light, and eventually, change mentalities. Recently, we can think of how *Don’t Look Up* (McKay, 2021) had a very important impact on its viewer, because of its metaphorical depiction of modern society’s blindness towards climate change. “Environmental, climate and weather-related factors have long been a part of the American cinematic narrative” (Vaughan, 2020), and it is interesting to see how our environment and climate change are being used in cinema to serve content, creating our common cultural imagery. Our cultural imagery is shaped by what we see and consume, without even realising it. One of the reasons why is what Coleridge called the “willing suspension of disbelief” (Coleridge, 1817). This concept states that a viewer accepts, when watching a piece of art (in our case, a movie) to forget his critical thinking and scepticism, in order to appreciate the movie more. Indeed, would a viewer appreciate a superhero movie if his skepticism was reminding him that what he sees is not true? The willing suspension of disbelief is important for the viewer to be carried away by the film. But this state of mind during the viewing of a film can also allow the content to be very persuasive. An author, or director, could infuse a "human interest and a semblance of truth" in a piece of fiction because the viewer would suspend its scepticism, and therefore accept the narrative that is being given to him. This phenomenon is the reason why, as viewers, we can accept that the story that is being told is real, just for the time of the movie. Thereby, we will be afraid during a situation that can’t exist, and care for characters

that do not exist. Although Coleridge invented and described the concept of willing suspension of disbelief, Aristotle already discovered a similar phenomenon as described in Poetics (Aristotle, . 335BC). Aristotle conceptualized the fact that in theater, the viewer “ignores the unreality of fiction in order to experience catharsis” (Safire, 2007). Catharsis can be defined as “the purification and purgation of emotions through dramatic art” (Merriam-Webster's encyclopedia of literature, 1995) or “the process of releasing strong emotions through a particular activity or experience, such as writing or theater, in a way that helps you to understand those emotions” ("catharsis", 2022). Hence, the power that any form of art had to transport its viewer or reader is well-known for centuries. This phenomenon, that we will call willing suspension of disbelief, therefore has the power to allow new ideas to emerge in the viewer’s mind, while his scepticism is off, and shape our common imagery. When the movie is over, the viewer has time to process what he saw, and then reflect upon it, allowing new ways of thinking to emerge. In the case of sustainability, this concept being very complex and broad, movies can help the viewer see that other narratives are possible. For now, it seems that our cultural imagery is shaped by a catastrophic vision of global warming, this narrative being used, in fiction, in a lot of post-apocalyptic movies.

This power of movies through content exists only if the viewer confronts himself with content that he never saw before, that is new to him. It only exists when we experience content that is outside our “filter bubble”, as we saw previously. However, this can only be true if we protect and encourage cultural diversity in our societies, that allows every type of content to emerge.

2.2.3 Resilience and cultural diversity

In the past few years, the movie industry experienced numerous changes, from new ways of production to new ways of diffusion. There are a few outcomes to these practices that we can look at and question through the analysis spectrum of

sustainability. Indeed, sustainability is also assuring that our system, financing cinema, is protected and working properly, in order to continue to produce a diversity of films.

Global warming is bringing risk upon the cinema industry, since it is threatening the well-being of our global economy. That is why the concept of resilience is very important when discussing sustainability and movies. Resilience can be defined as “the ability of people or things to recover quickly after something unpleasant, such as shock.” or, more metaphorically, “the ability of a substance to return to its original shape after it has been bent, stretched or pressed”. (Oxford Dictionary, n.d.). If we, as a society, follow the IPCC’s predictions in the future, we should be expecting “climatic or non-climatic shock, e.g COVID 19, drought or floods,that disrupts the development pathway” (IPCC, 2022), as we saw earlier in this thesis. Those “shocks” will be disruptive for our economy, just as the covid 19 crisis was. Resilience will be a very important concept in the future: we need to protect our cinema industry, and reinforce it, in order to protect culture even through crisis.
To do so, public powers need to take measures and protect cinema, including when it comes to the economic changes brought by the rise of SVOD platforms.

If we take the example of Netflix’s arrival in the market, especially the French market, and all of the issues that came with it; it comes from the fact that it is a new platform, hence, we have to think about it in order to regulate it. The goal would be to let new ways of consuming cinema come into our lives, but to escort it in order to also protect the system in which the new platform is evolving. To understand this phenomenon, we could link it with the arrival of platforms such as Uber and the uberisation of some services: yes, it is convenient for the consumer. Those technologies are practical, liked by the public; but they also bring their share of social inequalities, such as the lack of social rights in the case of Uber’s workers. As Florence Chee states it in her findings: “privatization and a lack of labor regulation may present a significant savings to the user, but full cost economics suggest that the social and environmental costs require consideration” (Chee, 2018). In those cases, it seems that we only focus on who owns

the new company in question (Uber, Netflix), and what are the advantages for the consumer or the viewer. However, the social and the economic cost must also be taken into account, because a whole system is at stake, and without the consumer's awareness the system could collapse if not protected.

In 2018, during the Cannes festival, the french minister of culture Françoise Nyssen declared to cinema professionals that "this is no longer the time of confrontation" (talking about Netflix). She said that Netflix is now part of the French audiovisual system, and as long as it plays by the rules, we need to embrace the platform. Furthermore, it seems that Reed Hastings, Netflix's CEO, agreed to pay a 2% tax to the CNC to invest in French cinema. (Cousin, 2018).

Yet, this promise from Reed Hastings doesn't seem to reassure other professionals in the industry. In 2021, more than 150 directors and SRF's members wrote an opinion column about how there is an "uberisation" of directors, and how this is a threat to creation in France. Among those signatories, we can find Julia Ducournau, Palme d'Or of the 74th Cannes Festival for her movie Titane (2021); but also Audrey Diwan, Golden Lion at the 78th Venice International Film Festival for Happening (2021). In this opinion column, those professionals speak up about the difference of payments between the classical diffuseurs, payments assured by the SACD, and those paid by platforms such as Netflix. "We are writing to you today, because a virtuous system for the authors and for creation is being dismembered. And no one seems to realize" (SRF, 2021). Usually, royalty payments are paid in terms of months of minimum salary. That way, even if there is inflation, it assures that the authors will be paid consequently. For instance, Canal+ buys royalties to an author for the amount of 18 months of SMIC. In may 2022, this amount would be a little bit more than 29.000€ (without taxes). France TV would pay between 10 and 13 months of SMIC, which represents around 16.000 and 21.000 (without taxes). This system was created to allow directors to have an amount of money that allows them to fund themselves for a few years, while they are working on their next project. As for Netflix, they spend the amount of 3 days or 2 weeks of SMIC,

on average, on royalties, which represents between 200€ and 1000€ (without taxes). ("Cinéfinances — Accueil du site", 2022).

As we said, the idea is not to cancel Netflix and other SVOD platforms. Nevertheless, public institutions have a key role to play because they are the ones who can make decisions and bring major changes in order to protect the industry. The movie industry is a very fragile one because its diversity is only guaranteed by a fair and supervised finances system, especially the French movie industry, regarding “la chronologie des médias”. If we don’t protect it, it could collapse, leading to less cultural diversity, as we saw earlier when we reflected upon SVOD platforms. Public institutions should accompany those kinds of changes in order to make sure that our system is, as a whole, sustainable; in other words, that it can still function in the future. Then, the virtuous circle of creation will assure that a diversity of films will see the light of the day, thanks to fair fundings. In the end, sustainability allows resilience, and resilience allows sustainability, through content.

3. Research Design

We will study in this chapter the research design of the thesis. We will review what research method and philosophy were chosen, then how the data collection was carried out and analyzed, and finally, we will discuss the reliability of the study.

3.1 Research method and philosophy

According to Saunders, Lewis and Thornhill, “Qualitative data are associated with such concepts and are characterized by their richness and fullness based on your opportunity to explore a subject in as real a manner as is possible” (Saunders & al., 2007). The research method chosen was selected in order to answer a research question with relevance. This thesis was carried out as a qualitative research for that purpose.

Furthermore, qualitative data is “based on meanings expressed through words”, the “collection of results in non-standardised data requiring classification into categories”, and finally, the analysis is “conducted through the use of conceptualisation”.

The nature of this thesis is exploratory, because there was an analysis of non-numerical data in order to understand and interpret concepts and ideas. Exploratory researches are helpful in order to get insights and to better understand a phenomenon (Saunders & al., 2007).

The interviews were unstructured. According to Saunders, Lewis and Thornhill, unstructured interviews are the more frequent types of interviews for exploratory research (Saunders & al., 2007). In this thesis, unstructured interviews allowed to adapt to the interviewee’s thoughts and thereby let new ideas emerge. Indeed, the purpose was to discover as many insights and new ideas as possible from a few professionals.

The philosophy of this thesis is interpretivist philosophy. According to Saunders, Lewis and Thornhill, an interpretivist philosophy argues that “the social world of business and management is far too complex to lend itself to theorising by definite ‘laws’ in the same way as the physical sciences (...) rich insights into this complex world are lost if such complexity is reduced entirely to a series of law-like generalisations.”. Furthermore, an interpretivist philosophy argues that “The challenge here is to enter the social world of our research subjects and understand their world from their point of view. “ (Saunders & al., 2007).

3.2 Data collection and sample

During the data collection process of this thesis, in-depth interviews with a few interviewees were conducted, because to answer the research question, thorough insights from a few professionals were needed.
The interviews were non-standardised, one-to-one, and conducted online.
The data available, both video and audio, was sampled because of the analysis of the data: only the parts that were pertinents to the findings were transcribed. Then, a content analysis was conducted.

Two factors were acknowledged in order to choose the interviewees:

1) The individuals are professionals in the movie industry
2) The individuals are specialized about sustainability and implement it in their work.

Table 1: background information of the interviewees

Interviewee	Nationality	Localisation	Work title	Type of recording made of the interview
Anne Ahn Lund	Danish	Copenhagen	Eco-manager, SF studios	Video and audio recording
Tim Wagendorp	Belgian	Brussel	Sustainability coordinator, Flanders Audiovisual Fund	Audio recording
Ronny Fritsche	Swedish	Stockholm	Sustainability expert in film and tv & Producer	Audio recording

3.3 Data analysis

The data was classified into meaningful categories for my research question, categories derived from the data itself or from the theoretical framework. The categories both have an “internal aspect” because they are meaningful for the data, and an “external aspect” because they are meaningful “in relation to other categories”. (Saunders & al., 2007).

Some units of data were detached from the rest of the data transcription, which are citations of one or multiple sentences that fit the category in question.

3.4 Validity and reliability of the study

“Reliability refers to the extent to which your data collection techniques or analysis procedures will yield consistent findings” (Saunders & al., 2007). In other words, reliability describes the consistency of the study: “will the measures yield the same results on other occasions? Will similar observations be reached by other observers? Is there transparency in how sense was made from the raw data?”(Saunders & al., 2007).

One of the downsides of writing qualitative research using unstructured interviews is that the findings won’t be as reliable as a research where many structured interviews were conducted. They can indeed be more subjective to the interviewee and interviewer’s subjectivity on the topic. Subjectivity might also be an issue when it comes to the interpretation of the data and the creation of the categories that are only created through my perception. Furthermore, the sample being small, the data might not be generalizable. However, this data doesn’t seem to encounter the issues of participant bias, or participant error. Observer bias might occur, because of subjectivity and interpretation.

When it comes to reliability, it is “concerned with whether the findings are really about what they appear to be about” (Saunders & al., 2007). In that case, the results seem to be accurate. However, data interpretation and development of conclusions might emerge.

4. Findings

This chapter presents the findings of the different interviews that were conducted. We will study the different ideas that are the most pertinent in order to understand the notion of sustainability in films, and to see how we can define a film as being sustainable. The findings are presented into some categories, or subjects, that were the most talked about during the interviews. Those categories are: the challenge of defining sustainability, practical actions, the need to make choices, changing mentalities, the impact of content, questioning a system, human well-being, sustainability and activism, and finally, education and research.
The citations are displayed in Italics.

4.1 The challenge of defining sustainability

Sustainability is a complicated concept to understand, define, and implement. It is a really broad topic that includes a lot of different aspects. The findings suggest that sustainability is a very complex, and embedded concept, that we need to define in order to be able to implement it.

> *"What I see is people use a lot of fancy words nowadays to describe sustainability, but they don't know or don't understand the complexity of that. And even at European level nowadays there's a lot of efforts about sustainability, but people, they just do whatever. Some people talk about green, but green is a color. Some people talk about CO2, which is CO2 neutral when you try to compensate for whatever you produce. Some people will talk about life cycle assessments or biofilters, or more about ethical aspects of the production, not using chemicals in agriculture, etc. Some people call it ecology, but ecology, that's about plants and animals ecosystems (...) In the end many people talk about a lot of things without really knowing what the real goal is" (I1)*

“For me, it's about almost like a Swiss Army knife: it's about psychology, it's about knowing how to do things, it's about people that can teach you or coach you or guide you; It's about having cash, it's about having a motivated crew, having a fund supporting you financially on sustainability; It's about knowledge of all the different crafts, people working in different departments (...) And for me, then the next question is where does it stop and where does it end?” (I1).

The theoretical framework of this thesis used the United Nations’ Sustainable Development Goals in order to define sustainability, and what should be done in order to achieve sustainable development. As a matter of fact, data shows that the SDGs are a very practical tool to use:

“And in a way I use them as a moral compass because it's more sexy to talk about these than about CO2” (I1)

Since the concept of sustainability is very broad, companies tend to use it without being transparent about their practices, as we saw in the theoretical part of this thesis. What does it really mean when a company claims to be carbon neutral or net zero? How is it even possible to be carbon neutral when creating something? When those claims are made, it is often because the company uses carbon offset as a way to achieve net zero, even if besides that, no efforts are being made. A company should not define itself as being a carbon neutral content creator because the pollution and waste generated is being compensated with money donations and tree-planting.

“I just really dislike people talking about being carbon neutral, because it's lying” (I2)

“Because how the hell can I reduce all the stuff I have been creating? You could also say no but we have to reduce the percentage 10% less or 5%. But then the question is what is your reference? Do you have to make the same film twice, one time trying to waste as much as possible and the second time trying to be as intelligent as possible? That's impossible” (I1)

“No, carbon offsetting is not a solution at all. It is also just a fake solution. And for example, the money you spent on climate compensation that are maybe in planting trees or things like that, you have no guarantee. It's not that the CO2 you release immediately disappears from there. When you plant those three, the positive effects are many years ahead and there is no guarantee that those trees will be there in six years. And it’s too late. In six years, it’s too late.” (I3)

It appears that, to achieve sustainability, a film has to be made following very practical actions that are calculated, defined, and planned in advance. Otherwise, the money spent on carbon offset had no guarantee of being efficient at all. Furthermore, as we saw in the theoretical part, the efforts have to be made now, not in a few years when the trees from the carbon offset campaigns are big enough.

4.2 Practical actions

As we said previously, a sustainable film is, partly, a film created by having environmentally friendly reflexes on set. One of the ways to achieve that, is by employing an eco-manager. Yet, because of the novelty of the job of eco-manager, its missions are still not well defined, and very broad. That is why the actions that are implemented have to be implemented through steps. The first step would be to implement very practical actions on set, look at the budgets, and change the little things.

“We implement zero waste tools (...) no food waste (...) and we reuse in all departments, both like buying used objects or renting them, and then making sure that they can be reused again.”(I2)

“There should be no single use, no plastic, no cardboard (...) We only use plates that can be washed again. We really limit day to day waste.”(I2)

“We all know that if we want to live more sustainably, it's very important to plan; and it's down to everything you do in your private life. For instance, if you want to sort your waste, you will need buckets, but also something to come pick it up when it’s full… Or if you go to a picnic, you know that you will need to drink water, so you plan this and you bring your bottle. Otherwise you will need to buy plastic things at the last minute, that you will throw away in the end. It’s the same in production.” (I2).

“Food is important because everybody eats, and it touches people in their stomach, in their heart. So it's important to work on that because it's very feasible and very personal. So I'm not saying: eat veggie! But you should talk about it with your crew and give an example.” (I1).

Those practical actions will then allow eco-managers to collect data, and discuss with the people to see what is working and what could be improved.

“So that's what the next next step is for me, that I'm collecting a lot of data on these productions, both hard and soft data. I'm going to measure the footprint of the production so we can see exactly how much they spent and saved on each of the things that we implemented. I’m also collecting soft data, I'm interviewing the film workers in each Department. How is it working with this? And often they have so many good ideas of how because in their heart they really want to do it

better. But again, the system is just not working with them always. So for me it's also about collecting data from them because in each Department they obviously know their place best" (I2).

Once again, we can see that sustainability is about planning, measurements, data collection, calcultations. It is a process that takes years to be implemented: the first years are dedicated to the simpler actions, very practical habits that can be applied; and then bigger changes are made, because the sustainability process is changing the worker's mentalities.

4.3 The need to make choices

Since sustainability is a very embedded concept that depends on a lot of factors, and since it is not possible to be carbon neutral in this domain, then choices need to be made when it comes to balancing sustainability measures and liberty of creation. That is one of the difficulties when it comes to sustainability: when does it end? What do I prioritize?

"We are working on an eco calculator online where we try to have scientific data to help people to get inside of their potential impact and to make sustainable choices" (I1)

"And also say no to people. If somebody says ``can you drive me there" you can also say no, you take the train." (I1)

"And for me, innovation is not only about technology, but it's also in how you use it. Imagine what would be best: if you have four Tesla cars for four people (...) or that you put these four people in one deal car, and you have them carpooling. In the end, the Tesla will be more expensive and more polluting. People think that

they are the magic solution, but they are not. It's also in the behavior and the choices you make, not only in the fancy stuff you buy or rent." (I1).

"For instance, having a talk with the light Department, that is very good right now because they almost changed all the lamps into Led. But then they sometimes have a challenge with the creative team saying that they want these big lamps, because they are looking for this specific look; but then we have to use a generator because we don't have a grid we can plug the lamps into… So we have to talk to the creative team : could it be done differently, with less light, or natural light? And if not, then we should just know that for the future maybe it's going to be a demand, then to avoid having this energy-intensive generator you just pay for an electrician to come and make a plug." (I2).

The difficulty of sustainability in the field of creation is the fact that choices must be made, and sometimes one of the two elements must be prioritized: the content, or the carbon footprint. As the findings shows, creation sometimes needs specific tools that consume a lot of energy: the eco-manager has, in this case, to create a dialogue and choose which is the most important in the end.

4.4 Changing mentalities

As we saw earlier, sustainability begins with planification, calculation, and data collecting, in order to implement little changes. Then, the bigger goal once new practices are implemented, is to change the mentalities on a bigger scale, on the set but also through content. Indeed, it is only when people can see, with material proof, that sustainability is a viable option for a movie, that the process will be able to go even further in the sustainable choices that are being made.

“So right now the change for me, because now I'm telling you, I'm starting with very practical stuff under production. But what we need is actually changing the mindset of the film workers and the financials, and that’s my goal. So people need to think differently, but we also need to change the infrastructure so it's possible to work differently.” (I2)

“People are just not thinking about the environment when they're making decisions. That's the ultimate goal.” (I2)

“And then again, it's linked to the question, when is the project sustainable? Because we asked them to measure it (...) when you're doing a film production, you have a much bigger potential savings, much bigger than you will ever be able to do in your private life. So the question is, how can you convince people, professionals, to think about sustainability when they're doing the job?” (I1)

Mentalities are already changing. People know that they need to take responsibility, and they want to, but don’t always know where to begin. Indeed, especially in the movie industry, the force of habits is very hard to dismantle. Once again, mentalities have to change so that people that want to act in a more sustainable way are given the means to do it.

“Most people know that they have to take responsibility, but it's very hard for some people, a lot of people, it's very hard to take that responsibility out of the air and know, how much do I have to do? Do I have to figure it all out by myself?” (I2)

“It's a lot of habits that need to be changed, but they know and they feel like they want to do something. The bottom line. I've talked to so many people in the industry now for the past three years about this, and it's also about like, does it

make sense? It will make more. It's just more meaningful to go to work if you're not destroying your environment, making entertainment" (I2)

But mentalities can be difficult to change because of working cultures and habits that are complicated to dismantle. Since the cinema industry is competitive, new incomers could not dare to speak up and try to change habits in order to protect their personal careers. That's the reason why, once again, we can see that changing mentalities in a key aspect in order to implement sustainable habits.

"You have to accept certain working cultures in the industry all the time, and there are so many hierarchies, old people telling you: This is the way we do it, we have always done it this way, you have to accept this. Listen to us. We know how it works." (I3)

"Both the director of Avatar and the director of Don't Look Up, they say they are very committed to climate and it looks like they care very much, when you read interviews. But they are Hollywood directors that also needed to accept certain working cultures. I'm not sure that they wanted to use those production methods, but they are working in a business and an industry that forces them to work in a certain way that is not sustainable". (I3).

4.5 The impact of content

As we saw in the theoretical background, contents such as fiction and documentaries feature-films are a great way to change mentalities, and touch people in a way that they were never touched before. But that also means that the writers have an ethical responsibility when writing a script, because they are the ones that can implement

changes, even little ones, that will in the end help to shape our new common cultural imagery.

> *"If you want to write a story, how sustainable can a story be ? I'll give you an example. This is a game we funded (...) You have to collect waste in the city and create a new society with it. I spoke with the producer of this game, and I said: you created a Trojan horse, because you are communicating directly on the private screen to all these gamers about how it is important to clean the ocean, and use this material into something new. So in a way, it's talking about sustainability in the game while you're having fun (...) you reach people that they (institutions) will never reach with their fancy websites, and closely, for sure." (I1).*

> *"And then the last part where you play a role with storytelling is when you write a script (...) The things you write, they have to be produced. So the people that write should be aware of that impact. (...) there is a role to play somewhere by writers" (I1).*

> *"I think you have a responsibility to analyze that script from a sustainable perspective. Let people with different perspectives and experiences read your script. Make sure it is not reproducing stereotypes. And in the same way that you have a responsibility to analyze all those social values in the script, you also have a responsibility to look at what this story does for nature." (I3).*

Yet, as content can have a good influence for sustainability, it can also be harmful towards the environment and communities, depending on how they are being portrayed in the film. Films have a great influence, and they can also represent harmful stereotypes, contributing to strengthening unsustainable behaviors.

“If you're shooting in Finland, in the forest, then maybe sustainability is not only about shooting and logistics, but also about how you behave in the forest. How do you make sure there's still the forest once you're done? Or maybe it's about how to represent Indigenous people.” (I1).

But often, content is used as an argument to convince people that it is acceptable that a film pollutes the environment, because its content has a greater impact on people than the pollution that it emits. In the end, pollution emitted by a film would be the price to pay for a greater good. That’s when it is very interesting to reflect upon the notion of art, and the value that art has in our societies. Some stories are indeed very helpful in order to create new narratives. But most of the time it seems that stories, especially when it comes to fiction, are not so challenging:

“Because we are so stuck in old norms and maybe we think we're telling a story that does something good. But many times, in terms of sustainable development, it is actually the opposite. Especially when it comes to ecological sustainability. I think stories are a little bit better when it comes to the social aspects, like trying to create a more friendly world, for example. But when it comes to ecological sustainability, stories are many times, just showing that personal success from money and those material things, they are making you happy as a human. Or that oil is something good for the society, if you can take vacation there and there by flights… That's something we want to do as humans. And these are images that are produced over and over again. It's not actually telling and showing us an alternative way of living today. Maybe the documentaries are a little bit better at that. But in fiction, they are not breaking any norms and challenging us in the way we live” (I3).

In order to have meaningful content, it is important that the industry assures the diversity of stories, as we saw in the theoretical background. Diverse stories come from

diverse people, and it is important to let every voice be heard when it comes to creation of content, because that's when we will have a lot of different meaningful stories be told.

> *"The film industry is talking very much about inclusion, and I cannot see how we can include diversity of stories, when we're not having a working environment where everyone is welcome. For example, will Greta Thunberg or someone with her mindset become a filmmaker in the future, if she is forced to enter this industry where she must finance the film in a certain way, where she will need to travel and use tax incentives, big trucks, planes, et cetera; will they become filmmakers? Will those stores be told? I don't think so (...) And of course I'm not naive. I'm not saying that everyone should work like that. But we have to challenge ourselves with new pilot projects, new ideas (...) That should be allowed in this industry, but they are not welcome today."(I3)*

One of the questions that are interesting to reflect upon when it comes to content, is: should we accept to do unethical actions in the name of art?

> *"One example is this film, Mia and the White Lion (...) And this film is like criticizing keeping Lions at farms and this industry. But how did they do the movie? They hired a lion, who is held in captivity, to be able to make this film. They needed to support this bad industry that the film criticizes. And here it becomes a conflict in my head. Are they true in their intentions ?" (I3).*

It seems that sometimes, as we said, sustainability is very hard to define, and sometimes decisions are made according to your own moral compass. In the case of a film that finances a bad industry, is it necessary to film a real lion? Could this story be told using animation instead?

"And when we talk about quality in film, the only thing the industry talks about is the quality on screen. We never talked about how this was produced. And that's something that is quite interesting. The thing is that we are not talking at all about how we produce it, but only talking about what we see on screen. I hope that the industry redefines the term quality on screen. What is that? And a piece of quality cinema should be produced in a way that is not making any violence on humans or the planet."(I3)

4.6 Questioning a system

Public and private institutions have a key role to play to push productions to be more sustainable, especially when it comes to fundings and regulations. One of the biggest issues when trying to be more sustainable on set is the transportations, and in particular, the need to take flights to travel from one country to another. Big productions are encouraged to take planes and go shoot in another country because of tax rebates.

"You will always look into trying to get as much local crew as possible but it's very complicated, the field of international shooting, because if you're making a big production you're very dependent on a lot of money and right now and it's not only film it's like the whole economical system in Europe that you get a lot of tax rebates in some countries. So that's a huge thing. But it's the same for all industries." (I2)

Tax rebates are used by countries, in the movie industry at least, in order to attract big productions. Indeed, big movie productions can, on the one hand, be good for the economy, because it's millions of euros that are spent on the country.

“Of course, I am against that. I'm against it all in all. But this is something we cannot do anything about right now” (I2).

“We get some tax rebates because we say, for instance, that we're going to spend 4 million in this country, we're going to hire local crew, we're going to eat here, we're going to live here, we're going to drive here, everything. We're going to use a lot of money, but then you get a tax rebate. So you basically just get more out of your money. (...) It makes a lot of sense to go to another country sometimes, because otherwise you will have to find the money locally, and maybe you cannot do that.” (I2).

On the other hand, a big production film will be good for the countries’ image.

“That's why they want the tax rebates here, because then it will make more sense for Christopher Nolan to come and shoot a film in your country”. (I2).

So, when it comes to our European economic system, and tax rebates, it seems a bit counter intuitive to think that it makes more sense for a production company to shoot in another country instead of its own. This does not encourage sustainable behaviors: it should not be easier to have money from another country than your own. That is the reason why eco-managers and sustainability experts try to change what they can :

”So what you do is you have those huge CO2 emissions (plane transportation) and you try to kind of compensate and make them less as you can in the day to day.” (I2).

Yet, some funds institutions are aware of the role that they have to play.

“It's not for my job as a fund to tell you what to write about, because that's called censorship” (I1)

“In a way, when you give away cash, you have some power or some influence. What we do as a fund, we say, okay, we give you money. And when the catch is, let’s say, for production, then we need to make sustainable production choices as well as possible (...) And that's a way that we, as a fund, try to translate or to open a discussion about sustainability with our industry in our region and also share that with others in Europe.” (I1).

4.7 Human well being

Sustainability is, as we saw in the theoretical background, also about human’s health and well-being. If a film is made with environmentally friendly behaviors on set, but the behavior towards the employee is wrong, then the question is to know if the film can be considered sustainable or not.

“A question you could ask is: what's the purpose of having a carbon neutral film set, when your boss is a sexist?” (I1)

One of the issues when talking about the workers in this industry, are the questions of the contracts. A lot of contracts are very short-term contracts. This makes things complicated not only for the worker’s social security, but also when it comes to implementing long term sustainable changes: it is impossible to do so on a project-based contract, or a year contract.

“But then the next step will be the productions that will come later that I have more time to plan, then we obviously can limit the emissions a lot more and change more the mindsets and just try bigger stuff out. So that's a really good thing about me being there for a longer period. We can make bigger changes and show the industry this was possible” (I2)

“One of the biggest challenges in this industry is to make it more sustainable, that is very much linked to the help of the people who work in this industry. Because of this gig economy, the industry is based on so many freelancers and very short contracts. And that's not a working environment where you are allowed to work long term on things.” (I3).

“I think we just have to create them (sustainable jobs)*. That's the luxury we have in this crazy industry where everything is so project based and people are not hired for a long time. And that sucks in some ways, but it also gives the opening of saying hey, I want to do this, can I do this for a period of time? ” (I2)*

The competitiveness of the industry and the fact that it is, for a big part, a gig economy, makes it even more complicated to have a sustainable system when it comes to the workers. Indeed, knowing that your contract can be terminated if you don’t play by the rules can push people to close their eyes on certain behaviors such as sexual harrasment:

“That's the same problem as in the “Me Too” movement. This is the bad thing that created Me Too, that you have to actually use your body or things like that to enter the film industry and that's horrible.” (I3).

Furthermore, when talking about the worker's well being on set, it is important to mention the impact that working on a industry that doesn't have a sustainable mindset can have on a person, at a very personal level:

> *"All people feel good when we do good. I think there are too many conflicts today working with film that we have to confront, that makes us feel very bad as humans, and things that we have to push away. But sooner or later it comes out, and hits us in the back" (I3).*

But nowadays, it seems that young people are more aware of social and environmental problems, and they don't want to go and work in a company that doesn't respect the environment or social justice. If young graduates refuse to work in an unsustainable environment, then companies will have no choice but to change their methods and behaviors, because a lack of young graduates can also mean a lack of competitiveness on the market.

> *"All young talents that are going into the industry now, they're super aware of the environment. They don't like getting into this business when the work environment is bad. You also have the MeToo debate hanging over it (...) so they will be very critical about that." (I2)*

> *"Now, I think that they can also attract more talent and more good will because that's also a competition that you have between the production companies that you want the best people to work at your movies" (I2)*

Some companies seem to be changing their habits step by step, and sustainable practices are being implemented increasingly.

“So right now they're also taking a big social responsibility and giving people courses and leadership and stuff like that that you didn't have before, which is, I think super important because you have so many leaders on a film production… They might not be good leaders, but they have also not been educated to be good leaders, because you're just a film director, but you lead a lot of people and you can make the life of these people very hard or very nice. Yeah, that's just very positive right now, even though things are moving super slow.” (I2)

4.8 Sustainability and activism

As we just mentioned, even if sustainable ideas are being implemented, the process is still slow. Sustainability in films cannot be only about a few eco-managers, and sustainability consultants doing the efforts as they can. This system is not sustainable for the workers, who get tired of being the only ones fighting for climate justice.

“If you work as an activist on a daily basis, you get worn out (...) I feel like we have so much responsibility to do stuff. I might still be the activist at work, the crazy person with a lot of good ideas; but I have a distance to it now. So it feels good that now I can tell them: it's your responsibility, but I can help you. But I will not die for this cause, so to speak.” (I2).

Indeed if the industry doesn’t take responsibility and only a few dedicated workers try to do all the efforts, then those people will, at some point, stop trying.

“There are so many people in this field that get super stressed out and depressed because it gets personal when you care about the people, and the planet and stuff like that. And you only meet people who say that it's not possible. We don't have money, we don't have the time.” (I2)

“But it's also like people kept telling us that we were five years ahead of our time and it was too early and we were just like, what do you mean early? Like, you're too late?” (I2).

4.9 Education and research

One of the ways for increasing awareness regarding sustainability is through education and research. Nowadays, film schools are slowly beginning to hire teacher or consultants to teach students about sustainability in films, which is a novelty in the sector.

“But there's also going to be some education workshops in the autumn that me and my colleague are going to develop. So that's also really big that they got fundings for that (...) and I'm also soon starting to consult in a film school”. (I2).

“Today when you're studying to become a professional in the film industry? In my country, you're taught almost nothing about sustainability. But should students learn about that when they study to become a professional? My answer is yes. So it all starts there. “ (I1).

Then, once students start having classes about the subject, it becomes a virtuous cycle in terms of research on the subject:

“The second thing is with education, you are the perfect example, right? Students like you can work on topics that can help me to do a better job.” (I1).

“It's not only about teaching, but also about research, in my opinion, and how research can help me or my industry to do a better job.” (I1).

5. Conclusions

5.1 Discussion of the key findings

This chapter aims to review some of the key findings of this thesis, and to conclude this research paper, that is to say, find an answer to the research question.

At the beginning of the thesis, one research question was asked: how can a film be sustainable?

As we saw throughout the research, sustainability is a complex concept, because it is embedded with a lot of other concepts, and defining where sustainability starts and when it ends is not an easy task when it comes to the movie industry. Indeed, the creation of a film depends on many processes, people, technologies, locations. Furthermore, sustainability needs to be reflected upon considering social, economical, and environmental aspects.

We firstly tried to determine how production can impact a film's sustainability. The findings of this research help us to understand that the production phase of a movie indeed impacts its sustainable value, because a production set is as much a place where creation is being crafted, that it is a workplace as any other. Thus, when something is being produced, then environmental issues are brought up. Furthermore, as a workplace, sustainability needs to be at the center of the production's consideration when it comes to the worker's social security, and well-being. It was also necessary to determine what sustainability is, and what it is not, that is to say what concepts are used in order to market sustainability, when it should not be.

This research also allowed us to reflect on the notion of sustainability in the diffusion phase, especially when it comes to SVOD platforms. Indeed, those platforms have specificities in their functioning and their relationship to the viewer that needed to be examined under the sustainability spectrum.

Eventually, sustainability in terms of content was discussed. Does the end, a movie, justify the means, that is questionable production methods? This question also brings the question of the value of art, and what our own moral compass tells us on a personal level. Regardless, cinematographic content has an impact on viewers, and on society. Our cultural imagery is collectively shaped by the content that we watch, that is the reason why we should acknowledge the importance of resilience and cultural diversity in our society, to guarantee that a diversity of stories can be told.

> *"But for me, being sustainable as a project is when you are aware of the potential impact you will have during your planned project. So you're aware before you start. And then when you start shooting or when you work on a project, then you try to make a choice between the limits of money, creativity, availability of offer and also about expectation on a set between these limits; you try to make the best process ever calculated. It's not by accident, it's calculated. And if you can say "okay, this went well, this went wrong" and you are willing to learn from that, then I think you can say that you have been sustainable, as a project." (I1)*

In the end, the study shows the relationship between sustainability and films. Both are impacted by one another: sustainability is necessary to ensure well being and economical health, which is key to having a working and performant cinema industry. Conversely, films are necessary to shape our cultural imagery, and change mentalities that can assure our development to become sustainable.

5.2 Practical implications of the findings

While previous research contributes to understanding more precisely some sections of this study, these results demonstrate that a more broad reflection around sustainability is needed in order to ensure that every professional in the sector have the same definitions, and goals.

Previous researches were already made more precisely in order to understand each detail that were used in this study. For instance, the CO2 impact of different materials used on the production phase, or a guide of European initiatives that help productions to be more sustainable, in an environmental point of vue. However, this data contributes to a better understanding of the notion of sustainability, and helps to raise more questions that need academic attention.

This thesis allows us to understand a few things because of the links that were created between theory and empirical evidence.

To begin with, sustainability is indeed a concept that is difficult to define, even if defining sustainability is very important in order to be able to apply its concept. In order to give a framework, this thesis defined sustainability according to the United Nations' definition, and the 17 Sustainable Development Goals that are associated with it. As a matter of fact, the findings suggest that the Sustainable Development Goals are a practical and helpful tool to use when working with sustainability in practice. Indeed, a sustainable film could potentially involve a few SDGs: "good health and well-being", "gender equality", "decent work and economic growth", and "responsible consumption and production" (United Nations, 2015). Those goals are integrated, which means that one doesn't work without the other, and that they are all necessary to a sustainable development. This helps us to understand that a sustainable film is a film that includes every sustainable aspect that we talked about in this paper. The sustainable goals have to work hand in hand with each other.

Indeed, as the findings demonstrate, human well-being and inclusion at work are, for instance, as important as ecology when it comes to making a sustainable film. One action doesn't work without the other, and a film set that recycles its waste but doesn't protect its workers is not a sustainable film set.

Furthermore, as the theoretical framework and the findings shows, green production plays a key role when it comes to sustainability. The most efficient way to implement it,

is to hire an eco-manager, or a sustainability adviser, that will collect data and make the necessary calculations in order to advise sustainable practices that could be implemented. Indeed, in order to implement sustainable behaviors, a full-time worker is needed because the key to sustainability is planning.

Those practical actions are a necessity. First of all, they decrease the generated waste and carbon emissions significantly. Moreover, they allow habits and mentalities to change over the years, which is a necessity in order to create deeper changes in the future. Those deeper changes could be to reflect on questions such as the importance of art versus sustainability, or the moral responsibility of the writers. Reflections such as the importance of flights to transport workers, or the ethics behind tax rebates, will only be possible if mentalities and some work cultures are changed. An eco-manager's ultimate goal is to assure that people think of the environment when making decisions.

Mentalities also need to change because all of the sustainable efforts can't only be the eco-manager's responsibility. Indeed, if those ethical concerns are only thought about by one person, then they won't be as efficient, especially because the eco-manager could lose interest in his fight. As the findings show, this work can be extremely draining and stressful, seeing as personal values are at stake. The question that some of them might be asking in the end could be: what is the point of trying to establish sustainable practices in a work environment that doesn't take them seriously? Then, all of the sustainable efforts could be lost. That is the reason why changing mentalities is one of the key efforts that must be made in order to have more sustainable institutions and companies.

It is also important to think about content when mentioning sustainability in movies. As we previously said, writers have a moral responsibility, because our common cultural imagery should be changed. As the findings shows, even if sustainability is a notion that is very important nowadays in society's debates, it seems that movies still perpetuate the same ideals; that it is normal to take the plane multiple times a year to go on vacations, for instance. Those ideals could be diversified, if the content that we

consume is diversified as well. To allow this diversity, we have to make sure that the funding system of cinema is protected and allows every project to see the light of the day, even low-budget ones. Content can also be harmful towards communities, especially when the content in question perpetuates hazardous stereotypes.

It is of course important to precise that all movies should not have, as a main goal, to promote sustainability: then the whole concept of creation and diversity of content would collapse. However, if more attention was paid to sustainability even in a few movies, then diversity of content would improve compared to how it is today.

One of the key elements of this thesis is the idea that education and research is of prime importance. To start with, as we already mentioned, sustainability cannot be implemented through practical habits without research (calculation and data). Then, education is significant in implementing sustainable behaviors in the movie industry, because it helps to raise awareness and to create new work habits among graduate students. Finally, education creates a virtuous circle since it leads to research, and new research on many aspects of the movie industry are needed because we lack practical data in order to improve our sustainable habits.

5. 3 Limitations and future research suggestions

Lastly, this section aims to discuss the potential limitations of this thesis, and suggest future research topics.

One of the limitations of this study is the limited number of primary data sources. This means that discussions and findings were made according to a few professionals in the sector.

Furthermore, this study aimed at discussing a concept, sustainability, regarding films. Those two concepts are very broad and can raise an infinite number of other chapters

and subchapters. Indeed, those topics could have been reflected upon according to even more aspects than this thesis already does. That is why this thesis does not aim to give a complete guide of sustainable filming. Other research can supplement some details of this thesis in order to have more data on some very particular subjects.

Finally, some future research could be written on some more precise example of sustainable content, and its impact; or, when it comes to content, a more precise reflection on the value of art when it comes to pollution.
Moreover, some more precise data is needed when it comes to the impact of the diffusion phase on the environment. A paper researching this aspect could be very useful for a better understanding of this subject.

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