



GEM – Expert Events Season 3 – Summaries & Transcripts

Event Series: GEM Green Screen International Lecture



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GEM – Expert Events Season 3

Event Series: GEM Green Screen International lecture

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Introduction

Creative Pathways to Sustainability

Within the framework of the GEM project, five expert event series on the topic of sustainable media production are planned per season starting in spring 2023 and ending in spring 2025.

The expert events want to create room for open live exchange between stakeholders from sciences and media students by concepting and implementing interdisciplinary panels. This will improve the openness to interdisciplinary discourse and help to develop students to take an external perspective on their profession.

With this event series GEM wants to empower students and teachers to make green changes in their institutions by providing knowledge resources and tools. Furthermore, GEM wants to strengthen self-reflection about the sustainability of media professions by promoting dialogue and creative collaboration with science.

All online sessions are recorded in order to create sustainable teaching material for teachers and students of Green Education in Media. For enhanced accessibility, subtitles are provided during the live session.

In the third season (Summer 2024), curated by Kirsi Karimäki and Tuomo Joronen, Tampere University of Applied Sciences, Finland and Prof. Dr. Björn Stockleben from Filmuniversität Babelsberg KONRAD WOLF, the focus is on sustainable film production.

Event 1 / Season 3

Perspectives on Environmental Impacts

Date/ Time: 05.03.2024 | 15:30 – 17:00

This meeting marks the opening of a next season of events dedicated to Perspectives on Environmental Impacts. In the 3rd season (Spring 2024), curated by Kirsi Karimäki and Tuomo Joronen, Tampere University of Applied Sciences, Finland, will focus on promoting environmental awareness and sustainable practices in education and media production.

The Erasmus+ project GEM will be introduced and an international overview of green production and policy-relevant issues will be presented.

The guests of the meeting are:

Lotta Toivonen, a specialist in Biodiversity and Everyday Life at the Finnish Innovation Fund, Sitra. She will be discussing the environmental impact of digitalization, focusing on how the ICT sector affects ecological sustainability and what solutions can be implemented to reduce its environmental footprint.

Juha Suonpää, an Adjunct Professor at Tampere University of Applied Sciences. He will be presenting on his documentary Lynx Man, offering a unique perspective on wildlife filmmaking from the lynxes' point of view and discussing the role of media in promoting empathy and awareness for conservation.

The conversation will center around the intersections of technology, sustainability, and media, exploring how digitalization can both positively and negatively impact the environment, as well as how creative approaches to media can inspire change in public attitudes towards nature and biodiversity conservation.

Speakers:

- Environmental Impact of Digitalization – Lotta Toivonen, specialist of Biodiversity and everyday life in the Finnish Innovation Fund, Sitra

- Lynxes' perspective documented – Juha Suonpää, Adjunct Professor in Tampere University of Applied Sciences

Curator and Moderator:

- Kirsi Karimäki, Tampere University of Applied Sciences, Finland
- Tuomo Joronen, Tampere University of Applied Sciences, Finland

Summary of the 1st Event / Season 3

The lecture, part of the Green Education in Media (GEM) Erasmus project, hosted by Kirsi Karimäki and Tuomo Joronen from TAMK, focused on promoting environmental awareness and sustainable practices in media education and production. The GEM project is an EU-funded initiative led by the Film University Babelsberg, with participation from universities in several countries, including Germany, Greece, Finland, Croatia, Malta, and Poland. The project's main goals involve exploring alternative learning spaces, developing sustainable media production processes, storytelling related to climate change, and creating a comprehensive environmental media curriculum.

In the first presentation, Lotta Toivonen, a specialist from the Finnish Innovation Fund Sitra, addressed the environmental impacts of digitalization. She began by discussing the global sustainability crisis, which involves interconnected issues such as nature loss, climate change, and overconsumption of resources. She emphasized that while solutions like renewable energy and digital technologies exist, they must be implemented carefully to avoid creating new problems. Toivonen focused on the role of digitalization, pointing out that it can either provide solutions to sustainability challenges or exacerbate environmental damage by increasing energy and resource consumption.

Toivonen discussed how the ICT sector, despite its contributions to sustainability through tools like digital platforms for the circular economy, also consumes significant energy and materials. The ICT sector currently accounts for 4-10% of the world's electricity consumption, a figure that could rise to 20% by 2030. She noted that while the sector has made strides in improving energy efficiency, increasing data usage and equipment production are offsetting these gains. Toivonen highlighted e-waste as a pressing issue, noting that only 17% of global e-waste is properly recycled, and the production of digital devices requires large amounts of scarce raw materials.

A critical concept in her presentation was "green coding," an approach to developing software that minimizes energy consumption. Toivonen stressed that designers of digital services should prioritize energy efficiency and data minimization, particularly in the face of growing digital consumption. She also introduced the concept of the "biodiversity footprint," which measures the impact of human activities on ecosystems. Finland is a leader in developing this footprint calculation, which complements the carbon footprint by taking into account other environmental factors such as pollution, land use, and resource exploitation.

In the second presentation, filmmaker Juha Suonpää discussed his documentary *Lynx Man*, which follows the life of a man deeply connected with lynxes in Finland. Suonpää's

work challenges traditional wildlife documentaries by embracing the unpredictability of nature and using low-resolution, trail camera footage to capture the lynxes. He argued that traditional, high-definition wildlife films often fail to inspire real emotional connections with nature, suggesting that a more organic and less scripted approach can create a deeper impact.

Suonpää explained how his film departs from the typical National Geographic-style documentaries, allowing nature to dictate the narrative rather than imposing a human perspective. He noted that throughout the filming process, he never directly saw the lynxes he was documenting but developed a profound connection with them through the footage captured by the trail cameras. This unique approach, he argued, reflects a more authentic relationship between humans and nature, one that does not involve chasing or controlling wildlife.

The impact of *Lynx Man* has been significant, contributing to the halting of lynx hunting in Finland. Suonpää's film helped to raise awareness of lynxes' critical role in maintaining ecological balance, particularly in controlling invasive species. He stressed that art, through films like his, plays an essential role in shifting mindsets and promoting empathy towards nature. By fostering a deeper emotional connection with wildlife, Suonpää believes that films can inspire real change in public attitudes and policies related to conservation.

The lecture provided a comprehensive look at how media and digital technologies can either contribute to or mitigate environmental challenges. Toivonen's presentation highlighted the importance of addressing the growing environmental footprint of the ICT sector, while Suonpää's documentary work demonstrated the potential of art to inspire societal change. Both presentations underscored the need for innovative approaches and interdisciplinary collaboration to address the urgent global sustainability crisis.

Transcript of the 1st Event / Season 3

00:00:00 Tuomo Joronen

I guess then everything is OK.

00:00:07 Kirsi Karimäki

Hey and welcome all to Green Screen International Lecture. This lecture is part of Green Education in Media Erasmus Project and my name is Kirsi Karimäki

00:00:22 Tuomo Joronen

My name is Tuomo Joronen

00:00:24 Kirsi Karimäki

And we are both from TAMK.

00:00:27 Tuomo Joronen

GEM - Green Education in Media is a EU Project which is led by the Film University of Babelsberg, Konrad Wolf and by our splendid Björn Stockleben and project has seven countries and several Universities incorporated from Germany, Greece, Finland, Croatia,

Malta and Poland. The topics will dealing with the project are environmental awareness, supporting digital and green capabilities, and new sustainable curricula and courses.

00:01:08 Kirsi Karimäki

Yeah. And here you can see the Packages, the Work Packages that we are working with on GEM. In Work Package 2 alternative learning spaces, our research question is: *how can we embrace nature as a context of learning?* And in right hand side you can see the picture of our latest camp in Germany where we tested this kind of classroom set up. Work Packets 3 is about environmental impact of media design and production and there we want to know *how can we make our own production processes sustainable.* The Work Packets 4 is about stories of environmental impact and climate change. *How can our contribution make difference to society?* - That we want to know. And then in the end we put everything together and we want to build an environmental media curriculum.

00:02:14 Tuomo Joronen

And today we have these two lectures. First one, the lectures will be roughly 45 minutes. We have about the environmental impact of the digitalization from specialist Lotta Toivonen. She's from the Finnish innovation Fund Sitra. And the second one is a story of documentary called Links Man which is directed by you has one path and I think you has film has a nice connection to this work but it's for where there's an impact on Finnish society has already taken some place but I personally think that these are very good examples of two very different takes on this topic. I'm actually very thrilled to see these very two different perspectives into the same context or the same topic. And here are the partners that are part of this project and here are the legislative content for this thing and I think with no further I do I think we can give the thoughts to lot.

00:03:51 Lotta Toivonen

Thanks, I start sharing my screen. Do you say this now in presentation mode?

00:04:21 Tuomo Joronen

Yes, we do.

00:04:23 Lotta Toivonen

Good

00:04:24 Tuomo Joronen

Oh no, not in presentation mode. Sorry.

00:04:28 Lotta Toivonen

OK. Then I think I try to share it again. Let's see. OK, how about now?

00:04:54 Tuomo Joronen

Now it's working.

00:04:56 Lotta Toivonen

OK, good. Yeah. And well, this takes a bit over 30 minutes, maybe 35 or something, but I guess we have time to discuss afterwards. So my name is Lotta Toivonen and then I work as a specialist in the Finnish Innovation Fund Sitra in a project named Nature and Daily

Life Project and this project is the kind of that our purpose is to inspire and support Finns to change their lifestyles to be more sustainable.

Today I'm going to talk about the inverter impacts of digitalization and I need to say that right now I'm not working that deeply with this topic as I used to do. But anyway this is this is still presenting our work and this in our project we have many kind of projects ongoing in our team and I need to mention that one of this project is Med Crecent which is which we do together with TAMK. I guess it maybe that some of you know that. I worked in Sitra now for seven years before my current project. I worked here in, among others, in Circular Economic Project and then as said, with sustainable digitalisation and I have a masters of thesis in environmental sciences. So today I'm not going to talk from the technical perspective or as an IT engineer would speak. So I will rather approach the topic more from the perspective of ecological sustainability. But I will of course touch a little bit also the technical issues. I've been working more closely with this detail now for the past five years, and during this time I've been involved in creating Finland first climate and environmental strategy for ICT sector, which was published in 2021. And I've also been involved in several green ICT projects where we have tackled this, this digitalisation, both from the positive but also from negative environmental impacts. And today I'm going to, well, this is the topic I got, so environmental impacts of digitalisation. So today I'm going to talk about that and then I'm just thinking how, yeah, now it changed, the slide changed, yes. But so first however, a few words about the Finnish of Innovation Fund Sitra. So Sitra is quite a special organization in the world and Sitra was established in 1967 and it was a gift from Parliament to a 50 year old independent Finland and Sitra was given a task with building tomorrow successful Finland. Today Sitra is independent future House of for Finns and I could say that it's a kind of think and do tank which works in many roles ranging from visionary to developer and from experimenter to financier. Sitra's vision is implemented by three themes and 100 of projects and these three themes are fair data economy democracy and participation and then sustainable solutions where I'm working. Sitra's operation funded by returns on endowment capital and capital investments. In this sustainable solution we promote the transition towards a good life within the limits of the carrying capacity of nature. In practice this means that we provide tools to combat natural loss, tighten ambitious climate policy, boost the circular economy and communicate ways to live a sustainment everyday life. And we have two projects in this team. My current one is this nature and daily level project, but then we have the other one which is the nature and the economic project and they concentrate more on the direction of political decision makers and businesses while my project is focusing on the citizen level. And in addition to this we have also another team who is responsible for organising the annual World Circle Economy Forum. Today I'm going to tackle 4 sections and that was actually gives the hope that I cover all this. So let's see what is coming. But first I want to take a look at the ecological sustainability and then I would like to answer to the question, is ICTA part of the solution, the challenge of both? And then let's see the question, what kind of digital services and services are we using and also what kind of services are available? And then in the end of the presentation, I talk shortly about the biodiversity footprint, which is kind of coming in the field of sustainability or ecological sustainability. Since today we are talking about environmental impacts, I want to start by talking about the big picture of ecological sustainability and I want to emphasis that our well-being of nature is the foundation of our life here on Earth. So currently our planet is facing a global sustainable crisis and the dimensions of that are nature loss, climate crisis and depletion of natural resources. All these dimensions are interconnected, which means that as the overconsumption of natural resources increases, so does the loss of

nature. And for example, as the loss of nature progresses, the climate crisis will worsen and so on. And these are also things that challenge the life of humanity on Earth and we need to be able to respond them all at the same time. We already have a lot of information on root causes and we have a solutions that are widely available, but what still needs work is to acknowledge that we actually are in a hurry to make a change. As far as global warming is concerned, this is what it looks like right now. We have agreed that we will try to limit the temperature rise as close as possible to 1.5°. Current commitments by countries are sufficient to limit heating to 2.7°. But at the moment we have already warmed the planet about 1.3° compared to the pre industrial times and therefore current measures are not enough and we need more work and we need to do more to stop global warming. And then let's take a look at the state of biodiversity and resource consumption. So on the left there you can see the Living Planet Index. And this index looks at nearly 32,000 population of 5200 vertebrates animal species around the globe and according to this Living Planet 2022 report, monitored wildlife population saw an average decline of 69% between 1970 and 2018. This suggests that natural ecosystems are degrading at the rate and predicted in human history. And this significant drop in the value of this Living Planet Index is a sign of the predicament of nature. And then the picture on the right shows the ecological footprint per person in different countries and to live within these means that our planet humanities, ecology footprint would have to be it should have to be lower than our planet's bio capacity which is currently about 1.6 global hectares per person. So if a country's ecological footprint is 6.4 global hectares per person, its residents demand on nature is 4 times more than what's available on this planet proportion. And we can see that almost all of the countries in the north, they have bigger, bigger footprint. And as we know, we overuse natural resources and use network nature as landfill. So globally we consume at the moment 1.6 Earths and we need in Finland there are actually 3.8 Earths to meet the consumption. So there's something we need to do quickly. Fortunately, we already have also many tools for solving this sustainable crisis, such as the circular economy, renewable energy solutions and technology and digital solutions. And like the aspect of the sustainable prices, these are also closely linked and mutually supportive, because many such tools need natural resources and energy. But since we are in a hurry to solve the sustainable prices, we must also make sure that these tools are used correctly and that they really solve the problems and do not create new ones by promoting unnecessary consumption. As such, and this is what I'm talking about today, so that while digital solution can help to solve the global sustainment crisis, digital technology must be designed and implemented in such a way that it concerns as few resources as possible and that we also use it for things that need to be resolved. And in short, we must minimize the environmental footprint and maximize the handprint. So what is handprint? I guess most of you, at least most of you know the carbon footprint, but what is the handprint? And what is the difference between footprint and handprint? So in short, the carbon footprint, the carbon or environmental footprint. We can also talk about the inland footprint that focuses on negative impacts now, while the carbon handprint highlights positive impacts in the future. So carbon footprint refers to carbon dioxide emissions caused by human activities. And in most cases, the carbon footprint is reported as carbon dioxide equivalence, which takes into account not only carbon dioxide but also other significant greenhouse gas emissions. Instead, carbon handprint indicates the positive climate impacts of product or services. And the positive carbon footprint results from the fact that a solution of a higher company reduces the carbon print of someone else. And typically, it's a customer. And these actions taken to reduce the company's own carbon footprint, they don't increase the company's carbon handprint. So

that's good to remember and a simple example of Carbon Handbridge service is for example of virtual meeting application that we use when we remote work and which also allows us to use and meet each other from home to the other side of the world. And like we do now and then thanks to the virtual applications travels is included and emissions are reduced and the Carbon Handbridge alone is not enough. So if we don't to take access to minimize harmful environment impacts. And I want to highlight that the target should always be to focus on both of them and not to think that our handprint is already so big that we don't need to care about footprint. As I have noticed that it seems to be the way of thinking in ICT sector too often that they think that the handprint of ICT is so big that that there's no reason to do that much changing for the footprint. OK, so then I move to the other, the second section, which is the question is digitalization a part of the solution? The challenge of both and I need to say already now that it's actually too early to say, but they are warning signs that the direction will not be sufficient, will be not sustainably if we digitize society without thinking about why we actually digitize things. So let's take a look at closer look at this section. So however, digitalization has two kind of role in relation to the environment. On one hand, digitalization provides solutions that can have either direct or indirect environmental benefits. On other hand it increases, it's increased use, increases the constant some of energy and materials because as the amount of data increases more and more energy is spent not only on equipment but also on transmission of data in telecommunication networks and on the processing a storage of data in the data centers and so on. So in addition both natural resources and energy are required to manufacture various digital devices and that needed infrastructure. We already have many good digital solutions that can help us to solve the sustainability prices and they are the kind of solutions that increased us as mentioned the handprint. These kind of solutions are among other sustainable mobility services which helped reduce transportation emissions, which are actually quite hard to reduce. And then we have video conference and teleworking technology which helps us to reduce transportation emissions. We have environment monitoring technology which allows better monitoring of the state of the environment and helps, for example, monitor air quality, make better weather forecasts and anticipate storm and floods. And then detailed solutions help also to share information about sustainable lifestyles and good practices quickly and effectively between different people. And then they help to accelerate the circle economy by enabling the sharing and utilization of data related to product life cycle. And this kind of data can be related to traceability of materials. It can be related to material products, material contents or even to the use phase of some products. And these digital solutions can also help to enhance the use and recycling of materials and energy. And in addition, it helps to extend the life of products by means of sharing platforms which facilitate the sharing, renting and reuse of products. So anyway, it's good to keep in mind that digital economy is not immaterial, although it can often look like that. Digital devices use the same critical raw materials that are also needed for the print transition. As stated in the previous slide, the ICT uses a lot of energy and materials, but it also can take us towards a carbon neutral society in highlight it can. The climate impacts of the use phase of digital content are in many places greater than the climate impact of digital equipment manufacturing and we can see that if we look at the history, we can see that the ICT sector has actually been actually done a really good job for a long time, especially to improve the energy efficiency of hardware but it doesn't seem to be enough as some ICT researchers and experts say that as the ICT industry achieves energy efficiency improvements, increasing capacity and use will actually eat the immediate gains. However, the measurement of reporting of the impacts of the use phase of digital contest still needs to

be developed because in light of current knowledge, it's difficult for users to estimate the energy consumption of data use and its impact on the environment. And there are many reasons, but one reason is that the value chains in ICT sector are disputed around the globe and across the interest boundaries. So it's that's why hard. And also there is no, not yet any standardized or common method for measuring and reporting these impacts of digital services. If we take a closer look at how much energy the ICT said the currently consumers studies show that it accounts for 4-10% of the world's electricity consumption. And according to some estimates, the ICT sector share of the world's electricity consumption could increase to as much as 20% by 2030. It's good to know this that now when we now we talk about the ICT sector's electric consumption, but it's only a part of all the electric consumption generated from the use of digital technology, because digital tools are used everywhere. When we look at the emissions, the global emissions generated in the ICT sector are between 3-5% and these emissions are relatively moderate despite the sector's high energy consumption. And this is because the sector uses a lot of green electricity and for this reason the ICT industry likes to talk mainly about emissions and not about the energy consumption and anyway I see that my opinion is that a more accurate peaks of the use of resources can be obtained only when we look at both and especially we look at the energy consumption. A good example of this skyrocketing growth in electric consumption can be seen when for example looking at Google. So these pictures from the Google's sustainability report latest sustainability report and it says that Google's electricity consumption has increased by more than 500% in the latest 10 years and this is equivalent to more than 1/4 of all electric consumption in Finland in 2022. Google reports that all its electricity is from renewables. But in practice Google has still operates in a data centers that use fossil generated electricity. Google can report 100% because they compensate the emissions and buy green electric from the Creek which equals they consumption. But of course they also have their own on site production and wind energy. I want to emphasis that it's anyway good that Google and other IT companies produce and use green electricity. But sometimes I noticed that people don't understand it's not it's wrong for it to justify a huge increase in electric consumption at the time when more than 60% of all of the world's electric consumption is still produced with fossil fuels. So the situation is that if ICT is using a lot of electric green electricity, there are still sectors that have to use fossil fuels, fossil energy and as far as we don't have enough green electric in the world. Besides it seems that we are constantly developing new electricity hungry solutions. So currently earlier with the researchers talked about the blockchains of virtual crypto currencies, but now the researchers are concerned about the electricity consumption of AI. Next let's take a look at the E-Waste. So the world is constantly producing new digital and electronic devices for which virtual natural resources are needed and at the same time huge amount of equipment are being phased out. Electronic waste is the fastest growing type of waste in the bird at the moment and the amount of E-Waste is increasing by about 7% per year. Currently this amount of E-Waste produced per year is actually in the world is actually the same amount it equals the same weight of the Great Wall of China and only 17% of was E-Waste is probably recycled. In Finland we do better, but not enough. So our recycling percent is around 45-60 of all E-Waste. Many digital devices are quite complex and they contain small amounts of dozens of different metals. Smartphone is a good example of such a device. So smartphone has four main components, screen, frame, electronics and battery. Almost half of these, yeah, and it contains can contain up to 80 different raw materials. And almost half of these different raw materials are metals like Indium, this protein, lithium, cobalt and so on. And these metals are needed, among

others for creating colors, for touchscreens, for Fire Protection magnets and batteries. And many of these metals are only in very small quantities on the phone and often come in various features of materials. And this complicates the recycling and also and especially the reuse of materials. With this slide, I have highlighted five key challenges related to the use of natural resources in the ICT. One key challenge is increasing consumption that new equipment and new equipment models become available continuously and a service lifespan is quite short. In 2022, as many as 1.4 billion smartphones were sold worldwide, So the total amount of raw materials and energy needed to make these phones is very large. Another challenge is the short lifespan of devices, which is only about two to three years for smartphones at the moment. And this is because in addition to people's consumption habits, the devices are not currently designed to be long lasting, repairable or upgradable. But it's good that there will be change in the EU according based on the legislation that is happening right now. The challenge is that the equipment doesn't end up in the proper recycling place, but often remains in people's closet at homes. And even if the equipment ends up in recycling, not all raw materials can unfortunately currently be recycling back for reuse for economic reasons. However, recycling is promoted by the fact that many other sectors will also be competing for this same materials now and in futures. These same methods will also be needed for wind and solar plants and also for electric cars and their batteries. And then let's move on to the Section 3. Then talk about what kind of digital services are we using and what kind of services are currently available and actually how could we do better? First, a bit about the data usage. So both consumers and industry are increasingly taking advantage of digital services that use data. And today less than 80% of world's Internet traffic is for downloading and broadcasting videos. And currently about 80% of global Internet traffic is consumer use and the remaining 20% is caused by other reasons such as business use, emails and so on. After videos. The second largest source of data on Internet is actually various web services like traditional web browsing, news sites and Information Services. And however, the amount of actual information on the Internet sites has it hasn't increased significantly, but the website layout and advertisements have increased the content correspondingly increasing amounts of data need infrastructure and terminate wind. So in turn it also has an impact on the use of natural resources. Currently companies and organisations are developing a variety of digital services at an accelerate rate. Today the design of digital services is mainly unfortunately mainly driven by cost, speed and ease, but not for example by energy consumption data minimization. We have even better and better mobile networks which our phones have limited data per month at least in Finland. The service are planned to be visually stunning and the energy or data consumption of the service is not any commonly used criteria. Since the in use energy consumption is not an objective, insufficient attention is paid at the design phase to how much data and those energy the service use. Another reason for the increase in the use of data is related to of course to the increased use of digital services and to the increased number of users. The continuous increase of data is very well visible in this picture and like it this shows like how we create things. In this picture we show statistics on the development of the website over the past 10 or more than 10 years. You can see that the typical size of pages implemented for desktops has increased more than 430% and that of mobile devices by more than 1000 or 400%. Earlier mobile phone earlier pages were lighter for the mobile phones as currently they are equal. And this picture shows that the size of content offered specially for mobile devices has grown clearly more strongly and that on average mobile devices already served with content which are as heavy as heavy as for computers, even though the devices and screen are essentially

smaller. However, the size of the website and digital services does matter. So if you consider e-commerce, the light to the pages will load faster and those increased sales and this is the reason why some online stores have already paid attention to the size of their pages and speed of their services. And it's so simple that the faster the pages the more business. In 2022 other university published an analysis of the front pages of 1000 popular online services and the results show that there are actually more than 10 for differences between different web pages. And one year later. Last spring actually all the university published an open service test that lets you test the size of the web pages. There are also some other similar tools available but this is done in all the university, university and it also gives you an analysis of the actions you can do to decrease the size of the pages and I encourage actually there's a link in the page so and I'm sure you get this presentation after afterwards. So I encourage you to visit the service and I can say that I used this test last time when I wanted to test the website of different amusement parks and I also wrote an article. There's a link below in the slide, but unfortunately it's only finished. So my small study showed that the biggest front page of apps Amusement park was almost 50 megabytes. So every time you allow a lot of the page it uses 50 megabytes of data, which is really heavy. And the reason for my leader study actually started from the case that I was in our summer courtesan and tried to buy a ticket from my summer. Got it to 1 amusement park and it didn't happen. I couldn't do it. So when I saw this test, I added that, OK, now there's a chance to test if one reason for this this thing was that the sizes are very big and it might be so. Fortunately solutions and better developments are also on the horizon. So spring coding is one thing which has attracted strong interest in software in the train Finland and I think also somewhere else but at least during last year's that has been very common in Finland. And this spring coding means methods that help to minimize the energy consumption of software and the factors that affect the equation include cloud capacity optimization, software language selection, file size, format and data processing. There is a picture on the right about the book that was written by Finnish coding expert Janne Kalliola and that's about green code and I think it's a good reading if you're interested in that. And it's also available both in Finnish and English. Also quote from Finland organizational has established a carbon neutrality label for software industry and I think it if it's not, it's at least among the first ones in the world, if not the first one in the world. So in a nutshell, you can say that less is more. So we already have a number of good digital solutions that can help solve the sustainable prices and you kind of use resources better. However, we must ensure that they are designed also so that they are resource efficient and also of course that they are used smartly. And still I want to present a couple of more slides on why should I be interested in ecological, sustainable digital design. First, these digital solutions help make operations more efficient as I had said, reduce the use of resource and then promote also a circle economy. And we can talk about we can kind of say it's hand print. 2nd - ecologically sustainable digital solutions can provide post cost and in one of benefits, 3rd - if you take it now you will still have the advantage of being a pioneer because I'm sure that increased awareness digital sustainably will only increase and the demand of sustainable digital solutions will be much stronger in future. Also ecological sustainable and will remain one of the priorities of national and EU legislation. And then I'm sure that at some point also these IT figures will be included in the key corporate reports and with the responsibility reporting. So I'm sure that will come at someday, sooner or later. Today they are already good guides available on the Internet on how to design more sustainable digital services. And if I kind of try to summarize my own instructions from perspective for environmental scientists. So they might come this way, including use energy consumption

in the design criteria for digital services, especially if you are purchasing these services. So instead of purchase cost, set operational costs as criteria, optimize and minimize data usage taking into account in the design of the brain interface. At least the following like the effectiveness of navigation, a clear and minimal list layout past operation of the service, relevance of all features of the services. Meaning that no unnecessary staff. And I actually last week noticed that netum.fi which is 1 software company, they had published quite good green design guide and unfortunately it's only at least so far available only in Finnish. But let's see if it's coming also in English and I'm sure there will be also some others in English for sure. And then two other points, maximize the lifetime or digital services. Which means that also the upgrade ability should be taken into account so that there are upgrades available long enough. And of course be interested in this subject and increase your awareness and develop your skills. I'm not going to cover this slide more, but I can just want to say that there's the TIEKE Finnish Information Society Development Centre in Finland who has and is running many green ICT projects and they have created an open green ICT information portal. So you can access that through that link. And there's also content in English so if you're interested you can visit there. Then I'm heading to the final section and now changing to the other kind of topic than digital and this was like Kirsi asked me to add this like what's coming next and actually this is, this is something what I'm currently working on. So this ecological size, this biodiversity footprint. So now everybody knows climate prices and carbon footprint I think and it's finally known. So what's coming next. So we are going to talk about the biodiversity and kind of take a bigger picture, do this situation. This means that the climate will be there, but it's only one driver, so I need some. In addition to the carbon footprint, biodiversity footprint is being developed and it takes into account not link climate change, but also for other drivers such as pollution, land use changes, invasive species, and direct exploitation of natural resources. This methodology is still under development, but it's already possible for example, the calculate footprint of organisations, companies and even to individuals. And at the moment the best, methods capture already three to five out of these five presses or drivers that are listed in the slide to one and one or two partially. But this method is developing all the time. The unit of the footprint will be the biodiversity equivalent. It indicates the fraction of the species of the world that are in risk of going extinct globally. And this index works in a similar way as CO2 equivalent, meaning that it integrates complex information under a single indicator, the footprint allows the international comparison of biodiversity, footprint between as I set different organization, individuals and so on. And Finland is doing a pioneering work and that is done in the University of Jyväskylä and they play also a key role in the development of this footprint. Currently they are just actually creating a research to us to Sitra on the footprint of an average Finn and how to reduce in. And so this study will be published in May and if you're interested in hearing about this among the first ones you should follow Sitra's Social Media web page and there's also a link in the below in the slide where you can get more information about this content. But I can say that Finland is doing a good work when developing this method but also of course there are also work done in other side of the world. OK, so this was my actually my presentation today. I hope you had time to hear and I need you to hear and now if you like I can try I can try to answer the question or if I'm not able to answer right now so then I try to find out the answer later.

00:42:56 Tuomo Joronen

OK. Thank you Lotta.

00:42:58 Lotta Toivonen

Thank you.

00:43:04 Tuomo Joronen

So are there some questions? If not, I at least I have a couple or at least one. My one question would be there was this. The green design software saves from 30-90% of energy and I guess that was about like just making that green code, but how much or do you know like some particular software, how are doing that already?

00:43:39 Lotta Toivonen

Yeah, well CJI is actually the figure, some of the figures are coming from them and I need to say that this is actually one challenge in in the world that we don't have exact numbers. So that's those are just estimates and those companies who are doing the work and Green coding and those they say that there's huge potential but for example in Sitra we tried we kind of have a dialogue with EU and political decision makers. So I have been asked if I could give some figures and unfortunately I don't have and I have tried to hunt those figures. So I have said to the experts as that please hurry up with the figures because and according to the all the understanding they should be big and aa I said those figures are related to green coding but well green coding can also contain it depends on how you look at that what all things it contains.

00:44:41 Kirsi Karimäki

Thank you. And then there was a question from Marta.

00:44:46 Marta Materska - Samek

yes, I have a question about the biodiversity because it's not directly related to the energy savings and the digital technology. However, you showed that there is some correlation. Is there any models or any way, methods, methodology how to assess the impact of the energy savings and energy on the biodiversity?

00:45:11 Lotta Toivonen

Yes, well like as I told Sitra now doing a research on the average Finn and it contains also the energy consumption. So, it's kind of the number we will get out and publish later. It contains energy consumption. So, it is there. But yeah, how do I say that will become so kind of like now we have the carbon footprint, in future we have the biodiversity footprint and it will cover the energy. But of course, I still have to say that there are some constraints still which will be developed. But for example, it the index looks at the area meters so like mining I have said that how do it that it's not yet perfect like taking into account the mass of for example minerals. What I've understood so but it's coming.

00:46:19 Kirsi Karimäki

OK. Thank you. Thank you. And let's take last question from Björn.

00:46:25 Björn Stockleben

Yeah. Thanks for the presentation. I was wondering if there's anything that I can do as a consumer to choose a service that's less energy consuming. Because there's if you look for example at To Do List apps, there's a dozen of them and even a couple of good ones and if

I was able to choose the one then that saves the most energy because it seems to really have a scaling effect that would be very helpful. So, are there any databases?

00:47:02 Lotta Toivonen

Well, as I said the measuring this is very difficult, but there are a couple of things which we already now can say. One is actually that used a fixed network instead of mobile network always when you have the opportunity for that maybe it's, I know that outside Finland people use more of this fixed network, but in Finland we use a lot of mobile, but it's actually very energy inefficient compared to the fixed network. So that's one. And then of course try to think when the video gives you some added value compared to the other kind of messages because it's very data intensive and then the smaller screen the better and the smaller resolution the better. So for example 80 the big screens with HD picture, they are very energy consuming compared to the Forex HD picture and smaller screens. So this shortly list, but yeah, there are some actions, but unfortunately it's hard to measure and there are meters that can measure that, but I said there isn't any standardized way to measure that. So the figures also changed quite a lot.

00:48:24 Björn Stockleben

OK. Thanks.

00:48:25 Kirsi Karimäki

Thank you Lotta for preparing this really nice presentation for us and giving this presentation. I guess we would have a lot of questions, but we have also another presentation today. So we need to move on, but I hope that we also collaborate later together and follow up a broad sect maybe, OK.

00:48:54 Tuomo Joronen

Thank you. Thank you once more Lotta. And then we welcome Juha. So Juha will talk about the documentary film Lynx Man.

00:49:12 Juha Suonpää

Thank you Tuomo, Thank you Lotta for the info package. By the way, Tuomo can you allow me to share my screen?

00:49:24 Tuomo Joronen

OK, just a moment. Just a moment.

00:49:25 Juha Suonpää

Thank you. You are so far here speaking and good afternoon to everybody and welcome aboard. I have a background as a Finn art photographer, but I'm also filmmaker, teacher among others, horse farmer and so on. But that's another story. I have many stories to carry with you. But now today I will share a story with pig cats. What we do have here in Finland. Sheer sound? Yes. OK. Good luck for us. Would like to OK something like that. Maybe you'll see my screen.

00:50:18 Tuomo Joronen

Yes, yes, we can see.

00:50:20 Juha Suonpää

OK, super. OK. Today I will continue from Lotta's thoughts because we will have a lot of information and technical solutions to be honest. But what we do need is to wake up and change our mindsets. So for that we need art. Art can show us what we didn't know yet. Art can and art do need to surprise us. So as a working title I put the wildlife film 2.0 means that is there another way to go forward with the documentary films about nature. The answer is I don't know, but we should in many levels. The consumption is based on visuals in general levels, advertising, videos, whatever. I mean in from television, from social media we see polar bears and beautiful other kind of animals but I think we have seen them enough. This really doesn't change our heart. It's I mean it's somehow generates maybe even boredom kind of not seeing any more nature because we do need to see nature but we do need to see nature from different perspective with new eyes and for that we need following Lotta smaller resolution, not only saving energy, saving climate but also changing the perspective how we see things around us. Here we have our links and without stories, without seeing anything, just saying it's a link, a white one. It triggers imagination from our side and it creates interaction between viewer and the artist. And somewhere there, you know in material space starts, things happen, change happens. Also of course information is needed. Here we see links, tracks, but they are cheating us. There are 4 links is there some other links and three kittens taking one week ago in my surroundings here in Finland. We still have a snow here, but yeah, beside the information we need the empathy. If we follow UNESCO, sustainable citizenship ideas, we need awareness. We need empathy around us. Critical thinking. Also of course working with heterogenic groups, both in wildlife, both among us humans. If you go to forest here in my surroundings in Tampere, in Lempäälä region, you can see Lynxes or other way round actually they have seen you, you didn't see them. They are looking at us. We think usually that in nature of wildlife films we are looking animals but it's other way round in real life they are smelling us, they are looking at us, gazing at us. That's the way also to know about us more, feeling the gaze from them in our back. I think that's very important it's a changing the perspective what we do need to do. Maybe here I try to show you a trailer about the film Lynx Man.

00:57:13 Juha Suonpää

So, eight years ago I met a crazy man who came to be a Lynx Man, lynx whisperer and he showed his slides in a major conservation event, very blurry, very bad quality, steals taken with trail cams, footages about Lynxes. It was a chaos. But what struck me strongly was the emotional connection which he had with the cats. And since then I was visiting his place and listening him five years trying to understand his ways of thinking. It turned out that he had a very severe accident falling down from rooftop, broken his arm totally and since then he was not anymore to continue in a traditional work. So he had a lots of time to think and he went he had a divorce he lost the job and he has challenges with mental things also. But he was able to move him back to the track with the Lynxes because he noticed that the Lynxes are hanging around close to his place and he started to put the trailer cams over the house and it turned out that they are there. The history of Lynxes in Finland is a kind of success story. 100 years ago they really were extinct totally because of the hunting. But since then after 1960s little by little Lynx's has been coming back to Finland to our forest. So Hunter was witnessing this change but he was also witnessing the change of environment as well as the drastic handling of by hunters in Finland. Even though Lynx is protected by law there is hunters were able to get limited number of killing licenses and seven years ago for example every fifth of Lynx of our Lynxes were killed by hunters. So he was witnessing this, this process. How the Lynxes

where they're vanishing also from his territory. But on the other hand in his state of mind, in his imagination, he was able to carry the idea of a Wildcat into his mindset. So in Hannah's case, and in the Lynx Man film, the story is it's not a film about Lynxes as such. It's a story about fellow traveler ship, how to share the space from with the top predator. It's a story how to let the nature come into our head and they're changing our attitudes. Basically during the filming sessions, which were many during the years I was visiting Hanno's place. And one turning point in the film process was when the male leading male lynx called Joseph P was visiting Hanno's house and basically peeing both to the to the house wall as well as to the lens of the trail camera what we see on the left hand side. So all these happened when you we were both at the same time in the at that particular time in his place and combining dreams documentary materials, small low resolution materials. Basically we were transferring the traditional idea of National Geographic style of type of film to 2.0 wildlife story narration direction. During the filming sessions the whole idea of wildlife filmmaking turned upside down. Basically the script writing was done by cats. The cameras were toys for them. They were peeing to the lenses. They were playing with the infrared cameras. The whole idea of going to the forest with the long telephoto lenses like chasing like a hunter after the big cats, that was something very different. What we were doing there, it was the cats what we're offering ideas for the film, not only me as a director and little by little the cats came very, very close to me as well. But by me I mean the camera. I also got motivated to buy more cameras and then little by little they start to smell me as well when I had installed cameras to the forest and basically if you want to communicate with the big cats you put toys into the forest like cameras because they take the interest of cats. Cats choose the moment when they are willing to come to the cameras, not us as film makers. It's more, let's say, yeah, it's more fair, to be honest. And many times also the science soundscapes were very surprising. When I came back to my home playing the from the forest, I did have immediately new audiences interested about both of the what is seen on the screen. But first of all, the sounds and those sounds what cats are talking in the forest are only able to be recorded by trail cams, what I call as forest cameras. And all these methods also by putting old Christmas decorations to the forest and letting them to come if they want. Here we see the 10 months old youngster boy lynx.

01:05:44 Tuomo Joronen

Hey Juha, I'm afraid it's somehow sharing the wrong screen.

01:05:51 Juha Suonpää

Really?

01:05:53 Tuomo Joronen

Now it's right. Now it's right.

01:05:55 Juha Suonpää

OK. Oh, sorry. How long did?

01:05:59 Tuomo Joronen

I think for quite some time, but I think we are fine now.

01:06:02 Juha Suonpää

OK, I'll continue. Sorry about that. So here we see ten months old Lynx Boy playing with the kind of Christmas decoration what I brought into the forest. So this is a new way of approaching wildlife filmmaking. You wait eight years and they will come sooner or later, simple as that. And here we see this is taking, I mean since the film was done for international distribution, I've been continuing the filmmaking of Lynxes to do a new one. And here we see what happened 2 weeks ago here in Finland. We see here 22 kittens and one of them has a very particular detail. If you look closer you'll see the right ear is bended a little bit. So what is very important with this kind of filmmaking is to see the cats as individuals, not an only as Lynxes. Like this youngster here who is taking her first in independence steps, without mother who is looking the vast world, who is stepping into her first year alone which is the most dangerous year for these guys because most of them don't survive. All these I mean individual aspect as well as anthropomorphism is very important as a language to make both narration but also construct sympathy, empathy between us and them by saying in the very beginning following UNESCO sustainable citizenship ideas, raising awareness especially empathy, it's crucial in a bigger scale also if you think about how we coexist with nature in future but also how we coexist with each other in peaceful and tolerant way, we need new ways to film. When we are thinking about facing and meeting new kind of cultures like wolves coming at the moment back to Finland to back to South Finland. Wolf is very polemic in media discussion and in general opinion both here in Finland and in Europe in general. But for these we need not only me, like the masculine voice over explaining things, we need also the voice given from their side how and how they talk to us. We need that kind of sensitivity to tackle immigration, racism, peacekeeping for us in future. Also learning from ecosystem which is I think the very simple solution for everything. If you follow the 100,000 years of field testing, what nature has done, if we mimic, if we copy these systematic elements, we understand how the balance can be carried out in future. So lynx is a great example of circular economy. How you pick up the certain prey, how you keep the balance, how you leave the leftovers for next ones and everything is circulating back to earth in the end. To meet each other, them and us in future in a peaceful way it's also a symbol how to tackle mentally the challenges. Let me show in the end a few footages from two days back. So this is very new material from camera in Hämeenlinna region. Here we see three kittens who are almost ready to start their independent life and the one of them comes close to the camera and take selfies. So I think this is kind of metaphor for us to continue that they need also privacy sometimes. But on the other hand they give us the script for the future. This is done last night. So camera sent me material and this is the male, the leading male in the territory sleeping at the front of the camera. And why he is doing that I don't know why he is not take I mean scared about the infrared light I don't know but he can choose whatever place in the forest but he chose the place at the front of the camera. So I think this is this could be called ecology of reconciliation. When we search sustainable by diversity in our mindset the something like that we need to be sensitive for in future. Artists are usually given kind of decoration role in our society, but I think at the moment it's time for artists because I said we do have technology, All we do need is to wake up and change. I'm also doing books, films and impact projects like at the moment in the gallery here in Tampere. Every week I will have an open lecture for people to come to listen the story of Lynxes. Thank you.

01:14:15 Kirsi Karimäki

Hey, thank you, Juha. It was a really nice great presentation and also the movies really big experience to see and as we have said earlier your work was one of the inspiration for

our project. Actually when we heard about that style what you are doing the film, we thought that maybe our students can do something similar and as impactful. So thank you for this nice presentations and call those trains.

01:14:53 Juha Suonpää

Thank you. I decided to keep it short.

01:14:59 Tuomo Joronen

OK And I'm not sure if there's Kirsi me and naturally Juha have you know that you have seen the documentary and know all about it more than everything and but I think like my take on the film was that I think it was because there's this inevitable randomness in the in those in that footage and then I think like that somehow that's that randomness turns into more real presentation of the nature than something that is shot on purpose. You know even though you know naturally you make composition but because you can't really you can't direct the nature then the sort of the nature as well as you were clearly showing here then the nature kind of a directs you in a way so and I think that's very interesting when once you see the see the movie.

01:16:01 Juha Suonpää

Actually if I continue here kind of answer it's that's right it's especially in the era of AI, artificial intelligence. I think these kind of aspects will come to the foreground stronger than ever if we I think the surprising element what art only can carry as well as the ethical considerations it's us what as humans we can do but we need that those inputs in new ways. I mean the National Geographic film style, what we've seen, it's great to have on a Saturday, but it didn't change things. The linear consumption continues so old ways has brought us here. We need something else. We need bad quality footages.

01:17:04 Kirsi Karimäki

You're right. And hey, there is question from Björn for comment.

01:17:10 Björn Stockleben

Yeah. Could you maybe elaborate a bit more or so about the creative process? So was it so how to put it? So yeah, how was your collaboration or the initial idea to make a so there was footage when you came to the project but there was no film or was it your idea to put more cameras and so on. But I understood that there were, there was some footage but it looked like arbitrary and that's where you how you found it as a filmmaker, is it right?

01:17:55 Juha Suonpää

Yeah, I think, yeah. We have to remember that I have never ever seen those cats put down in the film I was listening. Only handles the main protagonist stories and of course technically speaking we do need it. We do need for film one minute, but it is not only 5 second ones. So that's why we needed to put more cameras into the forest. But also, yeah, I mean in every location we have several cameras, 3 cameras, typically at least two, where you can make, I mean sequences by combining editing process those two footages and so forth. But yeah, the paradox in the this links film is that I've never seen those cats, but I really do feel that I know them. And this is, this is really, I mean hopeful to recognize that it's really possible in audio visual way to make the connection. And I think that's the fairway also that you don't chase them in the forest. You let things happen through the

cameras, through the cameras, the language happens through the camera and it's fair process and yeah, what can you say?

01:19:40 Björn Stockleben

Yeah, I really feel like you. Like it's you. You took his. His idea, his stories and was in a very responsible way. And you enhance it in a way, so you're able to make a film out of it, but you didn't like capture it and exploit it so. So you stayed true to his approach. So that is what it sounds like. And maybe that's the secret of the film, because so that it got something special and not just another wildlife movie.

01:20:15 Juha Suonpää

Yeah I do agree. It's what I realized when it's the Lynx Man has toured through the film festivals from Asia to North America to Europe and looks like personal is very universal and of course as a thin we have we are 6,000,000 only and the hand of the protagonist is even speaking very West Coast accent who sometimes even Finns we don't understand but we feel the honesty and that's what the younger generation also has been commenting when they've seen the film that it's the honest and we I mean we older people are not convincing anymore for the younger generation but honestly that lasts forever.

01:21:16 Tuomo Joronen

Hey and maybe one comment also about the fact that there has been this impact on the society as well because the as you have mentioned previously there, there are these licenses to kill the lynx but now as we are speaking they are in completely halt. So there's no, I think like there's only two licenses to kill lynx in in Finland and they have particular reasons, environmental reasons for that. But this film has also been has also contributed to the fact that now there's a complete block on killing Lynxes in Finland.

01:22:01 Juha Suonpää

Yeah and that's true and it's first time in Finland that no killing expect those two those few only and this is very unique moment but it's I mean it was the cattle was boiling years and years but the momentum came and the film was one part of the breakthrough how people were not anymore I mean officials who were allowing the killing were not able to justify ethically nor ecologically anymore the killings. I mean it's actually we have so many inventive species, raccoon, deers and what else. Yeah many. I mean if you put the camera into the forest, mostly they are invasive species in in the camera and the cat's lynxes are really keeping the balance against that. I mean conquering invasive ones. What would be the disaster for Finnish forest biodiversity. And I also I think in both ways one, one, one of us can make the change, the handle can make change the protagonist, the Lynx Man. But film can make to chains also be part of the catalyzing chains, and I think that's the work of art.

01:23:46 Tuomo Joronen

Hey, Juha this is just one very detailed question. I mean there was in that when you have those small clips at the end there was this deer that was looking kind of a young one and then there was the following clip. There was the lynx has haunted down. I think it was the same deer but was it a baby lynx? So it wasn't like a full grown because it looked like a quite small one because that to me that felt like a like a small deer was haunted down or baby deer was haunted down by a baby lynx. I don't. I don't know like.

01:24:25 Juha Suonpää

The deer you what you saw there is the deer it's very it's pretty small dock size the smaller smallest invasive deer what we do have that's why it looks like it was an adult yeah but it's but the showing this it took six years I kept six years 1 camera in the same location and then it comes. You have to be patient with these cases. And this is, I mean, one man band. You can do films, but it's only one man band you can do these things because otherwise it would have been too expensive.

01:25:14 Tuomo Joronen

Yes, I mean in that sense I we are also talking about green production here.

01:25:21 Juha Suonpää

Yeah, that's true. I mean, I'm walking in the forest every weekend and I have in my pack baggage a camera. What I can leave to the forest if I see something, if I feel something, if I hear a woodpecker sound. I know the Lynx is after me, so I put the camera there hoping for the best. Maybe in the next following six years it will be simple as that.

01:25:56 TOMMI MOILANEN

Yes. All right. Thanks for the both presenters. This were very interesting for me as I'm learning the green consulting in film and television right now and it's Nordic, Nordic course for one year. So there's a lot of good examples and terms especially the this positive handprint in counting the carbon. It was very exciting for me as a term. But I think you have project had a lot of impact in that way like a positive carbon handprint in a way if you can change the legislation or something other, what comes to the hunting, the lynx for example. But yeah, I want to thank you and maybe discussion about that.

01:26:45 Juha Suonpää

Yeah. Thank you Tommi about pointing that it's I should maybe mention also that we have a strong large scale impact project with the nature preservation Union here in Finland and there's a lynx for lynx forest fundraising also and the first forest was already both for protection total protection. So this is kind of thing also that companies can buy the green footprint also by that by buying forest and by being inspired by the Lynx forest protection project and from fundraising. But it's not only links, I mean where you see a links there is great biodiversity also typically everybody is there now talking about the ecosystem and ecology that the animals, how we call them, they are there where the lynxes.

01:28:00 Kirsi Karimäki

Thank you. Is there any other questions or comments at this point? If not, hey, thank you for participation for this lecture. Thank you for presenters. The both lectures were really, really interesting and tried to spot on to our project I think and also now those who are coming to Tampere camp this spring in gym you got a little teaser of our nature. So hopefully that was that was also interesting for you and I guess we are continuing these lectures. We are going to have a next one on April. So stay tuned. You will be invited to an other lecture.

01:29:11 SOPHIE TUMMESCHET

Yes, it will be 16th of April And if you follow us on the Eventbrite, you get notified of every event we do. Yes. And we will have a third one also this this spring. Yeah. Hey, thank you for all. This was really nice evening. Have a nice evening at home as well and see you next time.

01:29:30 Lotta Toivonen

Thank you.

01:29:31 Kirsi Karimäki

Bye. See you. Bye, bye. Thank you.

01:29:34 Juha Suonpää

Take care. Bye

Event 2 / Season 3

Designing with nature

Date/ Time: 12.12.2024 | 15:30 – 17:00

The second Green Screen International Lecture, part of the Erasmus project Green Education in Media (GEM), aims to explore the intersection of sustainability and creative processes.

The GEM project focuses on promoting environmental awareness, supporting green and digital competencies, and developing new, sustainable curricula and media production methods. The project involves universities from seven countries: Germany, Greece, Finland, Croatia, Malta, and Poland.

The meeting will be led by Kirsi Karimäki and Tuomo Joronen from Tampere University of Applied Sciences, with guest speaker Dr. Emilija Veselova, an expert in sustainability and design. Dr. Veselova will discuss the concept of multispecies sustainability and the importance of integrating natural stakeholders in design and media creation. Drawing from her research, she will present practical examples and strategies for aligning design processes with ecological systems, offering insights into how creative industries can contribute to a more sustainable future.

Participants will gain a deeper understanding of the role of design in addressing the environmental crisis and will learn how to rethink creative processes to include non-human perspectives for a balanced, sustainable approach.

Speakers:

- Designing with Nature, Dr. Emilija Veselova, Aalto University, Finland

Curator and Moderator:

- Kirsi Karimäki, Tampere University of Applied Sciences, Finland
- Tuomo Joronen, Tampere University of Applied Sciences, Finland

Summary of the 2nd Event / Season 3

The Green Screen International Lecture, part of the Green Education in Media Erasmus project, featured a presentation by Dr. Emīlija Veselova, an expert in sustainability and design. The meeting was introduced by Kirsi Karimäki and Tuomo Joronen from Tampere University of Applied Sciences. They provided an overview of the Erasmus project, which involves partners from seven countries, including Germany, Greece, Finland, Croatia, Malta, and Poland. The project aims to promote environmental awareness and develop new sustainable curricula and media production processes.

Dr. Veselova's lecture focused on the integration of sustainability in design and creative processes, with a particular emphasis on multispecies and socio-ecological systems. She structured her talk into three parts, beginning with a definition of sustainability from a scientific perspective. She explained that sustainability is often understood as the ability of humanity to continue living on the planet, which is endangered by crises such as climate change, biodiversity loss, and pollution. Sustainability science is a transdisciplinary field that aims to define what sustainability is and how societies can transition towards it.

Veselova introduced three sustainability models: weak, strong, and multispecies sustainability. She criticized the weak model, which separates economy, society, and environment into independent spheres, and emphasized the strong sustainability model, which positions the economy and society as nested within the natural environment. This model highlights the dependence of human activities on the health of the natural world. She also discussed multispecies sustainability, which stresses the interdependence of human and non-human species, emphasizing that the flourishing of the natural world is essential for human survival.

Veselova then explored the concept of socio-ecological systems, which view the world as an interconnected web of entities, processes, and cycles, encompassing economic, societal, environmental, and technological elements. She highlighted the importance of recognizing these systems when designing solutions, emphasizing that sustainability is a property of systems, not individual objects. The complex interactions between human and natural entities within these systems are crucial for sustainable living.

The second part of her lecture focused on the worldviews that contribute to the sustainability crisis. Veselova discussed two key perspectives: the belief that humans are separate from nature and the belief that humans have the right to dominate nature. Both of these worldviews, she argued, are deeply ingrained in Western culture and have contributed to environmental degradation. She also introduced the concept of anthropocentrism, which prioritizes human needs over those of the natural world. Veselova suggested that rethinking these worldviews is essential for addressing the root causes of the sustainability crisis.

In the final part of her lecture, Veselova proposed practical ways to include natural stakeholders in design and creative processes. She argued that designing with nature in mind can help align solutions with multispecies and socio-ecological sustainability. Including natural stakeholders, whether through direct involvement, representative profiles, or proxies, can also challenge and shift the worldviews underlying the

sustainability crisis. By considering the needs and perspectives of non-human entities, designers can create more holistic and sustainable solutions.

She presented several examples of how designers and creative practitioners have included non-human stakeholders in their work. These included projects where animals were directly involved in the design process, as well as the use of representative profiles to advocate for natural stakeholders. Veselova also discussed the importance of visual and audiovisual media in raising awareness of multispecies futures and the role of games, activities, and exhibitions in helping humans connect with nature.

The lecture concluded with a discussion, during which Veselova addressed questions from the audience. One key point raised was the challenge of removing the human factor entirely from a design process. Veselova argued that while it may be impossible to fully detach from a human perspective, designers can still strive to include non-human perspectives in their work. She emphasized that even though humans cannot fully understand the experiences of non-human entities, it is important to try to represent their interests and needs in design.

The lecture provided valuable insights into the intersection of sustainability, design, and creative processes. Veselova highlighted the need for a systemic approach to sustainability, one that recognizes the interconnections between humans and the natural world. By including natural stakeholders in design processes, she argued, we can begin to shift the worldviews and practices that have contributed to the current environmental crisis.

The meeting concluded with thanks from the hosts, who expressed interest in continuing collaboration with Dr. Veselova as the project moves towards developing a sustainable media curriculum. Veselova also expressed her willingness to contribute to future discussions and projects.

Transcript of the 2nd Event / Season 3

00:00:05 Kirsi Karimäki

Hey, welcome to this Green Screen International Lecture. This lecture is part of Green Education in Media, Erasmus project, and my name is Kirsi Karimäki, and my name is Tuomo Joronen, and we are both from Tampere University of Applied Sciences. In this slide you can see the partners of the Project, their Logos

00:00:30 Tuomo Joronen

This project is led by Film University Babelsberg Konrad Wolf and by talent Björn Stockleben and naturally by talent, Sophie there as well. And we have 7 countries, and the countries by already presented in the previous slide. The Universities are from Germany, Greece, Finland, Croatia, Malta, and Poland. The topics are about the environmental awareness supporting digital and green capabilities and new sustainable curricula and courses in the end.

00:01:27 Kirsi Karimäki

And here you can see our work packages. In work packets 2 we research alternative media learning spaces. And we want to know, how can we embrace nature as a context of learning. In work package 3, we want to study environmental impact of media design and

production and we want to know, how can we make our own production processes sustainable. And, for instance, this webinar where you participate now is one example of activities in work package 3. In work packets 4 we develop stories of environmental impact and climate change. And we also want to know, how can we, with these stories, for instance, contribute and make a difference to society and make it more sustainable. And then in the end, in work packets 5, we concentrate on building an environmental media curriculum and put the findings on practice in the partner universities.

00:02:47 Tuomo Joronen

And today we are happy to introduce to you Dr. Emilija Veselova. She is one of our alumni. So she's one of our bright minds, young, bright minds coming from our University as well. But she's an expert in emerging area of designing with nature also known as more-than-human multispecies, planet-centric design. So Emilija has done her doctoral degree in the design from the university.

00:03:30 Kirsi Karimäki

And today, in her lecture, she talks about what is sustainability from sustainability, sciences point of view and how to include nature as a participant in creative processes and reasons why to do it. And then also say covers how to include nature to the broad sects, and then in the end we have some time for the discussion. So think about your questions, and be prepared to be active yourself in the end part as well. But now I think it's time to give a microphone to Emilija. I stop sharing my slides, and Emilija can share hers.

00:04:32 Emilija Veselova

Yes. See? I hope you can see the Big 4 Slides. Hi, everyone and hi Kirsi and Tuomo and thank you for inviting me to this event. As I was introduced, my name is Emilija, and I have my Bachelor's degree from the interactive media program in Tampere University of Applied Sciences, and then I continued my studies in design. I did my masters at Aalto University, also in Finland, and then also there I did my doctoral studies and defended my dissertation on this very topic last year. So I'm curious and keen also to hear after the lecture, your questions, but also your perspectives on how this relates to what you all are doing.

There will be 3 parts to my lecture. So we'll start by defining sustainability. And then the second topic will look again from sustainability, science point of view, the world views that underlie the sustainability crisis. And then we'll conclude with, then how does all of that feed into, including natural process natural stakeholders in design and creative processes. And I'll also show some concrete examples of how that can be done. Let's start with sustainability. But before I dive into it I'll ask you for 1 min for yourself. You can take some notes, but we won't share it unless you want to share it at the end of the lecture. So for 1 min think for yourself what is sustainability? And do you recall any sustainability, definitions or models that you know?

00:07:17 Emilija Veselova

You can start wrapping up your thoughts. And yeah, I think the answers to these questions are the exact things that I'll be now talking from my perspective, or rather from the perspective of sustainability, science. So what is sustainability? It's a term that can mean many things, and people use it very differently. On the one hand, it is a term that can. We can use to describe our ability of humanity to keep living on this planet. And our

survival is endangered by climate change, biodiversity, loss, pollution, and then many other crises that are coming out of that. But sustainability is also used to refer to this aim, aim of finding solutions, of how can we live now? On this changed planet without compromising the ability of our future generations of humans to live here as well. So it's about our long term. But now it is also, in a way, about midterm survival of the human race here. And when I mentioned sustainability science, it's a as most of you probably know, it's kind of a research area or a direction that is transdisciplinary. It includes many disciplines, and it primarily looks into defining what is sustainability kind of what are our goals. What is the current situation? Where are we now? What are the indicators? And then also, how do we move from where we are now? How do we achieve sustainability? How do we imagine it? But also, how do we transition towards it?

And in sustainability Science one of the key things that I have found useful are sustainability models. So it's a theoretical models of how we can understand sustainability, how we can visualize and think about it and conceptualize what it even is. And today we'll cover 3. So we'll talk about weak, strong, and multispecies sustainability. And let's start with the weak sustainability model. And I assume that many or most of you have seen this model. It's been around for decades. It is these 3 bubbles where there's economy, society, natural environment. But sustainability Scientists are not actually very keen or excited or prop. They don't really support this model, because in its essence it wrongly suggest that we can have parts of economy that are sustainable without the society that we have parts of society that can be sustainable without the natural environment. So I strongly recommend of kind of not using this model. And instead sustainability science, they more use the strong sustainability model, or they're also called the nested sustainability models, where the economy is within or nested within this society, and then this economy and society are nested within the natural environment, and when they're nested within something, it means that it is dependent on. So what do I mean by that? If we do not have society, if we do not have humans, we do not have economy on this planet. There isn't an economy that exists without society, without humans, without us having the economic activity. Similarly, if there isn't natural environment. we as humans can't exist, even though we might think otherwise. At kind of the basic physiological level, we are beings who need clean water. We need food. We need oxygen, or we need appropriate air to breathe, and all of those things we receive from the natural environment. It sustains us at the same time also all of our materials, even though we call some materials artificial, like plastics. But they still come from the natural environment. So if we do not have a functioning environment. We physically, as beings, cannot continue living, and also our society and economy cannot continue properly functioning as well. So that's why these strong or nested sustainability models, they very much highlight this dependence of economy on society and of society on an economy, on natural environment. And then, a few years ago even further elaboration of kind of what is sustainability came out called multi species sustainability concept. It's similar to the previous one, but it has some key differences that we haven't really talked about before, where it wasn't as prominent that these discussions, so this concept, very much highlights that human needs and also the future generations are interdependent with the non-humans, with the natural environment and their future generations. So to have future generations of humans, we need future generations of nature's species, organisms, we need the future of the natural world, and it also recognizes, for the flourishing and wellbeing of other species is necessary for flourishing wellbeing and survival of humans. So this very much puts the emphasis from the discussion and sustainability from talking

about humans and human survival and human need to exist to also saying, no, no, we are interdependent with the natural world, we also need them to flourish, exist, and be well. And furthermore, in this graph it also breaks down this natural environment that can be very vague and sometimes kind of hard to grasp what it is, but they further break down that when we talk about the natural environment, we talk about animals, plants, but also about microbial societies like microbes and fungi and things like that, also the biosphere. So the whole living sphere on this planet and the hydrosphere atmosphere in the geosphere. So we need all of those things kind of what is on the outside or the outer skirts of this graph. We need that for the things inside to exist. And these models are, as I said, quite well they showcase what is dependent on what, or especially highlight, that we, as humans, are dependent on the natural environment. As a designer, I find them a little bit hard to work with, because at the same time, when I sit here in my room, or I work on a project. The world doesn't look that neat in these little neat bubbles. That. Well, here's the environment. Here's the economy. Here's the humans great. And that way I'm working these bubbles. The world is a lot more complex. It's interconnected. So I also very much like and find useful the concept of socio-ecological systems. So what are socio-ecological systems? So we can view where scientists view this world as an entanglement a mesh of different entities, processes, cycles, etc. There's economic entities like money or the banking system, societal entities like us humans, but also our groups, policy institutions and all sorts of things that we as humans create. There's environmental entities that are like plants, species, etc., or the different spheres that I showed in the previous graph. And we'll also return a bit further down the line to who are these environmental entities? And then there's also technological entities like the physical entities, like the table, the roads, the buildings, but also the digital infrastructure, like the Internet and the mixed infrastructure where we have, for example, a mobile phone that is physical, but then also has digital components do it. So we live within these sociological systems. And sometimes, we forget, maybe the ecological or the natural and environmental entities within them. But we need to recognize that this is what we live within and that we need to consider all types of elements, including the natural elements and also the whole system. And why the whole system? Because sustainability is a property of a system. In its essence. Sustainability is about a system being able to continue existing while shifting and changing, and maybe experiencing crises. But it continues to exist. If we have a cup, we can't say that it is sustainable because it is not a system. It exists within a system, but we don't really know how it interacts with the things around it what it is like life cycle, how it interacts during whole life with the elements around it? Or how long is it even used? Or is it bought and then placed in a cupboard and not touched for 50 years. So when we talk about sustainability and want to work with sustainability, it's essential to think about systems, and in particular about social ecological systems and entanglements. And that means that also the projects that we work in they are embedded within, or they exist within the Socio-ecological systems. There aren't projects that are just some bubble that doesn't interact with anything around it or is not connected to anything. These connections can be different. It can be nutrients, or it can be oxygen even by speaking here right now, I can connect with the systems around me through the oxygen that I breathe in, and the CO₂ that I breathe out. But it can be also material flows or electrical energy or data, but also experiences emotions that connect us to things around them. And it's impossible to fully understand how we are connected to everything around this, or how projects are connected to everything kind of the socio-ecological systems. But we can start untangling that. And I think in design schools, and my education and design is linked to, for example, service, design or design for government, more on the service and

complex systems level. But I think this would also apply to the product design or graphic design and things like that where we have a project and the context and in design, I think we've kind of more or less have started to be able to identify and train our students and also ourselves identify. Okay, where does the money come from? What, I don't know, blockchain technology do we need to sustainable? Who are our users or citizens in this city that we need to talk to? What technology do we need to use how we're gonna how do we connect to these things, how we are gonna use them? In our project and then sometimes we can even further identify people or groups or some policy that we need to consider that impacts how we're gonna do this. But we are much rarer taught, or, if ever, not in many places, how to identify what are the natural stakeholders that connect to our project? What are the direct interrelations. But then, also, what are the secondary natural stakeholders that impact what we shape and how we design. And I'm not saying that now, in every project you need to start identifying every single natural stakeholder 3 steps away, that this project has but just visualizing that for yourself, that okay, this project is within the socio-ecological systems. How do I connect with them? And how might how can I not live the ecological or the natural elements out. And so from sustainability perspective. The 2 things that are very important to remember is that humans, our society, technology, economy, practices. It depends on nature, and that we're also are inseparably interconnected with nature, natural beings and systems. It comes from these nested sustainability models. And then the socio-ecological systems. So that's something that we very much or what sustainability science informs us, tell us that I think we can learn for design what we need to do, but also for us as regular citizens.

Then let's give a moment to digest for that. And then the next topic would be the worldviews that underlined the sustainability crisis. So we have things happening. We might know where we are heading, where we want to go. But then, what? How do the world user? Why am I even talking about them? So again, I would ask you for about 1 minute if you can think for yourself. So what is human or a human? What is nature? And then what should be the relationship between the 2?

00:22:15 Emilija Veselova:

Okay, if you can start wrapping up your thoughts on this on these questions. And maybe let's start with: Why am I even talking about, or why it's important to talk about mindsets and worldviews. In sustainability science kind of part of the research. Also, looks into what are the root causes, or some of the root causes that we could identify and address that have led to the sustainability crisis, and mindsets and or world views are seen as some of those. So one of the root causes could be seen as that we as humans, we focus on our wants, our own wants and the needs, while disregarding most, if not all, needs up to nature. And at the same time how we act in this world largely depends on how we perceive the world knowingly or unknowingly if we are aware of that or not, how we see how we should act in the world informs how we act within it, and with this idea that we humans focus on our own needs. Of course, we need to survive, we need to live, we have goals. We are species also as biological beings here. But it's something that we can start thinking about that. Okay, if that is the potential root cause of the sustainability crisis. Then what are the elements of it? And how should how can we talk about these things? So today I want to talk about 2 key types of mindsets or world views. And the first one would be the belief that humans are separate from nature and then the other one would be the belief that humans have the right to dominate nature and also in in line with that anthropocentrism or the belief that humans are valuable above everything else. And let's start with this separation from nature. So it is a Western perspective. And it's in many or

most Western languages. I think that humans and nature are defined as in contrast with each other. Even if I look to the dictionary, nature is defined as *opposed to humans and human creations*. So we often talk about this is humans. This is nature, this is society, this is nature, culture, nature. And there is this divide of. We are as humans, and we are not nature, and it's not a new concept. It's not something that we have come up in the past 10 or 20 years it's been around for thousands of years. It's this view that humans or humans strive to be independent from nature, and it's ingrained in our language, culture, worldviews, attitudes, different practices. It's a subconscious thing or essence in which we operate within. And we rarely question this divide. It's quite challenging to dig into subconscious meanings of these, or find words of how to explain that. So and maybe for me, the socio-ecological systems has been one of the ways how to question this divide. But it doesn't mean that I, after 7 years of working on this, have even done kind of massive work on unpacking. What does this mean for me? Because I and we all still exist in this Western culture. So in this lecture, when I talk about humans and nature, I still retain this division, but I strive to make it visible and kind of reflect on it through the interconnections and interrelations that we had. But this idea or belief that humans are separate from nature is something that we should keep in mind and when we can work towards thinking or pondering upon but it's not the something that I believe we could address within a short period of time. And then the next part would be the belief that the humans have the right to dominate nature. And it's the belief that humans are superior to nature, that we have the right to dominate nature, that we can use it as we please, and it's linked to various again, historical developments in Western societies in the Judeo-Christian religions, God gave nature to humans to sustain themselves. In Greek mythology it was a big theme of kind of conquering nature like getting the fire conquering fire. So again it's not a new belief. It is in grain, in the, in the things that we do, and how we have been doing things. And now we're arrived at a place where we see some consequences or many consequences of this approach. So we can start to rethinking. Is, is that so? And there are also different views. So as a person, for example, I might believe that I very much value nature, that I am part of nature, or I cooperate and co-create with nature. So there is a whole spectrum of other perspectives, of how we could view relationship with nature. But an important thing to also note is that often the personal view of a person on their relationship with nature, how they value nature, how they regard it, what they do want to do with it is not the same as their professional view. So in our professions, in our practice, we are often trained of how our professional practice treats nature, how we relate to it what is right or wrong. Do we talk about nature at all? We might at all kind of not see and avoid it. That it's not a topic that we cover, or we, if some of you might be engineers, is that well, we are stewards of nature. That's why we need to build these dams here and there. So it's important also kind of recognize the distinction between what we personally view and then also, what does our profession, our practice tells us of how we should relate to nature. And here is also the word anthropocentrism comes in, and it's a term that is that is often used nowadays. If I have read, quite many people strive to do non-anthropocentric design or eco-centric design or planet centric design, so that's why I wanted to include here as a kind of a reference point for reflection. But in essence term, anthropocentrism comes from Western environmental ethics or from Western philosophy, and it looks into in essence. Are we more responsible for our actions towards nature. So in anthropocentrism it would view that we are morally responsible only towards humans. And there is, if anything out there that we in natural entities that are intrinsically valuable, or they have a value in itself we should value just for the sake that they exist. If we have to choose between valuing natural entities and

humans, humans, still should be valued more highly and should be prioritized in moral decision making. And then in non-anthropocentrism there are also ideas, and there's a lot quite varied ideas that we are morally responsible towards some parts of nature. Some parts of nature are intrinsically valuable, and we should see them as equals in our moral deliberations, or deciding what are good or bad, act towards it. So if some of you are interested in that reading through these ethical perspectives can be quite eye-opening. But then, also, at the same time there's still thinking frameworks. Of how do we relate to nature? Do we have to the right to dominate nature as we please, to do whatever we please with it. So how should we treat it? And with that I think I'll summarize the notions about sustainability that I wanted to cover today here is that the first one is that sustainability is about human survival on the earth. And then that humans depend on nature. We depend on it for oxygen, for breathing, for materials, for climate or appropriate temperatures to live within humans and also all our creations are projects. Are very interconnected with nature. We live and design within socio-ecological systems, even though sometimes we don't really want to see the ecological part of those systems. And then world views that humans are separate from nature and cannot dominate nature or use it as we please, are seen as some of the root causes of the sustainability crisis, which kind of they contradict directly of what we learn from sustainability about humans, nature and human nature, interconnection and human nature interdependence.

So with these, we get to maybe the part that some of you might be looking forward to the most. But I want to talk about including natural stakeholders in design and creative processes. And again one last time. If you could think for yourself for 1 minute based on what you have heard so far today, why should we consider natural stakeholders in design and creative processes?

00:33:19 Emilija Veselova

Yeah, it's time to wrap up the thoughts that you have had. And then let's move forward. And I think this question that I ask you was also one of the key questions that I had for my doctoral research of why should we or maybe we shouldn't include natural stakeholders in our processes. Where I arrived after 6 years of research, is that I think that we need to consider. And by consider, I also mean include represent design for non-human stakeholders in design processes. And I identified 3 reasons for doing that. So the first one was that: we should include and consider natural non-human stakeholders to design practical solutions aligned with systemic and multispecies, sustainability and socio-ecological systems. So even at the smaller steps of including natural stakeholders, I believe that including them, representing them, showing that they also are present in the processes we can start developing solutions. And by solutions I mean mostly products or services or urban settings, where we align these things more with the kind of the reality of social, ecological systems in which we in which we live. So we start shifting from only designing for the humans, human needs, or even maybe needs of the economy or needs of the technology towards designing for the needs or the complexity and the interconnections within the Socio-ecological systems. The second reason why we should be doing that is that we can start challenging and potentially shifting the world views and mindsets underlying the sustainability crisis. So, for example, in collaborative design, one of the things that we do is we invite different stakeholders to sit around the same table and explore the design problem or design the solution. And often it's only the human stakeholders that are there. They represent their organizations or their personal perspectives, they've used their needs, and I believe that if the non-humans are not added to the table, we can kind of disregard them and really focus on the on the human elements

within the project. But then, if we start including or representing the stakeholders that are in the space showcasing which stakeholders do, we have, or having people come in and speak and represent. These natural stakeholders, we can start challenging. Well, first of all, ourselves as designers, that okay, we are interconnected with nature. Maybe it's not that we can do whatever we want with it. And we can start really kind of reflecting on our own activities. But then also working on the world views and mindsets of the people that we work with. And it doesn't mean that we will be able to buy it through one workshop or even a one-year project. I don't think, change entirely their worldviews and mindsets about the separation from nature or dominance over nature. But we can start challenging those and seeing if there is minor changes that we can start making. And I think this reason could also be one link to the process, but also to the outcomes. So what are the stories that we tell? How do we present our project? What are the final outcomes, or how the narratives around nature are told in the games or movies, or any other audiovisual media. So that also those elements can start challenging the world views and mindsets of the people who watch them. Then, the last element, I think, is that once we start including and considering non-humans in our natural non-humans in our processes, we create opportunities to illuminate and challenge structures and systems that maintain and sustainability. And by structures and systems I mean, policy regulation but also practices within or social practices. Our habits, how we teach and our theory, for example, in design or theory, and media or theory in art, how we teach those things. So the education systems, etc. So once we start working with the stakeholders or with the natural stakeholders. We can see when we include them. What do we hit against? What are the challenges? What are the contradictions, for example, is there contradiction in law that we cannot do something? Or is there contradiction of how we have been taught, how we need to do our work, or we as educators, how we need to teach our students. And of course, these 3 reasons, they don't exist in isolation from each other. So in my work I use this kind of again, nested view on it, based also on the 3 spheres of transformation in sustainability, where we have the practical solutions on the inside. Those practical solutions are shaped by the structural elements, so the systems and structures, and then all of that is shaped by the personal, but also collective beliefs, values and worldviews. So when we include the natural stakeholders, it doesn't mean that we always have all 3 goals in mind, and we might have a primary goal in one of them, for example, working on the individual or collective beliefs. But once we start working with that, we can also see challenges, or maybe propose, or kind of nudge change in the structural or practical levels. So this is where I arrived with my looking into already why people include natural stakeholders, and also how this idea or proposal of including natural stakeholders, correlates with sustainability science. But before I go into showing the examples. I do want to highlight that sustainability related reasons are not the only reasons why some designers or creative practitioners include and consider natural stakeholders. There was also many designers that include natural non-humans to support their wellbeing. So, for example, wellbeing of working animals, zoo animals, pets. And so often those projects don't really have, how to say it, an explicit sustainability agenda. Maybe in some ways I could attribute them to the personal sphere of transformation. But when looking into these also examples that I show soon some of them are created to support the wellbeing of the animals rather than explicitly to strive for sustainability. So I've been talking a lot about natural stakeholders or non-human entities, etc. But who and what are they? In my work, because I was heavily working with sociological systems and systems, thinking, I also strive to develop a systemic typology or kind of a tool that could help me see the variations. So I'll present 7 types. I don't claim that they are the only types that are that

are out there, but this is what I found in one of my research projects. So we'll start with single organisms. And it's quite a typical a stakeholder for those who work with natural non-humans. So it's kind of an organism that is, typically or in biology, it's seen an independent living being. So it could be plants. But it could also be different types of animals, like mammals, birds, reptilians, etc. So, considering them or a single organism is an option. Then we can also talk about single species collectives. So it's kind of a collective or a group of organisms from the same species that have kind of a special organization of life. They need each other to live one of the examples here on the left. It's a hornwort it's not a plant, but it's kind of a adjacent plant, adjacent Hornwort, and these are the different organism, or several organisms together, but they stick together and form this colony to live. Similarly, in insect world, it's bees or the social insect colonies. A single bee cannot survive are live in this world. They need their bee hive. They have a specific organization of life within that bee hive, and we need to ensure that when we design for bees, we design for colonies or species collectives. Also algae and fungi, where we can't really separate a fungi kind of where is the one organism that ends? And maybe it's not even a collection really of organisms is, it is an entity, it's a I view it as a IA single species collective. Then we also have multi species collectives, and it's where there are several types of species. For example, the lichens here on the tree trunk. The gray things. It is collective. It's microorganisms. It's I think it's algae and bacteria together. So they joined leak form symbiosis and then live together. But it's 2 different species. Also soil I think, could be seen as a multi-species collective. There's a lot of different organisms living there, and it's kind of a living, breathing being of many different types of living organisms together. Of course, also living systems or ecosystems depending on how much we zoom in or zoom out. It's a location tied system of living organisms, like a garden or forest or a river, and as we shift how far we zoom in or zoom out, we might see a different ecosystem or living system. If we talk about systemic view on stakeholders that we should consider, we should also consider life processes or the processes of how different elements flow between the living and non-living parts of the biosphere, such as the photosynthesis process, or the decomposition of organic matter which is here in the image to the right, or respiration, or breathing, or nitrogen fixation, which is a process on the roots of a tree that involves the tree, but then also the bacteria and fungi in the soil, and how they exchange nitrogen, and why I promote considering the life processes in our in our work is that because I think sometimes they can be very much overlooked, even though we are seeking to find sustainable solution. For example, with the decomposition of organic matter. I often get surprised or maybe frustrated, when people take, for example, butterfly wings or rose petals and then coat them in plastic, and then they say that they have created a kind of a upcycled or created a waste free product. But at the same time, what they have done in my eyes, they have prevented the process, or disrupted the possibility of the decomposition of organic matter to happen. So we have coded the pedal into plastic. We cannot, the pedal cannot decompose anymore. So the elements within it, like the carbon phosphor, nitrogen, and other things that are within it, they cannot break down, and cannot be taken back into the ecosystem, because now it is coated with plastic. So I would be curious to explore also further, how these life processes happen, and how do we in our design projects impact them. If we talk about life processes, we also need to talk about the Biogeochemical cycles. So how do these elements, like carbon flow throughout the atmosphere? The carbon cycle, also nitrogen, phosphorus water. A lot of these things flow in the biosphere. And we need that flow for life to continue living. We need for example the rose, petal, or fallen leaves, we need them to break down so that they become part of soil so that they can again next year grow the tree can use the

nutrients from it to grow the trees, and then it falls again. So there is this cycle if we wouldn't have the biogeochemical cycles, but also the life processes. For example, we would just have a lot a bunch of leaves laying around that nothing happens to. So these are also processes that we can consider. And another process is the processes of the atmosphere. So the weather. Season climate. How those impact us? Because, for example, if we talk about design of transportation services, we would definitely here in Finland, consider how the winter season will impact what we are designing, but on also kind of in the longer term thinking. If we're doing any visioning projects, then we need to consider climate and how it will change in climate will affect us. But also in the long run, how might we impact the climate, for example, with a CO2 emissions, or any other emissions that our creation will produce. So there are the 7 types. But one thing that is important to remember that when we work within systemic view, that one observable entity is several systemic stakeholder types. And I'll work you through that idea. So when we start thinking in systems, we start viewing the world of the picture that we see that it's complex. We can break in down into different elements and see it as different stakeholders that are present simultaneously. So if we look at this tree, it's an organism but it's also part of a living system, and we can't really pull that tree out. It's not just a floating object there. It's a part of the living system. It's part of the garden. But if we zoom in again, then we see that, there are dots on the leaves, and these are bacterial disease, usually several types of bacterial together. So there is a multispecies collective on this tree. There is a they're brought in, Cherry, so there's already decomposition of organic matter happening while the chair is still attached to the tree. We have leaves that do photosynthesis. So there is life processes happening here. And then that also means that there is carbon cycle and oxygen cycle. We also have lichens on the tree, that is, a multispecies collective. The roots of the tree are rooted within the soil. That is a multispecies collective. And also there is nitrogen fixation and nitrogen cycle happening as well. So that's what I mean that. Yes, we have the typology, and we have the different types. But when we engage with the environment around us, we need to start seeing it from kind of this complex view, and maybe we won't, maybe we'll just work with one of these stakeholder types, but it doesn't mean that if we identify one, that that one is the single one that is there. So I come back to the talk about organisms, collectives, processes, systems, cycles, and then also the weather, climate and season. But then let's arrive to the very end of our presentation, and then I'll show some of the ways how I've seen people recruit include and represent the natural stakeholders, and also some concrete examples of the projects that are there. So we'll start with direct involvement. So in some of the types that I just showed it is, for example, with pets or mammals it's possible to directly involve the natural stakeholders into the process. So, for example, them being engaged in prototype testing on development of interfaces that would work for dogs or also for working dogs. Here's a cancer detection dog that it's job to sniff tissue and then, at a certain point, when they detect cancer, press the machine in a particular way to indicate that there is cancer there. So this project looked into, how does this mechanism work? How do we create this interface so it better aligns with the behavior of the dog than the behavior and needs of the human. And there is a full kind of direction in the computer science called animal computer interaction that does a lot of research into how animals can use the technology or rather, how can we design and develop technology that is not designed for human use. Again, how that directly links to sustainability I do not claim right away that it does, or it. I would want to see more investigation or discussion of that, but it is possible to include some mammals into direct testing of creations, but not only mammals, also birds. And now I'll show a video of a project from the boom. So in this

project they you involve parrots. And here the parrot is playing a game. But there's also research where they develop technology where parrots can call each other and interact. So how do we make different types of interfaces, for non-humans, for animals, for birds. Another way to do it that I already mentioned before is representative profiles, or, for example, it's a persona, if any or some of you have used in your work, where we make a representative profile of usually a human, describe them what their needs are, how they work, so we cannot make a human profiles. But we can also have non-human profiles. And this is from one project from Australia, and, for example, this is the beans, the possum and this profile was primarily created through a secondary research. So reading about this species in encyclopedia and understanding kind of what their needs are, etc, but they can also be created, for example, involving researchers from a particular theme like a biologist, urban ecologist in general, ecologists to develop kind of representations of these things that then we can bring to the table with other humans, or even just with us as designers, that this is something that we should consider in our work, and they can be made for a particular species, but they can also be made for ecosystems, and then they're called ecosystems. And here, for example, is one about the Amazon rainforest. And again, it includes kind of vital information that we should know about this stakeholder when we design with it, and also the parent perennial stream is another example of this. Then another object or approach that I have seen is that we have humans act as proxies to advocate for nature. And one approach is that, for example, you prepare the representative profiles and then you ask the human participants, regardless of their educational background, or expertise, that based on the profile that they are given, that throughout the engagement workshop, or whatever session that they adopt the role of that entity, and they tried to speak on behalf of that natural stakeholder. And in this way it's not necessarily that they provide the perfect or the most clear and unbiased representation of that natural stakeholders perspective. But the human gets to experience how it is to look at the project from a natural stakeholders point of view, that is, that might be very different from theirs, and how it is to advocate for the needs of that of that stakeholder. It could also be done in projects, in design projects where you invite researchers or people with a particular expertise related to that natural entity researchers, maybe indigenous peoples or so some per certain professionals like fishermen or gardeners that have extensive practical experience engaging with certain stakeholders. And then these people are there to present the perspective of the natural stakeholder. Again, they're not going to present the unbiased, or they won't tell the exactly the perspective of that stakeholder, but that they will represent and advocate for that stakeholder in the discussion or the creation process. Another aspect of is the creation of socio-ecological systems maps. This is one from my research, but in general, the activity of mapping a setting or a context, not only from who is there from humans? What governs or what policies govern this place, what technology is there, or what infrastructure is there? But also what natural stakeholders are there. How things flow? Where is what, how are these things interconnected? And then also an example from a summer school by Ieva Lauben and Ruta Jumite from Latvia, where this is a sociological systems map of an urban market, where at the first glance there seems to be not a lot of ecological entities but then, once the students start mapping it. You can see that there's actually quite a lot of things and a lot of places where you could make interventions into these systems. And then the final I think it. Oh, no, it's a second to last. So another one would be the visual and audiovisual productions to experience natures and more than human. This is from a most project here at Helsinki University in Finland. Where they created this pavilion that includes speakers with sounds of nature, so that the decision

makers who need to make decisions about the urban nature, they would do so in this space that also feeds them, the kind of the ideal experience of being in nature, while they deliberate and make decisions about nature. And of course, that requires production and recordings, and in this case it's mostly audio, but also what would be the visual elements for it. And then another would be linked to, I was about to say, just graphic design. But it's not just graphic design. So in this case, it's from a architectural competition showing multi species futures, but kind of that the graphics, sorry visualizations of futures or visualizations of games or visualizations of movie sets, or things like that, that they include the natural elements so that they are normalized in the sense that they are there. We need them there. We want to have, for example, a multispecies city. That we do not only focus on this kind of sleek concrete glass type of, or very technologically produced spaces or representations of things. And then final way as the games, activities and exhibitions for humans to learn about and connect to nature. Here is an example of a project by Kaylene Kau, Animal Diplomacy Bureau. It's a game that includes also these physical masks. But the rules of the games are written based on a study into behavior of urban birds. And then also the characters are developed based on that, so that when the people are playing the game through the game, they learn about the different types of birds in this park, in this case it's in London. There are the different types of birds. How do the birds interrelate? How do the birds with birds, with other birds, birds with the environment there? And kind of what are the rules of the game of the non-human world, and it can be played both with adults, but also with children. And then the final example. I'll show an example from Aalto University, from Julia Lohmann and her initiative, called Department of Seaweed, of how we can bring in and talk about ecosystems and the natural environments so that the humans can also experience and empathize with them. And I'll also kind of conclude with this video.

01:02:36 Tuomo Joronen:

Sorry, Emilija. I'm afraid we can't hear the sound.

01:02:40 Emilija Veselova

Oh. okay, let's see. Maybe I'll just click through the video and walk through it. So the critical tide was an exhibition at the Helsinki Design Museum. Yulia Lochman is an artist that works with Seaweed. But at the same time, through her works she wants to talk a lot about the ocean ecosystem, and what are the requirements for it to exist? How humans engage with it. And she really brings kind of very beautiful practical installations, but then also works a lot with the researchers. And she exhibits in different spaces to challenge people's worldviews, and let them experience this ecosystem that they might not experience directly in their lives. In some of the participants of the exhibition. You could also write notes to the ocean or to the Baltic Sea, confessing what sins you have committed towards the sea, you could engage with the Seaweed, touch the material and really touch the ocean plastics and engage with that ecosystem that you wouldn't be able to engage with otherwise while doing that in a very kind of engaging interactive hands on matter. So with this example, then, I conclude my talk. I hope that, I was told I could take up 1 HI hope I didn't go too long, and that you still enjoyed the content of the lecture, and I would be very curious to hear your questions. But then also your reflections, ideas, perspectives of some of the questions that I asked you, but then also some of the reflections of how this relates to your work, and kind of the project overall.

01:05:42 Kirsi Karimäki

Thank you. Emilija. It was very interesting presentation. I really enjoyed the theory part a lot. It was really interesting. And also, of course, the examples. And we're nice to see, especially like the future example would be lovely to see something like that, and experience society like that. So that was really like a hopeful, hopeful picture as well. I have some questions in my mind. But let's take first from the audience some comments or questions. And, Cindy, you can be the first one.

01:06:29 Cindy Kohtala

Excellent. Thank you so much. Yeah. My name is Cindy Kohtala. I'm from the Umeå Institute of Design, and I was a colleague of Emilija's. So I'm really super happy to listen to this presentation. Really very clear and laid out, and like pedagogically extraordinary. Thank you for that.

01:06:50 Emilija Veselova

Thank you. Cute.

01:06:51 Cindy Kohtala

It made me think also of probably something that you have addressed and will continue to address in your research life. Who are we engaging also in these? I don't mean who, as in the stakeholders, the non-human stakeholders that you laid out so well. But also I feel like that there's all kinds of other human actors that so benefit from. I don't know this this new way of working a new way of thinking. Are we in danger of having designers speaking to other designers.

01:07:30 Emilija Veselova

In a sense, maybe yes, sometimes. But then, at the same time, I feel like the most projects that I have seen the work has included some other stakeholders, a lot of researchers. But then also the discussions kind of design is not the only field that is having the multi species more than human discussions. Also, I think sustainability scientists or different people working in that field are very keen and curious. I just saw one webinar today at the University of Helsinki, where they're starting a project on multispecies, justice and health. I'm not sure if there is designers involved there. But that work is happening. Urban planners are picking up this work and their the City of Helsinki last year published a report called Multispecies City, and from their discussions with them. They're also very keen on having design early perspectives from there. And I think that of course not everyone, or even, for example, with urban planning the discussions that I have had. There are people who are keen, and then there are people who are more resistant. I would be very curious to work actually bring these approaches into a design agency and see how that plays out in practical projects where there is a client that wants a particular product or wants a service. And then seeing whether there is a space to have those discussions while there are budget limitations or time limitations or yeah, the thing needs to make money at the end. So I would be very keen on seeing that. And I'm curious if there might be kind of more recent projects that have been doing that. And then I'm keen to see the publications of how that's gonna happen. But I think, also, designers are proactive, but they're not the only ones who are proactive in this field.

01:09:53 Cindy Kohtala

Yeah, thanks, so much.

01:09:55 Kirsi Karimäki

Thank you. Are there any other questions from audience or comments? If not, we can take some comments from Chat, maybe, or or hey?

01:10:08 Tuomo Joronen

I could also make one comment. And then I think it's actually a thing that I've been thinking that what's the role of science, or what has it been? Is that that it's been taking a way the special place of human in the world and I mean, like my example of this is that in astronomy, you know, Galileo Galilei got us away from the heliocentric view of the world, and that was like a like a major thing taking place naturally, then the world is not rotating around us. So that was like, like. Actually, we are on a far way place on a galaxy that's far from you know, it's like we are so tiny and so in a way, the science is always taking us away from be being special, you know, and I mean, like you know, the you. You mentioned about the reliance saying that the nature was made for us and you know that that big dilemma, I think that's really big part of it, but it also made me think like that. This process is, or it has been, going on for centuries, and it will go on like sort of to finally show what is our place in the universe, you know, like it's but it's smaller. But I think, like what Galileo made in in in like more kind of a hard sciences. It it's that the sciences that we usually call kind of soft sciences. They aren't kind of because we haven't been put to our place yet in a way or that. And then that really made me think about that thing, and I think that was a somehow really eye opening for me, that there's probably a long way to go to still find our real place in the world.

01:12:40 Emilija Veselova

Yeah, that's a very interesting thought. I hadn't thought about it from that kind of perspective of what is the role of science. But also I mean it makes me think of kind of. We are still in part within discussions of whether the sustainability crisis is real, whether there are still people who question that and question the need that we do need to change or evolve, or because there's even kind of I've heard saying, among the scientists that we know what we need to do, we're just not doing it. So in that sense, I think the soft sciences and religious beliefs. Worldviews. They are essential for finding this our real place in the world, but also seeing, how do we change. How do we evolve? How do we work? With the natural stakeholders? If that is clashing with kind of our worldview, and how we believe how we believe the world to be so we **challenge** very many, very many things. And maybe that's why kind of we are here where we are today.

01:13:59 Tuomo Joronen

Yeah. Yeah. But hey, also, I have one question before, maybe looking at the chat, and that was about the natural stakeholders. I mean, you had that but I was also something about like the inanimate parts of the natural stakeholders. So I mean, if we pump up oil from the from the ground. Where does that oil? Or let's say, if we use sand for building something. Where would that land in the in that in that category.

01:14:32 Emilija Veselova

I think it because in my work I looked at kind of the life things. So I think I didn't include that. But I would be. I think, for me it very much falls into the category of how do we value these things and maybe I haven't really thought about the crude oil, but one of my colleagues at all she does her research about rocks and soils and their relation to the construction industry, because in many places there needs to be soil removed and then in Finland there's also a lot of granite that needs to be blown up, and then this rock becomes

either I'm not sure if that part becomes like the pavements that we use, or these rocks that we throw on the street in the winter, but then her she is questioning, well, are like how to say, are these rocks valuable in that they just exist there? Are we kind of why do we just think that we can show up there and blow them up? And also with a kind of non Western perspectives on the world and sentience, that what if those rocks are kind of they have particular type of saints, and they just live at a very different time scale. And then we show up because we need to put a new apartment block there and then we just we feel entitled that we need. We can move them and around, and I think my work has explicitly more focused on like the living parts. And now, when I think about it, maybe because it's for me a bit easier to connect with that, because well, it's life, and it's living, or it's sustaining life and how it moves. But I think it's an excellent question.

01:16:37 Tuomo Joronen

Yeah. And I mean, naturally, if it's about the process, you know the process is with, when with any kind of a living entity. It's the process is a whole lot faster. Thank you. I you can probably see the chat box also by yourself. So if you want them, yeah, I think it's very related question there, actually, this from Gregory.

01:17:04 Kirsi Karimäki

I wanted to know what Amelia thinks if we remove the human factor completely from a project.

01:17:16 Emilija Veselova

Well, I think to completely remove human factor from a project, we would need to completely remove humans, including the designers from the project. And one of the kind of thought explorations I had during my Phd. Was that, well, are we the only creative species that can create and design. Or if we, for example, create a landscape, and then plants grow and modify it, is it change to our human design or are they redesigning by themselves what we have designed for them? Or if we bring in if we bring in a couch and the dog chews it up. Is it damaged to the couch, or is it redesign? But I think it goes very much into kind of a philosophical discussion. If there is no human present. But I think that within projects I would be curious to see how much the designer that only designs for the non-human would need to do in a reflective work to touch themselves from being human. And even still, then, I don't think that I, as a human or anyone as a human would be able to fully adopt and kind of a nonhuman non anthropocentric perspectives. And there's quite long discussions and philosophy whether that is even possible, because we cannot see or experience this world from their perspectives, even if we can kind of in, imagine them or envision them, or we can base them on the research and observations that they do. But those still are funneled through us human vehicles, or even in design we use this word needs a lot. But it, it is our concept. It's a human concept, or even a designerly concept of what that means. So I'm not sure if we can ever fully removed the human from the more than human creative process, unless it's the entities doing that. And then I think we have whole nature, building things for itself and creating things. Pigs bring in flowers into their homes to kind of to decorate, and animals play and relate to each other like, there's so many things happening. But yeah, I don't think that we can remove the human fully.

01:20:02 Tuomo Joronen:

Is there something else to conclude? I mean, maybe Emilija also going through the chat box if you might want to comment still, but I mean we only have like 5 minute to go.

01:20:21 Emilija Veselova (she/her):

Yeah. Let's see, I think I will. Amelia has been Commenting a lot. I hope it's okay. If I call you Amelia by your first name. But I think there is a there is research, A and Western perspectives about this. And you mentioned this unknotting and her. I think one of her most famous books is the mushroom at the end of the world, and the different entanglements of the mushroom industry, and also ecosystems, etc. And then, Amelia, you also mentioned the blurry versus strategy, and I in infer from that the non Western perspectives, and I think they exist. I refrain from speaking on behalf of them. I don't think that it is my space. Maybe it could be a space for a researcher to come into one of the next sessions of this seminar, or in inquiring in general, I think those are important to consider and look into, but and also being aware of, where do I, or maybe any of you, stand, or where do our beliefs and world views and cosmologies our understanding of the world comes from, and how do we? How do we relate to that? And kind of unlearning for us, the Western thinkers, or maybe some of the things that we might have lost from our cultures or world views. For example, I'm from Latvia and a lot of the folklore tales they still include a lot of this interconnections and interrelatedness but throughout the centuries of Christianity, and being colonized, that has been lost. So I'm curious. If maybe Finland also has similar ideas. It's just something that in kind of our modern world, 21st century or at least at the end of the twentieth century. It wasn't a big topic. But maybe it's gonna change for this century now.

01:22:44 Tuomo Joronen

Let's hope so. I think we are approaching to the end of the of the of the webinar. There is a lot of time saying, Thank you. Many are saying, Thank you. And they were really liking your presentation. So also we, of course, we are really thankful that that you came and prepared so nice. Nice! Really nicely taught over lecture for us and all those examples as well. And it was a really pleasure to once again, listen to you. So thank you for this. And hopefully, we can. We can work together later as well. Yeah, thank you, Emilija, and we could stay in touch. I personally felt that it might be interesting. I don't know if we could maybe bother you once we are in that curriculum step with this. But naturally I do understand that you would need to have some resources for that, for instance. But the but we will keep that in mind. And if we can find up some resources we could contact you in the future.

01:24:08 Emilija Veselova

Great, and thank you for the audience for listening, and then for the consortium for having me, but also for Kirsi and Tuomo remembering, or are seeing, some of my posts on the social media about research, and then inviting me. It was a pleasure, and also very great discussion afterwards. So thank you for having me.

Event 3 / Season 3

Symposium / Green Education of the Future

Date/ Time: 11.06.2024 | 15:30 – 17:00

During the Mid-term Multiplier Event of the Green Education in Media (GEM) Erasmus+ project, participants were introduced to the goals and progress of the project, which focuses on integrating sustainability into media education and production. The event featured speakers from various European universities and related projects involved in GEM, along with invited guests.

Björn Stockleben from Babelsberg Film University, the GEM project coordinator, provided an overview of the project, emphasizing the importance of integrating nature into media education and implementing sustainable practices in film production. He also discussed the Sustainable Future Camps, educational workshops organized by GEM, held in Germany and Finland.

Nicole Loeser and Sophie Tummescheit shared insights into these camps, where students experimented with innovative storytelling formats about environmental impact and created media projects focused on sustainability.

Tobias Fröhmmorgen from the CRESCINE project addressed the challenges of green film production in Europe and the need for standardized sustainability practices within the film industry.

Florian Schneider from the PACESETTERS project discussed the role of art and creativity in accelerating the climate transition, highlighting the importance of cross-sector collaboration in the creative industries.

Finally, Sarah Dreyer, producer of the film "Exit Pangea," shared her experience of producing a film following sustainable principles, which earned the German Sustainable Film Production Award.

Speakers:

- Nicole Loeser, The Institute for Art and Innovation , Germany
- Sophie Tummescheit, Filmuniversity Babelsberg KONRAD WOLF, Germany
- Marta Materska-Samek, Jagiellonian University, Krakow
- CRESCINE Projekt - Tobias Fröhmmorgen, Universidade Lusófona, Portugal
- Maike Reinerth, Filmuniversity Babelsberg KONRAD WOLF, Germany
- Exit Pangea Film - Sarah Dreyer, Filmuniversity Babelsberg KONRAD WOLF, Germany
- PACESETTERS Project - Florian Schneider, University of Science and Technology, Norway

Curator and Moderator:

- Björn Stockleben, Filmuniversity Babelsberg KONRAD WOLF, Germany

Summary of the 3rd Event / Season 3

The Green Education in Media (GEM) Erasmus+ Corporation project is a collaborative initiative aimed at integrating sustainability into media education and production. The project brings together nine partners from six countries, including universities and

institutions from Finland, Germany, Poland, Greece, and Malta. These partners work together to explore new methods of teaching media production with a strong focus on environmental sustainability.

Björn Stockleben, one of the event's key speakers, introduces GEM as a project that envisions bridging the gap between media education and nature. He explains how traditional media education often takes place in concrete environments that separate students from the natural world, which can shape their thoughts and inspirations in a way that leans towards dystopian or highly technical visions of the future. GEM aims to change this by integrating nature into the learning environment, encouraging students to reconnect with the environment as they develop their media production skills.

One of the primary goals of GEM is to explore and create alternative media learning spaces that integrate nature, even when working in virtual or hybrid spaces. In these alternative spaces, students can engage in media design and production while being mindful of their environmental impact. The project seeks to lower the ecological footprint of media production, giving students the tools to apply sustainable practices from the beginning of their education.

The GEM initiative is divided into different work packages, each focusing on a specific aspect of the project. For instance, one work package explores how nature can be used as a context for learning, while another examines how digital tools, like virtual reality, can help recreate natural spaces in virtual environments. Additionally, one package focuses on green production practices, looking at the environmental impact of media production and teaching students how to mitigate these effects through sustainable practices. Another work package addresses the social impact of media production, exploring how storytelling and media design can be used to promote awareness and behavioral changes towards more sustainable and environmentally conscious futures.

Stockleben explains that one of the key activities of GEM is the annual Sustainable Future Camps, where students from various partner institutions come together to experiment with sustainable production methods. These camps focus on creating media that not only tell stories about sustainability but are also produced in environmentally friendly ways. He shares that the first camp took place in Berlin, with the second held in Tampere, Finland. In both camps, students worked on projects that ranged from interactive data visualizations to artistic installations, all aimed at promoting awareness of sustainability and environmental issues.

Nicole Loeser and Sophie Tummescheit, who co-organized the camps, provide more detailed insights into the activities and objectives of these workshops. The primary goal is to experiment with interdisciplinary approaches to storytelling and media production that are both innovative and sustainable. The workshops are designed to foster new narratives around environmental impact and positive future scenarios. Students are encouraged to think creatively about how to use media to promote sustainability, both in the content they create and in the methods they use to produce it.

The first Sustainable Future Camp in 2023 took place in a rural setting in Germany, allowing students to engage directly with nature. They participated in nature walks, during which they collected natural assets like plants and used these experiences to inform their media projects. The camp encouraged students to reflect on their relationship with nature and how it could inspire their media creations. Projects ranged from video games to films, with each group focusing on creating media that could effectively communicate sustainability to a broader audience.

The second camp, held in Tampere in 2024, followed a similar structure but introduced new elements like a "data walk" where students collected information from the environment to use in their media projects. The camp also explored the use of digital tools, such as virtual reality, to create immersive experiences that highlighted environmental issues. Students worked in groups on projects that included data

visualizations, artistic installations, and virtual reality experiences, all aimed at raising awareness of the environmental impact of everyday actions.

One of the critical challenges faced by these camps, as Loeser points out, is finding effective ways to tell stories about climate change and sustainability without resorting to dystopian narratives. The focus is instead on creating positive future scenarios that inspire hope and action. Through the collaborative workshops and interdisciplinary approach, students were able to come up with innovative media formats that conveyed these messages, ranging from educational platforms to artistic data visualizations.

The GEM project also looks at how these innovative teaching methods can be integrated into the media curriculum. Stockleben emphasizes that it is crucial to incorporate sustainability into the curriculum so that students regularly engage with these ideas throughout their education. This approach ensures that sustainability becomes an integral part of how future media professionals think about production and storytelling.

Following the discussion on the GEM project and Sustainable Future Camps, the event shifts to presentations by other European Union projects focused on green production and sustainability. Tobias Frühmorgen from the CRESCINE project and Florian Schneider from the PACESETTERS project introduce their initiatives. These projects share a common goal with GEM: promoting sustainability in media production and finding ways to reduce the environmental impact of the industry.

Frühmorgen explains that the CRESCINE project focuses on developing sustainable practices in the European film industry. One of the challenges faced by the project is the lack of standardization in green production practices across Europe. Different countries have different certification systems, and there is a need for harmonization to facilitate international co-productions. CRESCINE is working on creating a unified framework for sustainable film production that can be applied across Europe. Frühmorgen highlights the importance of upskilling industry professionals in sustainable practices, noting the growing demand for green consultants and eco-assistants in the film industry.

Schneider from the PACESETTERS project takes a broader approach, focusing on how the creative industries as a whole can contribute to the climate transition. He emphasizes the need for collaboration across different sectors, noting that the cultural and creative industries are often fragmented into silos. The PACESETTERS project aims to break down these barriers and encourage shared creativity across disciplines. One of the project's primary goals is to explore how artistic and creative entrepreneurship can drive the climate transition by developing new aesthetic strategies and innovative production methods.

The event concludes with a presentation by Sarah Dreyer, who shares her experience producing the feature-length film "Exit Pangea" sustainably. As a former student of the Film University Babelsberg, Dreyer used the knowledge and resources from the GEM project to create a green production. She explains the various strategies her team used, from using energy-efficient lighting and minimizing transportation to ensuring that all catering was vegetarian and waste was minimized. The production won the German Sustainable Film Production Award, and Dreyer emphasizes that while green production is challenging, it is possible with careful planning and commitment from the entire team.

In summary, the GEM project and the broader European initiatives presented at the event are all working towards integrating sustainability into media production and education. Through innovative teaching methods, interdisciplinary collaboration, and a focus on green production practices, these projects aim to reduce the environmental impact of the media industry while promoting positive narratives about the future. The event serves as a platform for networking and sharing ideas, highlighting the importance of collaboration in achieving the goal of a more sustainable media landscape.

Transcript of the 3rd Event / Season 3

00:00:02 Björn Stockleben

Smart recording is on. Well, that can't be wrong. Okay.

00:00:08 Sophie Tummescheit

If it's smart.

00:00:10 Björn Stockleben

If it's smart. Okay? Yeah, very well then. Welcome to our well, mid-term multiplayer event. This is called by the EU Agency of the Green Education in Media Erasmus+ Corporation project. So we are 9 partners from 6 countries. So from if I go from north to South. So we have Tampere University and Tampere University of Applied Sciences from Finland, from Germany we have the Institute for Art and Innovation and the Film University, Germany Film University Babelsberg as project Coordinator we have in Poland, the Jagiellonian University, Krakow, and Łódź Film School as partners. Then, further South, we have the School of Dramatic Arts from University of Zagreb. We have the National Kapodistrian University of Athens and the University of Malta. I hope I didn't forget anybody. Please confirm, my dear, consortium. Sounds about right, doesn't it? Yeah, so I'll give a little introduction to GEM. It's the beginning. So this is the program and after I've told you what we generally do, we show you what we very practically did at our last GEM, sustainable future camps. Then Marta, from Jagiellonian University, will give some insight on the aspect of green film production and the research we've done as part of the project navigating that. Then we invited 2 other EU projects to introduce themselves for so that we can do a little networking and see what are the overlaps and common interest between our projects. So it's Tobias Frühmorgen from the CRESCINE Project and Florian Schneider from the PACESETTERS Project. We're very happy to have you here. And because we also think it's very important to network. And you synergies between all those initiatives that arise or have arisen in the recent years in Europe regarding green production and sustainability in media. Then we'll have a short break and continue with the presentation of the activities of our sustainability office and our activities to support green production in teaching and student film production. And then we're very proud to present the Film Exit Pangea respectively, the producer of that film. It was a say that there's this film of Saudi Arabia and a couple of other students in I think 2 years ago. It is a feature length film and was produced in a sustainable way, and it won the newcomer of our award of the German sustainable film production Award the Ice Fogel. And because you will all be curious how that could happen, and how you this could make have been made possible as a university production, so that we will have a panel discussion with the Sarah Dreyer, but also with all other speakers from the program, so that we can discuss how to well network plan further activities, and how to improve and bring forward promote green production and awareness of sustainability in our teaching and professional practice in film production and media production. So, GEM, I always teased the name Green Education in Media, and the grand vision of GEM is bringing teaching in media study programs closer to nature back to nature. So because we think that sitting in concrete wall between concrete walls inevitably parts you, the sets you apart from nature and shapes that shapes your thoughts, your inspiration. So we keep in envisioning technical and dystopian futures in those rooms, while we totally blend out net nature and the future of nature, you know, thinking that's not entirely true, I know, but tentatively, we really ask ourselves why do we have to work here if we maybe could work here. And actually, this is what we did in the GEM's sustainable future camps you

will hear about in a minute. So in general we have 4 overarching aims which materialized in 4 work packages. So at 1st we have been looking at alternative media learning spaces, so kind of setting the stage for teaching sustainability and green production. How can we embrace nature as a context of learning? How can we create hybrid spaces? That somehow relate to nature, even if we are working in virtual spaces. So work package 2 was a lot of experimenting with things like nature walks, capturing nature natural assets and recreating natural spaces in VR, and somehow trying to break the barrier between the analog and the digital and well to find all kinds of new alternative media learning spaces apart from those concrete wall offices that we usually use, then in work package 3, we look at the environmental impact of our own craft. So if you do media design and production, what impact do we have on the environment? How can we mitigate that impact? How can we lower that impact? This is a lot about green production, and also about how we can give students the tools to already at the film schools, implement strategies of sustainable production. And we also have a lecture series where we also invite people from other sectors, from bio sciences and other scientific fields, so they can tell us about the, the impact all along the value chain that we might not even be aware of for example, we learned that the most efficient thing is in media consumption that you can actually do when you look, watch Netflix Disney plus or whatever you watch tonight is dim your TV set that will make a huge impact on the overall energy consumption of well, watching TV and streaming services more than optimization in the streaming algorithms and all that. So if you don't take away anything from today. But this would already be a lot the you TV set. So and what we get for we look at the outside perspective. So what can we contribute as filmmakers, as media designers to other disciplines and to the society. So how can we use our craft of storytelling to make an impact on the behavior, and on the envisioning of more sustainable, and nature close to nature futures. This is also the work package where we do these annual workshops. And in WP 5 we look into the perspective of the curriculum. So now that we got all these fancy ideas, how do we press this into the curriculum so that it really becomes an integral part. And that we take up on a regular basis new forms of teaching that we use new rooms and spaces for teaching and for embracing nature in teaching and learning. Yeah, so these are some screenshots or some impressions of workshops that already have been done, but that was very early in the process project. So this is in Pasahna, in Greece. Where students make a nature walk and collected concrete plans and assets in a digital fashion. And we are also did a workshop on the world building, for example, which is a lot about creating holistic ecosystem. So not just creating something just for the looks of it, but thinking of, how could this world that I'm building for a story for a film. How could this actually work with ecosystem biodiversity, and all that? These, as I already mentioned, are the charming and capable partners that help us researching into all the aforementioned topics and without much further ado, I tell you that we are co-founded by the European Union. Of course this is an Erasmus project, and very, very grateful for this opportunity. And what we did with all that money. You will see now, in a presentation by Sophie and Nicole, which will introduce the workshops we did in the 1st and 2nd year in or near Berlin, and in Tamere this year respectively.

00:11:07 Nicole Loeser

Great. Thank you so much, Björn, for this introduction, and I will now also give you, together with Sophie, a short overview about our Camps that we did in 2023 and 2024 and Sophie, you will know when I go further. Right? So I will start with our objectives. So how do we come up with new stories of environmental impact and digital solutions. And

how we actually envision positive futures. So in the camps we wanted to focus on iterative development and piloting of collaborative and interdisciplinary course concept. So that was the main objective, let's say. But then we also wanted together with the students, come up with a new narrative as a potentially important method for an acting change towards sustainable futures. So how we actually talk about these sustainable futures and what is necessary to yeah, have a kind of convincing narrative. And with the camps we also aimed to experiment with innovative combinations of storytelling, therefore, and then also to come up with new media formats, and how we actually use nature and as an inspiration, but also in that way that we think about its conservation. And yeah, finally, we want to publish these course concepts. So for the 1st year, the whole camp course concept you can have already found to be found online. It's it has open access. And Sophie, maybe also can share the link. And what we wish for is also that our course, ideas, and course alignments then get adapted by other institutions so that we can learn faster together. Our 1st one week workshop was called Sustainable Futures Camp, and it took place last June, in last year in June, and it was a kind of kick off not only for all the partners and students that met over there. And you can see the location it was really a beautiful place somewhere in one book into nowhere. So the next supermarket was 8 kilometers away and the location we found was extraordinary, because on one hand we had access to natural environment, but then also could learn about indigenous wisdoms from local people. And, on the other hand, we could also shape it a bit in our direction, so that we had, of course, Wi-fi not all the time. It was also sometimes a bit challenging, but it was a really great that we actually could bring all these different people from different schools in different countries to get a to learn about each other, but then also to focus on this new idea of how to envision positive futures together. And, on the other hand, also how do we inspire our experiences, or let our experiences inspire the new media development. So that yeah, also could transfer the positive narratives to a broader public. The workshop was kicked off by nature walks. We had 4 groups, and every group had to focus on a certain element. So also to learn about the of course, the village that we were in and it was sometimes also guided so that we could learn about all these diverse ecosystems. On one hand there were kind of guided experiences, so that the students could learn about a local flora and fauna, but also had some hands on activities to identify and study native plans. And of course this was combined with reflective discussions to foster, then environmental stewardship and community building. And I guess, yeah, the 1st kind of tours were really exciting. We also wanted to have an exhibition afterwards, but that couldn't be developed, because time was too short in the end. Yeah, the nature works, as you can see, some impressions here was very diverse, and everyone could find something different. So we had a huge archive of impressions and of pictures afterwards. Yeah, the challenge, as I was mentioning already, a bit for us, was really on one hand, how we yeah tell interesting stories about climate change and also about solutions. So how can we actually use resources in a different way? How can we reflect green production and so on. So be focused on that? But, on the other hand, also we looked into nature and biodiversity strategies. So how actually, we can protect and restore our natural places. So what we did was we used not only discussions, but we used also then the art for future slap method. I have to go something further exactly. And here it was more about collaborative workshops, future prototyping work, building designs, print, and of course, the prototyping of tangible representations, and on one day there was a kind of visioning workshop. So where young people wanted to live in the future based on existing solutions. So we gave them an archive so that they could learn and implement these ideas into their own stories. And then, on the other hand, when they shared their visions, they

also thought about target groups how they would like to would have liked to tell the stories about these visions, and then they also came up with new media formats, which was really amazing. I will show you also to outcomes. But we had, I think, 10 groups, and that was really interesting because some developed games for kids. Others had film ideas so film scripts and others for instance, had also graphic novels. So it was really interesting what all these students had in mind to really come up with great and interesting concepts to reach their target audiences that they had identified as good multipliers to yeah, bring change into societies and really support a transformation. So the group results just here, as a kind of summary, you have these sustainable media prototypes. As I mentioned. There were some platforms, education tools. Yeah, some also developed. I think a workbook. Then, of course, we had some interdisciplinary solutions how to actually create immersive experiences for people, so that, for instance, the very complex issues of ocean conservation could be transmitted and all was kind of aligned to positive future scenarios. So I think, the kind of doomsday narrative we avoided a bit, but focused more on ideas how can we actually talk about circular economy models or sustainable living practices. And of course, the students were very visionary. So we also had this idea of a fungus city that was envisioned. And what was really amazing for me to see is that this environment somehow really made people not only aware of themselves, but that in nature really inspired the young people, and most of these prototypes were then also created in nature or nature was used, for instance, for the films that they made and it was really wonderful to see how this cross cultural collaborations actually could help them to also tell narratives that are not only locally based but also see the full picture of the global trends when it comes to climate change and therefore the sustainability challenge that we face also on a global and also on a local level. Yeah, our learnings after this very intensive and very interesting and inspiring week. We had some outcomes on one hand. It was amazing to see that we had these sustainable media practices. So students learned very fast how to implement these existing solutions that they came across, and how they also were inspired by their own visions of positive futures, and how this actually then fuel their ideas for the media concepts and prototypes that they have created. If we would have a bit more time, of course I think the outcomes would be more tangible. But so far, I could see that really, this course media integration really, could I amplify the region impact of green messages. And yeah, if we could really spread all these ideas to real audiences. Then I think, we really could have compelling sustainability, focused narratives. And yeah, just to maybe sum it up here. What was really important was this intercultural but also interdisciplinary collaboration, because we also had some speakers that gave some scientific background information which also helped to get an understanding of the situation we are in as humans and that we have to be fast to come up with solutions, and therefore also need the relevant communication tools and channels and to learn new social practices and all kinds of live styles, let's say, but also in all stages of media production, and I will hand the microphone now to Sophie to give us a glimpse of our Camp in Finland.

00:22:16 Sophie Tummescheit:

Yes, the Camp in Finland just recently took place. So it's all very fresh and not evaluated that yet. We went there to Tampere, in Finland, with a total of 32 students and again to just from all the 6 countries. Well, the location was a Sports Institute in beautiful surroundings. There were like it was surrounded by lakes and nature reserve and woods. And in our backyard was this big rock to sit on, and it, no, it was kind of great, and it was all regular meeting space. We copied some things from last year, but not a hundred

percent. So as last we did the walk. This time we did not a nature work, but a data work also in nature. And there were 6 groups that went out on a mission to collect data in the surroundings. And yeah, we make sure to mix them internationally to make sure that they get to know each other. And well, they come back with a lot of different results. Here, just a few examples. There was a group that came back with a lot of flowers, another one with stones, others just with stories, and they also presented it in very different ways. like more exhibition style or in form of computer graphics. The challenge this year was basically to use storytelling to transform data from the field of agriculture and nutrition into impactful stories that fostered to us change to a sustainable future. Methods, as I said, a little bit as the year before, it was also a 4 day design spent this time, but this time it was more up to the individual groups what further methods they use. And we had 5 of this groups with different topics. The 1st one was interactive data visualization, then artistic data visualization. One called data and move, another one data fiction. And the last one concentrated on data, visualization and virtual reality. At the end they all came up with a functioning prototype. I will show you. Yeah, I will show you. If tutors are present, you feel free to jump in and tell a little bit more about the projects because, yeah, they know more about the backgrounds. I was more the observer. So this is the result from the interactive data visualization group. They created an immersive supermarket where you can navigate through a virtual 3D world. And add items into your into your card and check out. You get a detailed report or the carbon footprint of your card. Second group, the artistic data visualization group, they did an art installation. They collected a lot of results for the Finnish supermarkets and yet transferred all the data from it to sheets. And then, they really calculated how much plastic is consumed with that. And the whole installation shows or wants to raise awareness of plastic pollution and consumerism. Yeah, that was in the gazebo also in our backyard and there this you see the resides hanging. The group data and move the desktop motion animation with little origami figures, and they were focusing on the increasing number of ice days on the finished legs or in this case, especially on the lake that was just next to us and they told about the copy and risk of the increasing ice. Then the group data fiction which was led by Nicole. They did an interactive walk through experience with lot of challenges for the visitors, and everything was accompanied by a TikTok account, and they put quite a few videos on there. It's worth to look at it. You can find it. Even if you don't have TikTok under at water underscore. Slaid 7. So the Virtual reality group did, and we are experienced caught behind our backs and I think the meaning was, when you turn your back on nature and the forest it will turn bad and we invite some via repercussions. So it was. It was like what you see in the experience when you turned your back. the nature turned in a bad way. So yes, as I told it's just a few weeks ago. We have not evaluated the course, or the documentation is ready, but when it will be you will also find it on the on the www.gemproject.eu side ends. Yes, for next year we have a plan, not a detailed plan, but we know that it will take place in Greece area, and our host will be the National and Kapodistrian University of Athens. Probably around the same time end of May, mid June, and we are thinking about topics are still in the innovation space, but it will be around biodiversity and water and reduction, which means also reduction in the media. And there are some tendencies towards audio. Yeah. And now, if we have time, I think we have few minutes you would like, or audience, or you, if you can think of any topics that you would like to have addressed or you just think that should receive more attention in Media. You can talk more right in the chat.

00:30:07 Björn Stockleben

Carla is asking whether there's a possibility to take a look at the VR Project and the Interactive Supermarket Project. So we will make the documentation available. I cannot promise that we will upload the full VR project, but maybe a 3 60 video experience of it. So because well, we'll see. We are seeking into making them available, and also clarified that with the students in advance. So it will then also be published on the website. Maybe a remark from my side. It was interesting that all, although we were in the midst of most beautiful nature when small problems arose like, If we but we don't have electricity outside. But the wireless land is not so good outside that the people were very ready to quickly go back into the building. So and one takeaway for me is that we should question why we always ask the question. Why should I go outside and that the default is being inside and not vice versa, especially in summer. So, asking the question, why should I go inside so and that could change the way we teach. Because it's if you take it for granted being inside well, we won't reach our goal of really embracing nature. And it's often like the power cord or the wireless land that keeps us attached to buildings, and maybe we have also in media sometimes to get acrosses come over the need or immediate need for a wireless land and look for other possibilities to present and design. We have a more suggestion of issues, Carla said. Loss of biodiversity and other planetary boundaries as topics. That also makes a fine data visualization topic. By the way and what environmental? I have? Yeah. Nicole asked the questions. Yeah, Carla, would you would you like to lose a sentence or 2 on this. Have you been working on this? Maybe even.

00:32:41 Carla Schulte

I'm not a filmmaker. I'm more a net worker, but I know that biodiversity, unfortunately, is not so in the mind of people. But it's bigger problems that climate crisis in case. So it would be important to speak about it. Yeah.

00:32:57 Björn Stockleben

Yeah. I guess an avia is also a good place to talk about biodiversity. And this is also a takeaway from the con from the conception of the courses. We really try to also embrace the problems and characteristics of the place because they are all very distinct. They have some things in common, so we all well, for, as a matter of fact, all 3 regions Brandenburg, Tampere and Avia highly in danger of forest fires. So, but then the biodiversity is also very, very distinct and different. So biodiversity but definitely will play a role in the avia workshop. Marta said, us lost as a change involves lost and transformation.

00:33:50 Marta Materska-Samek:

I'm wondering if we can go a wider and just discuss how the condition are changing, how we deal with the change and to what? Because the lost is embed in our nature. Yes, something is dying. Something is evolving, transforming. So the process of change it's also a kind of interesting topic. And how to how to depict it, how to deal with it, how to go with the change, or just navigated the change because it's yeah. It's a multi-lateral.

00:34:33 Björn Stockleben

So. Well. Now, now we have a lot of hands here, Nicole.

00:34:37 Nicole Loeser

Yeah, I liked that what Marta said, but maybe we can combine it with the water element. Right? So, because water is changing all the time. It has all these different agriculture. I don't know the word in in English, but you know what I mean. And we could. We could

maybe also find some interesting narratives there that we could use for yeah, speaking about all these changes that are.

00:35:08 Björn Stockleben

Carla pointed again. I posted a link on the Planetary Boundaries topic which definitely is worth looking into, and put forward the notion of feeling about climate crisis. So not also. Well, probably. It's a good idea. Not only depict that biodiversity, but also so how it resonates and what it makes with mankind, and how our human feel towards it. Would suggest, unless there's another urgent or very fitting question or answer, that we go on with Marta and well, Sophie has a remark.

00:35:54 Sophie Tummescheit:

Just one more slide. I want to.

00:35:55 Björn Stockleben

Yes.

00:35:56 Sophie Tummescheit

Oh, before yeah. Everybody goes just to inform you that if you want to get informed about further German follow us on Eventbrite cause. There'll be post every one of this, and we planned for 3 Green Screen Lectures each semester. Yeah, that's what I wanted to say.

00:36:25 Björn Stockleben

Yeah, we have this lecture series that we jointly organize. Yeah, it will run at least for 2 more semester. So in the autumn term and the next spring term, and it revolves around topics of green productions, sustainability, green storytelling. And as it happens, that is the same work package that Marta is working in researching on the state of green production, especially in Poland, as far as I understood, but also beyond. So this might be a very fitting moment to give Marta the screen to continue with presenting her work.

00:37:09 Marta Materska-Samek:

Okay, as I'm not a regular zoom user, I will try to. Yes, share the screen.

00:37:20 Björn Stockleben

And we'll do our best to assist you.

00:37:23 Marta Materska-Samek:

Okay, so this is, yeah. But I share the screen. And I need to. And... it's full screen. And then, okay, should work. Do you see it?

00:37:44 Björn Stockleben

Yeah. Full screen.

00:37:48 Marta Materska-Samek:

So our was our work was covering work package, free environmental impact and media design and production. However, as Jagiellonian University is dealing with media management, which is, deeply embed in policy and evidence based policy. We did some research which now is serving our decision makers to implement some tools and bet some action into the individual policy to make it more, to make the industry more green.

However, the whole work package 3 is quite complex. As you know, we are organizing environmental expert events. So we had already free seasons of that 1st were conducted together with JU and Babelsberg, and it was a kind of interaction to green filming. And then we had a series conducted by Babelsberg dedicated to green screen series. And then now we had the season curated by Tampere. So we have a different curators of the of the series, and we are covering different topics on the of green filming and the green media. And having these resources and presentation we are doing a transcript of this expert events which serve us as a kind of source material for papers and for further discussion and Zagreb, and to Łódź Film School is working on the collection of student good practices. And we are working also on the tools which will help us to implement more greener practices. However, there, one of the most tangible outputs of this work package is an article already published and how I should can move it. This yes. We published a paper which is quite popular as it's at it covers polish film industry and describe what is going on our market and how we can progress in implementing green practices. So at this papers, we are just describing the green screen practices. What are the guidelines? What are the action already implemented and how to promote an environmentally sustainable approach to film production. And then we identify challenges of green film production related to the market regarding to the existing infrastructure, because not only the will is the main factor of implementing some change, but also infrastructure and facility. So if the whole economy is not prepared to implement green practices, and the ecological production is more expensive. And this is also the question of the cost, because our economy is based on the value of the money. So the question is, how much we are able to pay for the green production as well. So this is also one of the challenges we are facing. However, from according to the time it's more accessible. It's less expensive. So we are doing a big progress in implementing such tools and looking into the background of green filming we all know that the climate change and greenhouse effect are key features of the dialogue. Yes, we have the green deal, the European green deal. All industry is aware of its impact on the climate change and try to reduce waste, and especially when the film industry is said to be the second one to be killed after the fast fashion. Yes, and we already see that some action toward the fast fashion are already undertaken. So there is a big wheel to reduce the harmful effect of a film and industry as well. And if we take the green filming and sustainability term, we need to look into the agenda 2030 goals, because the sustainable film production is not necessarily understand as a green film production, because the sustainable film production covers also the topic of the social and other sustainable approach. So the green is related to the climate change. However, the film industry has also some other issues related to the education, to the gender equality, and other challenges which were not covered by our project. But I think, can be the new topic which can be covered by the new project. Yes, as we are only focusing on the climate, aspect. What is what is now on the topic. Now on the topic we have the ISO standard for the circular economy. The circular economy is now described and standardized by the ISO is International Standardization Organization and according to this norm specification, a lot of industry can be covered and can be asked to respond to this specification. And we have also this ESG reporting for the big companies which will cover the broadcasting companies. So the big, the big companies need to not yet the medium and small scale enterprises. However, the company needs to report ESG reporting on this stuff. So this is going according to the All rules. The film industry is not separated from the whole ecosystem, and a lot of movement in the European industry is in the topic. So film industry has to be prepared as well for these changes. If you look into the practices there is a lot of practices which support the green filming in in Europe and

one of them, one of the practices are a kind of a guideline certification system, the reward system enhancing, and implementation of the green filming, but also the media and the Visual Action Plan said that the goal to help the film industry become carbon neutral by 2050. So these are leg regular practices and tools which helps film and industry to transform into more green and sustainable. And according to the global movement and European movement, we are looking also for the national initiatives and national initiatives are more related to the decision makers and to the National Film Institute as the film industry is financed from the public sources and then from the other private stakeholders. So a lot of public bodies introduced already carbon calculators to measure and manage carbon footprint of a film producers. They introduced training programs to educate and guide film makers on sustainable production methods. They introduced standards and certification to promote sustainable practices. However, they are not harmonized between the countries. and it can, bring a lot of problems for the international co collaboration and film co-production as the co-production is seen for a lot of markets as a source for technology and talent transfer in Europe. So to implement and such tools we need to look on the kind of transverse and harmonize tools to not exclude some countries from the international collaboration. And in the case of Poland we had this political change last autumn that during the parliamentary election we change our government because the last one was not totally decided to support a green deal and more sustainable practices. So all the actions toward the green filming were conducted bottom up. I think it's a unique case that the industry itself, the Polish producers alliance, the film local governments, film commissions and filmmakers decide themselves to push for more green practices and it's not the top down approach. And we investigated this this phenomenon, because it's not the general and common approach in most of European countries. In France and in Germany all the changes were implemented by the Government, by the by, the Cinematography act or law and were rather top down initiative. And in our case it was it was bottom up in. Now it's a change, as we have our government on our side and we are collaborating to drive a new audio visual policy, including triple transformation, the green social and the digital one. So the full collaboration between the industry stakeholders and the policy makers will be established. We are now negotiated how this collaboration should work because the goal of this green film production process is to not be left behind. As we are, the as Europe is divided in a small European markets. This is the link to Tobias, we need international collaboration. We need international harmonization of our rules and of our approaches. So the direction is that we will have a kind of transnational international standards, which will guide all the countries to work on the green way, and will not abstain some country from collaboration. But there is a lot of obstacles to sustainable production, and it's difficult if we have so diverse low capacity, cinematography, to promote and to go through this process. and mainly because there is a lot of structural and policy obstacles, and the green filming is more expensive than the regular routine filmmaking still, because the solution and tools used in green filming are not on the regular use, and in some country they need to be promoted and established. There is also a time constraint looking into the sustainable solutions the producers state that it's easier to go the routine way than to look into more innovative and green solution, especially when this green infrastructure and green solution are not available on the regular basis and need extra expenses in time and in money. So even there is a will even there is understanding. We still need a penetration of the of the solution and tools we can use to for the green filming and looking into how the public film policy promote and implement the green solution we are following this this trend, but we need to look for a kind of a harmonized approach.

Every country is working on their own film, founding out act on their own way, and this will provoke, or in this will have a consequence in a deeper division between the countries and lower collaboration. So this is the main risk if we don't harmonize our efforts in a in a green filming and it's already identified by European Commission as the European Commission, and now EU has selected the Climate active and supplier to just draft and elaborate the plan European carbon print calculator for the film industry and this carbon print calculator. And it's nothing new. Taking into account that there is a lot of carbon print calculator for the film industry, however, it should cover every territory and should involve a transparent methodology feed by the national conditions, and solutions in this calculator. Because every country has different kind of energy, has different approaches and acts in different way according to them. And the green solution so it will be a kind of plan European tool taking into account the regional specific city of small film market. Then the deadline. Yes, the of this output is predicted for 2027, because it needs a lot of research and development in in the system of tracking the carbon footprint, the elaboration of the of the tools, such as certificate of provenance and EU passport to not import the carbon footprint from outside the Europe. And it's quite complicated. And I think it's all. So it's quite complex. We understand the topic. However, there are different obstacles and to in in implementing that green filming we need to take into account that the European film industry is based on the small low capacity country cinemas, cinematography. So it's based on the kind of cultural diversity but according to the law and to the policy, it will be better to have harmonized, and use the same tools to facilitate co-production and transfer of the skills, talents, and creativity. So this was the impact of our study. We are still ongoing on different aspect of the green filming, and we will update you during the next seminars. As this grassroots, initiatives are really heard by our government, and we are preparing for some updates of the of the Film Act and audio visual policy. So, thank you.

00:58:32 Björn Stockleben

Thank a lot, Marta. You also put forward a number of challenges, which also, well, yeah, we can give a hand. Let's say, yeah. So, there's my virtual clapping hand. Yeah. So, if I understood correctly, then so you put forward some challenges which are actually, you are due to our fragmented market in the European film, and TV industry. So, if I understood it right, this is one of the challenges that the CRECINE project represented here by Tobias Frühmorgen is going to address, and maybe your presentation, which is on the schedule anyways, would be a very fitting follow up to all the problems that Marta now post. And now from you we expect nothing less, but the solutions, would that be fair.

00:59:37 Tobias Frühmorgen:

Absolutely.

00:59:40 Björn Stockleben

Okay. Then the screen is yours Tobias. Thank you for being here.

00:59:43 Tobias Frühmorgen

Yes, hey, everyone. I'm gonna present. I 1st share the screen point. Okay. I'm gonna present to you... Wait, wait, wait.

01:00:02 Marta Materska-Samek

Yes, it's already. Yeah.

01:00:03 Tobias Fröhmer

Yes, yes, I just wanted to see you because you were all hidden. Otherwise I'm speaking to only a black wall. I wanna present to you the some findings from the CRESCINE project and present the solutions to all the world's problems, including everything. So the CRESCINE project I'm calling my presentation, navigating the transition challenging in the sustainable film production, and the and I am part of the CRESCINE Project which is a project that has several partners, as you can see here. From a bunch of countries. European Film Academy, Munster Technological University, University in Lisbon, Lusofona University, is it Mache du Film, and so on. PÖFF in Estonia. Yes, and we are looking this Horizon Europe project is looking at 7 small film industries within Europe, and these are these ones, Croatia, Denmark, Estonia, Flanders in Belgium, Ireland, Lithuania, and Portugal. And we are looking at these industries on different with different aspects. Not only the green aspect that we're dealing with today, but also audience research, skills research, VOD, we have a lot of data collections, blockchain AI, the whole, the whole thing of giving providing results for the film industry of these countries. Why, for example, why their domestic films have a certain have only a certain rate, or why comedies work better in Denmark, and so forth. Focusing on our topic on green innovation or green we did some. We started the project with doing some mappings the results were coming from interviews with Green Consultant. I'm a trained green consultant as well. I'm leading and co-leading a green consulting course in Portugal we had so these results, these findings are also coming from the experience from these training courses, and we had some interviews with industry, sustainability, experts from the industry, and also off the record interviews with people from the industry. And we also did, of course, desktop research. And we presented these findings. It's an ongoing project. Those who presented these findings last here in PÖFF in Estonia and at the Berlinale, and now I was in Canes at the Marche du Film and presented them there. And it's growing, and we see a lot of attention. We see a lot of interest and a lot of insecurity. I'm always showing this thing here, but I don't think that our group here needs this. We are all aware of the 17, I show this because I wanna refer later to a point I come wanna come to a point later where I say, we have to not only look at the CO2, the CO2 reduction but also look at the bigger picture of the whole thing. And I think this project is what I what we've seen today with going out into nature. And all of this is a very good example on that, avoiding the tunnel vision only on CO2. We did a questionnaire last October amongst the industry and the and the results showed that 50% of the people who answered that machine questionnaire said, yes, we need a transition of the European film industry towards more sustainable. We need reduction. We need fair labor practices, and we need sustainable sourcing of material. 50% I mean, you know how to read these statistics. That also means half of the people are not interested in this topic, which is a fairly high number actually, because when you talk to people, yes that's interesting, but when it comes to the real changes and implementing the changes, that's where it touches, like not only money and transformation of the whole industry. My biggest or one of the big question that we always encounter when we speak about this super transition is actually what is what? At which level are we looking at? Are we looking at the project perspective. So this project has a certain tons of CO2, or this project has a certain overhead, and this and this, or are we looking at the company, at the production company, or in maybe in our cases the university that that deal with these projects? Or do we look at the ecosystem. For example, in the CRESCINE Project these we have 7 ecosystems that are very different at which level are we looking at this topic. And then

comes the immediate question, whose responsibility is the sustainable production? Whose responsibility is this transition? Is it the government? Is it us? Is it the line producer? Of course you know that it's everyone's. But which level do we need to talk. Who's deciding at which level? Challenges that our creative industries might face in this transitions? I'm going to go through a bunch of aspects here that without having all the answers, but maybe at least some. So we have 1st point a certification system. You know that there are several in Europe, several different certification systems in place, for example, green film from Italy, Ecoprod from France, a bit more detail than green film. Then we have green motion. Then we have Albert, and we have 5 more, even local ones. But what happens which one should you choose? You know, for example, Portugal does not have an implemented certification system. So which one which one do we choose in our course we have now made, we, we let the participants decide between Ecoprod and green film. Actually, because Ecoprod is more is a bit more detailed, and the actual file is also a bit like works a bit better. But I mean, that's not a real reason for choosing that, but which one are we going to implement in the future? And speaking of the real future, which one do we implement on a European level, you know, which does fit to which country? Next point the education on the professional development. Obviously, there is a big, high need of train the trainer programs, the need for upskilling industry professionals in the sustainable practices is highly wished there is our courses are full, the courses in Stuttgart are full the courses in Munich are full people want that either in different. They want to become full green consultants, which is a full-time job, or they want to be Eco assistance or they want to be line producers with a hand with an add on as with more green aspects. There is a high demand for that, but if we are speaking but up skilling, we also need to see if the film industry is actually supporting that by giving the people the time free, or if other financial resources are coming, because over the costs these courses are costly, the numbers are not secret. The cost for the Stuttgart course is 15 or 1,800. Now I don't. I'm not sure. 1,500, I think. So that's the money that you need to invest. It's not a lot of money, but it's money, and there is also the time invested, because this course is like 5 months, for example. Then, if you have become a green consultant or an ecosystem, or whatever you want, what is actually the role that you have? A are you an advisor for budget or do you have executive power? Of course, none of the green consist, and the green consultants nowadays has any executive power. You can just say, Hey, people, please, can we? I mean on a better level, maybe, than this. But this is the role that people have now at the time being a green consultant. May this should this change. I'm not sure, because this would mean that line producers and producers would need to give up power to this, but in some way we will need to find an arrangement for this. Transportation. You know that all of this is the hottest hot sector in all of these green reports, and we need to look at this very carefully and very detailed. I always start the example with trying to rent a rent, the get the rental car in Berlin, and you see, that has been during the Berlinale, February 19 here on top. So I'm going to choose for 2 or 3 days I have a bunch of cars available, but I have zero cars available in Berlin Hauptbahnhof when I want to have an electric car, and the same happens, I cannot even read, this is Zagreb airport and I have 0 available in Zagreb of airport. This is Romania, I think and Brussels in Brussels I have at least 3 available. This I've just made Berlin one available. And I mean, I don't know if you want to if you really want to use if you really want to rent this super luxury lexus car for giving to a production system to pick up the actors, you know. I don't know if this is the right choice. So you see, in short, there are so few electric cars available, even if you want to rent one, they are still not available. They are more expensive than the gasoline ones, so we need some. I don't know who's responsible for

the sustainable changing. You know the transition, of course not the rental car companies, but at least we need to take them into responsibility. So we need to improve the transport sector. We need to address the local transport involvement. The because a lot of a lot of the things that are now done with the car, especially in the in a city like Berlin, where the public infrastructure of transport is very dense, and that and you can, you know we can, they can, people can use the metro instead of instead of individual transport in order to transport things. We also need to encourage the use of bikes and scooters, of course we might think of tax incentives on a on a, on an employer employee basis for sharing policies for greener commuting options which actually means paying them. you know the Deutschland ticket or something similar in in the other countries and another aspect that I recently found out, because I had a chat with a friend who who's promoting this one person's crew. You know that where one person is actually a camera operator and boom operator and sound recording. And you know all, all in one place. And actually, I thought about that is actually also one saving a lot of these, because you only have to transport one instead of 3 or 4 people. Okay. next point on Marta already spoke about that, the CO₂ e calculators. I think you all know that the a stands for equivalent. Yes, because it's along the CO₂. But it's also the other guesses. But we have the CO₂ is like the basis of calculation for this. So we need to harmonize the efficient factors and the calculators. Is and we found out that, like, you know, beef in one country has another implication of CO₂, then in another country. So this is not really working because it actually, it's the same kind of beef, knowing that the beef is transported around Europe from birth until being slaughtered, you know. So that is quite absurd, that it has different CO₂ implications and there is one climactive which will be ready in 2,027. It has been announced at the Berlinale 4 months ago, 4 months ago. Climactive will be one will be the future European. CO₂ calculator. Great ready in 3 years. What do we do until then we're going to continue with a scattered CO₂ calculators that are now in place, some cost something, some cost nothing, some work really good, like Albert, some work really bad, which I cannot say because it's recorded. No, I mean, you know everyone who's using that knows which ones are working and not on a professional level. The data that these calculators are producing are highly relevant data. You could use this data for so many things. But it's in a closed environment. The companies don't give out or don't share this data, and there are already there would be solutions of anonymizing this data, you know, mixing this up like with telephone companies. You know that when you have 5 people in, when you have the example of 5 people that counts as anonymized in normal reports, so this could work here as well. But we don't have a like a European or a general solution for this, even though the data is highly valid. There has been a in last November from the European Audio Visual Observatory, there has been a questionnaire about the labels and the certificates, and they asked 9 labels, and they got back 6 questionnaires and one had data on the emissions factor and 5 didn't have any data. So basically, this report says this data is just going away, and nobody's using it in any form, even though it would be so highly relevant data that we could use for improving. The carbon management we need to think about reliable CO₂ compensation levels. We need to avoid greenwashing. But we also need to see how can we recognize when something is green, washed, or not. I have no idea if the €2 that Ryan Air is offering me to pay, you know, at the bottom, between all the seats changes fees. If this is actually a valid compensation level, or if this is, if this is greenwashing, I have no idea, because there are no real, trustful, or at least for the public, not useful labels that they can rely on. And, as I said before, we need to avoid the carbon tunnel vision. We need to think about something beyond the carbon emissions. For example, these ones, the social aspects. What about 4 days work week for film

productions? I think no one's ever tested it, and I mean, people would be in Portugal. People would be happy if they would have a 5 weeks, because normal is a 6 days weeks work because we shoot here on Saturdays, normally, and or if the 10 plus one hours which is the you have to, you can work 10 hours per day and 1 hour of meal time. If the film productions would be within that range at least. So what would be the impacts on the film industry or a veggie day, I think other countries are much more okay, like I speak about the northern countries with vegetarian food, but I mean, there are countries, for example, Portugal, that are that have culturally very problematic to say, you have to have a veggie day and then with students, veggie days mean spaghetti with tomato sauce. And you know that's also a very cheap solution, but maybe not the best one. Another aspect that has been that has been looked at the content creation. So the green storytelling that is a topic that is always a bit, you know. It's like a hot potato, I say, we say in German. I don't know if this better for works in English as well, because what does it mean? We at the level already, before it goes into production already at the level of the creation of the story end of the of the of the writing of the screenplay, we could think about implementing green aspects. For example. We always say that cars in films it's the metaphor cars in film mean freedom that goes for any film that is there. And why is that so? And why do cars actually mean freedom? We've gone away from that. Cigarettes meant freedom. But I mean cars you know, so at which level should this start, at which power should a green consultant have on the story? What about the freedom of art which is in every constitution. So there are a lot of discussions here, and I think a lot of rejection future rejection also.

01:18:11 Björn Stockleben

Tobias we have to come to a close with your presentation.

01:18:12 Tobias Frühmorgen

Yes. Then I jump over the finances and oh, no. Okay. 2 more. So the budget implications. We had talks with producers that say, why should I invest now in technologies that are run out of that are no longer valid in 2 or 3 years and I will not do that even only when you force me. And we know that, for example, shooting green. Let's say let's call it general like this costs you 8 to 12% more so who's paying for that? So again, whose responsibility is sustainable production? It's ours, but there is a lot of open questions. Still Budget, wise and many more. Thanks.

01:19:05 Björn Stockleben

These are very valid questions especially given that our industry is not., let's give that virtual hand. I love this. So yeah.

01:19:15 Tobias Frühmorgen

The sound is missing of the hand clapping.

01:19:19 Björn Stockleben

So, and that it's...What did I want to say? Yep, the industry now comes from a time where we really had a high production phase. So where there was a lot of money, and now it's already notable that not that much money is anymore in the film sector, and we are probably see a little bottom period. So a valley for a at least 5 years, and of course, it will be more about cost cutting now and green production will be an issue. So it's very valid to ask Who's responsibility? Is it so? Is it the State's responsibility? Is it the responsibility of

Production company of the Commissioning company? Of the line producer? I suggest we have a 5 minutes break before we continue with Maike and Sara. Yeah. So just breathe. Have a water.

01:20:39 Marta Materska-Samek

I think. Florian will join us in the some minutes, as I have. Yes, the question, if 5 is still possible, they will join us in 5 minutes a short presentation of the PACESETTERS, if we have still time.

01:20:55 Björn Stockleben

Okay, it would. Yeah, we can fit that in. So then we have less time for discussion in the end.

01:21:01 Marta Materska-Samek

Okay.

01:21:01 Björn Stockleben

Think that's fine, but let's still do the 5 minutes break.

01:21:05 Marta Materska-Samek

Yeah.

01:21:06 Björn Stockleben

So we meet again at 2 minutes past 5.

01:23:20 Maike Reinerth

Just a quick question if anyone still in here can you see this slide? Probably.

01:23:25 Marta Materska-Samek:

Yes, I can see it's perfect in green.

01:23:28 Maike Reinerth:

Thank you. I just leave it on. So, nothing. can happen anymore.

01:26:05 Björn Stockleben

Oh, yeah. Maike is already in place. It's 2 minutes past 5. Let's see. Yeah. how many people are already back from the break and I see some live on the screens. Yeah, quite some.

01:26:29 Sophie Tummescheit

I was very punctual, was exactly 2 minutes past 5.

01:26:34 Björn Stockleben

Yeah, you did. Well.

01:26:37 Sophie Tummescheit

That what I wanted to hear.

01:26:41 Björn Stockleben

You get the green clock award. So a producer stream. Okay, before it escalates. I welcome Maike, Maike Reinerth. I was a bit puzzled because Sara is gonna come after Mike is Sarah Dreyer. Why not? But well, Mike Reinerth. You are sustainability officer, or well, you run the officer for sustainability in teaching in the Initiative Grün at the Film University and where we invited you because it shows a very good practice example how, together with the students, we can change the way we teach and how we can support students in very practical matters of green production. So Maike the screen is yours and the microphone as well.

01:27:47 Maike Reinerth

Great. Okay, so can everybody hear me? Quite well. Great. Okay? So 1st of all, sorry for being late. And yeah, just joining just now. I was in Berlin, and while I didn't while I missed all of the presentations before I picked up on the dense info the structure in Berlin from the last speaker. And yes, I can agree, because I'm late, because there's a big security conference, Ukraine conference at the moment, and Vladimir Zelensky is there. So everything is closed, everything is closed down, and public transportation is interrupted, etc. So that's why I'm late because I couldn't join from the train. But now I'm here and I'm very grateful to be able to give you a short overview of the activities at Film University, at the office for sustainability, teaching and Initiative Grün - the green initiative. That is student founded and student led, and I'm especially happy to be speaking before Sarah Dreyer, because she's one of the founders of Initiative Grün and has now gone into the industry. Hopefully, also spreading more green ideas. So this is an intro that you probably don't need why, an office for sustainability in teaching. We all know that ecological and social justice have become industry topics in the film and media industry thankfully fine and finally there are cycle and planetary necessities to address these issues. And also do this at film universities at film schools. And already integrate aspects of ecology and sociology in the film education. Then, as you might know, there have been standards. Ecological standards issued for German media productions. Last year they're mandatory now so this is a discussion that's going on, and that's become quite prominent at least in Germany at the moment. And then there's also an ongoing discussion on the working conditions in the industry which addresses more the social aspects of social sustainability. So it's time to address these aspects at film schools as well. At film university as of last year I'd say we, we had some offers, some classes, some initiatives, some research and teaching projects that already worked towards ecological and social justice in the media industry. I've listed a few but they were quite they were not coordinated and at different points in in our film university. I won't say that everything has changed since these 2 initiatives: Initiative Grün and the office for sustainability and teaching, which was founded only last year. Since these initiatives has have come into place. But the goal is at least for the office for sustainability and teaching to address some of these issues and bundle activities. So Initiative Grün has been in place since 2018. So quite a long time, and the office for sustainability and teaching is one of the results of a very and very active student group and very quite many student activities who demanded to have classes and have more content on ecological and social issues in the industry. So these belong tightly together. First, just a couple of words about Initiative Grün. It's an initiative that started as a completely voluntary group. Maybe Sara can also speak to that later. If she, if she has time, or maybe in the discussion she can complement what I'm saying. So it was a completely voluntary group of students. As I said before, who somewhere between professionalizing their abilities and an activist approach gathered to introduce several ecological measures and advocate for ecological and social issues at

film universities. There are several under groups, working groups of initiatives. I won't go into detail with all of them, but I have some more slides now. The other initiative is the office for sustainability and teaching. As I said before, the goals of the office include to coordinate in house activities, to bring people together, do some networking in our film school also to advocate for and to help establish sustainable curricula in the study programs. And there has been progress since last year which I'm proud to say, but I think that also Bjorn Stockleben can be proud to be one of the study programs who have also already integrated ecological aspects into their curriculum. Then we're doing this Friday, we're doing a teach the teacher workshop to educate our teachers at film university about ecological teaching *Bildung für nachhaltige Entwicklung*, which how is it, how it's called in in German and then there's also a big aspect of the office is to network with other film schools. And you see the little green or white on green check mark behind these 4 bullet points. So we've at least not only worked towards these goals, but completed some of them at least partially. And then there are 3 more bulleted points that are concerned with the future of the office for sustainability and teaching. So we are now trying to work towards a more eco-friendly production system at Film University. There's also the possibility of a sustainability strategy on the horizon. Not certain yet, but that's something we're working towards, and also the possibility of an eco or sustainability audit in the near future, but still in the future. So I'd say that from a few little sparks that have become quite vital. We're now turning towards a more strategic approach and I hope to be able to yeah, to work at film university, or to work together with my colleagues towards these goals in the near future. So one of the things that Initiative Grün. The student initiative has been able to implement is a so-called green money pot they're going to top. This is a funding system where final films from final film projects from students of university can apply for a lump sum of now 500 euros per project. If they show that they're doing they're implementing at least some measures to work more resource friendly and ecological, with their films. And a couple of recommendations of how to do this.

Is in the Green Guide, which is kind of a compliment to the ecological standards, if you will. But it was it was there before it was German law to comply to with these standards. So, the Green Guide is a recommendation handbook, which was also almost completely built by the students themselves, and which was one of the 1st things they actually did in the Initiative Grün when they started working in 2018.

And then we also have the so-called green seal, which is another possibility to highlight projects that have that have worked eco friendly, and also to show to the world that this is going on at Film University with our own little seal for sustainable film production. Then Initiative Grün and the office for sustainability in teaching do some activities for a greener campus. There are different things going on. These are 3 that I just want to highlight very briefly. We have designed a book rack at the library. Which is now filled with literature and films that have an eco theme and there and they're also in a specific area at the library. So, if you're a student at Film University, and you're interested in eco and media of any kind be production or media studies Eco media studies, then you can find them all neatly together in this part of the library. We have built 2 raised beds, and we've already gotten some potatoes, I think a hot potato was mentioned in the previous presentation. So, these are still cold, but they're very, very tasty, even though they're quite few. And then there's a project in development at the moment. To build a solar powered production. e-bike, this is our non solar powered e-bike that we are leasing at Firm University, and it can also be used for film productions. But Klaus Hobohm, a colleague of mine from sound, he is doing this with a group of students, so that that

smaller film teams can go into nature and recharge their equipment. Without having to take a power cable and without having to generate energy with a generator. Then, as you're well aware, there's some classes and some lectures going on the lecture today, or the lectures today are part of a bigger lecture series. The green screen lectures. This is the program for this year. We're already over the middle. So next one will take place on the 20th of June. And then there's 1 probably happening in July. I keep this very brief, because you all know it will be able to find the info if you're interested and we have more events, incorporation with other with other actors. In ecological film making and film production. One is the film Festival Eco Film Tour, which is part of Potsdam's cultural landscape and has been for a long time. So if you're in the area. There's actually a screening tomorrow at 7 pm. at the film Museum in Potsdam. Of the film plastic, fantastic. And this is I'm going there with a group of students, and we did a same similar event last year. Also to strengthen our cooperation with these local actors here in Potsdam and Brandenburg, also Berlin. And one thing that's quite new and which I'm very proud of is that we've introduced a 1-day green production workshop at the second year film project. In a kind of pilot scheme last year. 3 study programs did this as a mandatory course, and it was taught by Sarah Dreyer and her colleague, Katja Kaiser, who did the final film together. And are now coming back to university to teach the others, which I find is also it's circular in a very good way and this year we are happy have more study programs committing to the screen production workshop. And it's mandatory or it's going to be mandatory for 5 to 6 study programs who then work together in teams on this big fictional film projects. So, it's a combination of lectures how to getting to work and also reflecting, the experience and the problems that necessarily arise. As I said, networking with other film schools is also part of the program of the Sustainability office. We had a 1st meeting of German film and media schools earlier this year.

At the Berlinale Film Festival with quite some participants and some industry guests, and we will do a follow up at the Munich Film Festival in July. And we hope to further also this corporation to build a network of German film and media schools, because we are all facing the same challenges and problems and working together is probably a good idea also because in comparison to typical classical traditional universities, film schools tend to be quite small. So, if we work together. We can share not only the results, but also the work that needs to get into doing it really well. And this has been mentioned in the talk before as well. So, I'm quite glad I but I actually picked up on some of the content before. But green storytelling is a topic that's also become more and more prominent at Film University. It's also kind of a hobby or special interest of mine. So that's also why it's in here. So green storytelling and introducing ecological and social aspects into the development phase might be a possible focus of some of the teaching in the future. In addition, of course, to the rather hands on green production aspects, we did a lab day on green storytelling last year. I taught it, together with an author and Professor Micah Houck. And it was quite inspiring. And we're hoping to take it further in the next years, and after that. So that's a very brief overview of some of our activities. Thank you for your kind attention. This is the raised bed with some green in it. And yeah, I'm really happy to listen to what Sara has to tell us now how she's been doing in the industry. So thank you.

01:44:43 Björn Stockleben

Thanks a lot for the presentation. So, you see, there's indeed a lot going on. And well, a personal remark on the curriculum issue, actually, on the production program for a while we thought, well, we could do this extra curricular or voluntary or optional so, and at first point we said, well, although we do not fully know what exactly we'll do there. We just

put in the curriculum, and once it is there and mandatory. We have to fill it. And it worked well until now. And I think it's one of those issues or those topics where sometimes people hesitate, we do not fully know how to integrate it into the console, into the curriculum, or what exactly could the content be?

And it is a good example where it's important to do it now, and force yourself to really fill it with meaning, and find opportunities. And, as you see once you start it, there's a lot you can do and we never regret it until now. Having mandatory. I hope this will work out very well for all the students. And now.

01:46:00 Maike Reinerth

Very, very, very quickly, because, that's, I think that's very important. What you just said. But what's also important is that someone has to start. So, someone has to take the lead. If all the study programs just wait until the others, do it, then nothing will happen. So, it's great to have you. And then there's another study program there also. It's not in paperwork yet but they're they want to do it. So, then we have 2, and I'm quite certain that others will follow, and each will find what fits their purposes and their needs. And it's a it's a very good basis also to exchange experiences and ideas. But someone has to start. So, thank you.

01:46:45 Björn Stockleben

And well, you said someone has to start. And you already pointed out that indeed someone has well Tobias have a remark.

01:46:54 Tobias Frühmorgen

Yeah, I it's you're really great to pass presentation. Not only this one. I really like that. And I because I I've been honestly trying to do the same things with the students in Lisbon. And it was knowing that everyone wants to do something, but nobody knows to do what? Where to start it, actually. And I mean, I made this list of 7 rules, you know, not use unchargeable batteries, and have one veggie day, and make the excel file with all the transport and stuff like this. But I really think so. I really would be very much interested in your green guide 1st of all, and secondly, shouldn't we like join forces in some form, because I think that's everyone's doing the same thing, and we don't need to invent the wheel all the time. Right?

01:47:48 Björn Stockleben

Yeah.

01:47:49 Marta Materska-Samek

It could be the next project to go further and expand the partnership.

01:47:55 Björn Stockleben

Okay? Well, so let's now go to Sarah. So as Sarah is. Maike already said, she started actually the Initiative Grün and was part of so it's part also due to her engagement that all these things came to be that that Maike just presented, and also Sarah had her own very personal heroin journey with producing Exit Pangea with where she chose to take on exactly on, on, not only one challenge which is producing a feature length science fiction film at the film university under the conditions of a student film. No, she said. Well, this is

not difficult enough, so I want to produce it in a sustainable way. Well, it was your choice, and well you succeeded. But now please tell us. How did that come to be.

01:48:58 Sarah Dreyer

Thanks for this very kind introduction, Bjorn and Maike. I'm happy to be here and to present Exit Pangea and the Green production case study we made with this graduation movie. It was really a challenging journey. I can say. So I just will share my screen with you. Bjorn, I think you need to activate the screen sharing mode for me cause it says that I cannot share my screen.

01:49:48 Sophie Tummescheit

Now it should work.

01:49:51 Sarah Dreyer

I will try it again. Okay. I hope you can see my presentation.

01:50:05 Maike Reinerth

Yes.

01:50:07 Sarah Dreyer

Great. First of all, I would like to share the trailer. So you get a short impression of this sci-fi dystopian movie and this will be important to get into further details about production design and how we could implement green production measures on this movie. So please just take 2 minute to watch a trailer, and then I will start with a short introduction. I just posted it into the chat so you can watch it and then give me a sign if you finish, that will be great. Thank you.

Okay, thanks for watching the trailer. Exit. Pangea it's a cyberpunk shower, dystopian movie graduation movie that was finished last year. Director Timo Baumann and I as producer, worked on this intense and journey, and even long before we started to shoot it was clear that we wanted to have a green production. So even before the script was there, there was this self-commitment to have a green production.

01:53:32 Björn Stockleben

Would you activate full screen like store wrong? A should do the trick, or if you're on the Mac, I think it's comment. Oh, well, yeah, now it's stopped the okay. I didn't want to distract you, but in the acrobat, like, if you do store comment. It should be the full screen mode. If not, it's okay.

01:54:01 Sarah Dreyer

but I think here you can. But can you see the person.

01:54:05 Björn Stockleben

It's okay. Then then just go on.

01:54:08. Sarah Dreyer

Yeah, because I have to switch between the tabs, because I want to show you some documents that we used.

01:54:15 Björn Stockleben

Get it. Yeah. Thanks. Sorry.

01:54:16 Sarah Dreyer

And even long before we started to shoot in August 2021, we wanted to have a green production, and as I was a co-founder of the initiative green. As Maike mentioned earlier, the student group focused on green issues founded in 2018, we already had some very useful production tools, and we could rely on. First of all, there is in the intranet a section where the students can now find the documents from initiative, from the green initiative, and there they have the Green Guide, where you can see, like all the measures you can take, and where you can apply for the green money part. And it's all very easy explained. And then you have like this 1st document. That was our fundament where to start, because it's always the question where you can start. And then also, there is a declaration of commitment lists just wanted to show and it's a list where every film team can declare what they want to have as measures in their special found the project. So, we have taken the step between the Green Guide this like the general advice, to what can we for our broad project do? And then, of course we had, like all these different steps in the film production, like communication from the very early beginning. How to separate ways, how to reduce paper use and transport and mobility, then going to the shooting production design, catering. And, as you can see, every team can think about those different steps of found production and then think about what is possible for them.

So that's how we got it started. And once we finished as a team and just self-commitment list. We send it to the green committee that was also mentioned by Maike. Because it's great that at the film university we have this special green money part for graduation movies. And then the graduation movies can apply for this green money part and they get some extra money for doing their green measurements. Green actions show. So just a second. That's how we started to talk about this issue, because in the team communication it was very important for us to always establish the self-image, as green production.

And to speak about our shared values and so we had just regular team meetings online in real life. And we had some space where the head of departments could also exchange ideas on green producing for example, production designer and DOP director photography used the space to develop a certain lighting concept which I will show you later great because they could integrate like led lights into the set design. So, we had in this very early stage of the film production already this established space for exchanging green ideas. And also, we use this space to keeping the team updated on what they had to expect on set, for example, vegetarian food, or all the waste separation system will work and there were never, ever any complaints later on set because the team was always updated. And this was the internal communication, and also for the external communication speaking to companies and sponsors we always presented us as a green production.

And we had this wonderful green production Supervisor Katja Kaiser and she and I we worked very close together and she was involved in all the external communication, and having her a green production supervisor, presenting the project to external partners, also made it more valid that we had, like the student project, but with a green production supervisor who would take it to the next level. So it was very important for us to have this also in our project paper as you can see here just sharing some documents, just was hope. Yeah, project paper that we would send to companies to ask for a sponsorship and there

we always declared our vision on green producing. And that's made it even more professional that you could see the self-commitment even in the 1st pitch paper. That was Katja worked on this with me together. So communication is key and then also in the production office that was based at the film university we talked about, for example, waste reducing, and we used waste separation bins there and then. we always thought about things. For example, if you wanted to have lunch, we would go to the cafeteria and for the coffee to go later we would always use reusable dishes. And so this was also in a fun way, part of our work together. And then, for example, for paper use we would always have this thing before print fought, and we used as many digital documents as possible for scripts, shooting schedules, contracts. We would ask our contract partners if they would be fine with having a digital copy of the contracts. And so there were only a few documents that really needed to be printed like some contracts for film university and for the production design it had like a big map of the studio building. But we always reminded everyone that they should not print just to have stuff printed. But to make a valued decision if they needed something to print or not that yeah. Reduced our paper use a lot. Then one of the number one factors that creates one of the highest impact on a carbon footprint is the number of filming locations, and also the place of the filming locations. So thinking about where to shoot, and with whom was a big issue, I mean for a student project it's obvious that she will want to work with a regional crew and cost because it's a low budget production, so we don't have money for hotel overnight stays. We don't have so much money for travel costs. But comparing, for example, all Berlin-based crew members and the travel costs to this one creative head-off makeup person that came from Bielerfeld and we really wanted to work with her. So in the end she was the only person that would come from another city but she had to use her car, and that ended up in more than 700 euros just for the Petro costs, and comparing this to using only public transport tickets. for example, 3 crew members who did not have a student ticket. That was like a lot of money we could save by working with regional crew and cost. So I just would recommend it to everyone if it's possible. And really to think hard about if it's necessary to work with someone who is not based in the main location of your shooting.

Also, in the process of location scouting as we really wanted to use as much as possible of public transport connections to reduce crew transport by car to minimum that was like something really focused on and having only 3 locations in the end, and having 3 locations with a good public transport connection we also could plan the equipment and production transport to minimum. And also in Potsdam we used a cargo bike for yeah, doing some shopping for food and production items. So in Potsdam it was possible, but of course, for trips in Berlin and outside Berlin we had to use transporters, but only for the shooting days, and one day of preparation, and one day in the end for bringing back the equipment. As I said, location scouting was a big issue. Keeping in mind the distance between the locations, the infrastructure we found there and public transport connection, and Puya's lab was built at a film University studio.

The disadvantage was we had to build everything, and we had to use all this construction material. But of course, the advantage was we had total control of the look, and we could use the film university infrastructure. That also has clean electricity and a good public transport connection. Then, at the second location we chose was an old factory site in Berlin and it was close to a building of the Technical University in Berlin and as it was also University building.

We could have some special arrangements with them, could use green electricity also, for the outdoor shooting had some water supply for the artificial rain and that was at Humboldt High and had really a good public transport connection. We loved that location. And then the biggest challenge was to find the 3rd location, there was a lake and there the storytelling was a big part of the final decision because at first we started to look for like this magical simulation lake that the director had written into the script because it's an artificial place. And then we started location scouting we just noticed that we would spend so much money on the location scouting. And then, when we found a location in another in Bavaria, well, only online, we did not drive there, we said it's just too far away from Berlin, and we would kind of lose our image as a screen production if we had to shuttle the whole crew and equipment to Bavaria from Berlin, so it did not make any sense to us. We looked at so many lakes in Brandenburg, and the reality is, well, it's not like this. It's more like this. So.

02:09:02 Björn Stockleben

But close, please.

02:09:05 Sarah Dreyer

Almost. But then director and screenwriter, as we talked about this issue a lot because it was important for us to find something that is visual appealing, but at the same time is not disturbing our green production journey, and he found this idea that he would write the Lake of poorer's childhood memory there was like a normal swimming lake into the script, and changing it from this artificial simulation place into a place that would make sense to the main character, and then in the end, it was a swimming lake and it was part of the dramaturgical idea, and we just loved it, and it was some swimming lake very close to Berlin and there we could shuttle the team from the Espan station. That was only 2 kilometres from the lake and as we planned our shuttle schedule very efficiently with when the crew had to arrive, and when we would pick them up, we just could reduce the a crew transferred by car to a minimum and to make this possible. That was another issue with the head of departments, because in the script there were like this morning liked as scenes and then to have morning light we would have needed to get the crew to the lake at 4:30 am, and it was just kind of unrealistic to expect the whole crew that was mostly students or not paid for the work. To get up this early to be on the lake just to shoot a morning light but it was in the script, so there was some vision behind it. But then, with the director and the DUP and the production designer we thought about how we could use the blue hour instead and then we decided to have, like 4 short days with more blue hour time instead of 2 very long days with morning light and then we had like more shooting days. But we had some more realistic approach to how to get the crew with public transport to the set to shoot on this lake with special light.

02:11:54 Björn Stockleben

Sarah, just a short question. How much more time do you need? Because I'm just trying to figure out how we can care for involve Florian Schneider still with this project with his part.

02:12:10 Sarah Dreyer

Yeah, I will shorten it to 5 minutes, I think.

02:12:14 Björn Stockleben

Great

02:12:14 Sarah Dreyer

Yeah. Okay. So, another aspect we focused on was the catering because a wealth that crew is a happy crew. And as we had this communication with the team beforehand. It was like obvious that we would have vegetarian food, reusable dishes. We had some water canisters, so we had no plastic bottles, and we had fabric, coffee and tea and bread with chocolate green instead of packaged sweets, and we also would ask the team to bring, like their containers to take the leftover foods with them, and it was kind of fun also my mom and my father came to Berlin to cook for the crew, so it was delicious. They got freshly coup food and cake, and it was all like biological, and they were happy. So, no meat needed. Yeah. Well, to plan the catering you have to keep in mind some logistics also how to organize later the waste variation on set. But with our green production, Supervisor Katja, who were on set, and would talk to people and explain how this would work on the base, and where you could not smoke, or where you could smoke and doing it with some fresh, spirited approach. It kind of worked well. Another big issue, of course, with having this dystopian Sci Fi movie was the equipment what we could use, and as I said before, we had the head of departments talking about exchanging ideas on green production. DUP. Stephan Vogt had this idea of using led light in the set design, and then he found a way, together with the production designer, Franziska Herbes, how to integrate it into the set. And then as we knew that we wanted to use this eco-friendly lighting that was the challenge for the production to get this very expensive as Para led tubes. It was a lot of extra work, but it was, of course, worth it. Also, we had some standard ideas like reusable rechargeable batteries. So, we just would use this kind of rechargeable batteries, and we always used like electricity from the locations, and wanted to avoid generators and as the lighting concept was based on using a lot of available light and reflectors, we also could shoot close to the lake, and we did not have so much equipment with us. So it was like a light equipment that we would take with us. Yeah, I mean for the production design studio construction, and that is like a lot of stuff in this studio, we used most of the material borrowed from different sources and we use second hand and only stuff without harm for substances for the walls for the paint. And there was a lot of self-made building with electronic waste and only second hand stuff and there was almost no new stuff that we had to buy, and that was our goal to buy as little new material and props as possible. And as we had this dystopian looking studio, and it was a fun challenge for us to do it with all reused material. Yeah, also for the costume we had this second hand and borrowed idea, an upcycle with leftover materials from other productions. And in a makeup department we wanted to use curative-free vegan makeup products and as we talked about it long time before shooting and during the process, and then Katja and I always try to support a head of departments to get always the items they wanted to use. It kind of worked out well. After the shooting in a post-production we did most of the work at the film university, using green electricity for free thanks for that. And also, after the project was completed we did the green production Evaluation report for the Film University Green Fund Committee to show that we were really serious about green production. And also we did some calculating on the carbon footprint. I mean, most of you have heard about the calculators. So we used the calculator from the German film funding and from Van Gutenberg there was a lot of work to do the carbon print later, and so we and thought there were some room for improvement. But we did it, and then, of course we wanted to submit our project to the ICE award for sustainable film production listing all our efforts on the projects and how it worked out and we won. We were really, really happy and let's work for every graduation project to have a try on this award. And yeah, that was like, a

nice and recognition for all the work we put into this project. That was a short and brief summary of everything we did but thanks for your attention. And I'm happy to answer further questions on this topic. If we want to go deeper into the details. Yeah, thank you.

02:19:33 Björn Stockleben

Thanks a lot. I suggest we spare the details for a little later, if there are questions and go to Florian Schneider, who I understood, your film Sarah, is actually where you did green producing. But you have already. I see also a lot of illusions in your storytelling towards possible futures, maybe dystopian futures and as far as I read it from the web page, the PACESETTERS project is also not only about so how can we do green production? How can we be more sustainable, but also make an impact on sustainability and on the behavior outside of the film domain and Florian Schneider, I welcome you. Sorry that we now had you wait a little and nevertheless, I hope you still have a bit of time to tell us what your project is about because, we're very eager to know and to get some insights into the PACESETTERS project. So Florian Schneider from the Norwegian Technical University. Is it correct or is it a longer title? I have a problem with names of universities.

02:21:01 Florian Schneider

I have to make sure that the University is properly named. No, branded. No, it's the Norwegian University of Science and Technology, one of largest technical north of Europe. Yeah. But I'm not an engineer, but I actually, I studied film in the Munich back then in the started in the end of the eighties we are working there in the smallest department of this huge university, which is an Academy for our fine art or visual arts, as we prefer to call it. Now, I have to apologize because actually we were late because I was stuck in a train in the south of Sweden, which was running in 3 h in circles or to cover 40 kilometers. It was totally absurd. So we were totally late. Couldn't make it at 4 o'clock when we were scheduled. But I mean thank you very much. I mean, I really enjoyed this very, very detailed presentation that I was able to catch in. I think the second half or so. Now I think this it's really super interesting. I mean, also because I mean, I understand a little bit yeah, what we are, what we are talking about, or what how detailed in the end the challenges will be. Yeah. I would like to do the opposite now zoom out a little bit which does not mean that I underestimate or cannot value this level of precision, and also the practical and very pragmatic challenges. And yeah, the difficulties to make decisions in these contexts. I would like to or I was asked by Marta no, to share with you. The short introduction, I mean very short. We can maybe then I'll make some Q&A slater. I hope I find the right thing now. No, I had enough time to prepare. No, I made. This is too wrong presentation to.

02:23:36 Björn Stockleben

Problem. I think. Probably old interesting.

02:23:39 Florian Schneider

Too many open windows. Unbelievable. How is it? Where did it disappear? Yeah. It is now okay. This works to share.

02:24:05 Björn Stockleben

Yes, yeah, that works.

02:24:08 Florian Schneider

Great. So I would like to give a short introduction into research project that we just started a couple of months ago in March the title is PACESETTERS. And yeah, we came only with the acronym. We came only to the first 4 letters, powering artistic and creative entrepreneurship, and then set us also might refer to something. But it's not further precise. Or further explain. So, this is a Horizon Europe Funded research project. It's a research and innovation action. This means we can really invest into practical investigations. We can explore the potential of practice-based research in the creative disciplines. And most importantly, what we prefer to call artistic research. Yeah. And I think Bob is back is one of our one of the strongholds of artistic research in Germany. Yeah. So we want to use and I think it's indeed the first horizon Europe project that is promoting an artistic research methodology of causing combination with other methods like participatory action, research, etc. But it's the first officially funded recognized artistic research project on that on European level. Which makes us, on one hand, of course, very proud and happy. On the other hand, it is quite a responsibility, and we really have to work hard not to mess this up because we want to showcase actually the potential and the capacities and abilities of artistic research, especially in the context of the climate transition. So here's our logo wall. We have 15 organizations. This is an unusually high number of project partners that are working together. We think it's really necessary. We have a number of universities like NTU. This is my university, but also the University of Galway. We have Cambridge on board, and the University of Chieti Pescara, and last, not least, Marta and her colleagues from the Jagiellonian University in Krakow. We work with network organizations like ECBN, the European Creative Business Network but also the Federation of Cities and Municipios in the south of Andalusia we have local Partners Museum small museums like the Pueblo Museum in Algeria, which is a small town in the very south of Andalusia, in the various most southern tip of Spain. Then smaller, more agile organizations, like T6 Ecosystems, which is you might know them from the starts consortium or the starts prices. Yeah. And oh, but also huge institutions like Fraunhofer. But here we work with the people who are particularly focusing on cultural heritage.

02:27:51 Jörn Krug

Yeah. Florian, yeah. Still, seeing the first picture with the blue. So, I think you're continuous. Yeah.

02:28:00 Florian Schneider

Is this moving?

02:28:02 Björn Stockleben

Probably...

02:28:04 Marta Materska-Samek

No.

02:28:06 Björn Stockleben

Do you have the presentation on a second screen, or something like that?

02:28:12 Florian Schneider

I mean, I see it, and it moves.

02:28:17 Marta Materska-Samek

We don't see it. So I'm pretty sure. Yes, yeah, this is the 1st slide. Yes, perfect. So, it was not this window.

02:28:29 Florian Schneider

Okay, what did you see?

02:28:32 Björn Stockleben

PowerPoint Interface. Nothing embarrassing. But this is much better. Okay.

02:28:42 Florian Schneider

Yes. So here. Now, you miss the Logos and the beautiful map of yeah, all the different a project partner spread across Europe so in sport a pacesetter is a runner, I mean, the term comes from mid and long distance running. Is a runner who leads the first part of the race. In order to make sure that there is a high speed which then makes sure that there is no excessive tactical maneuvering. Yeah. this is very, very important. If you want to, if you aim for certain goals, or a aims in a race. Now like a certain record or so, yeah, you have to make sure that the pace is high in the very beginning from the very beginning of the race. We think that when it comes to the climate transition be in a similar situation, there is, excessive tactical maneuvering also known as green washing. Yeah, or just blank denial and we need to make sure, and I think this is the specific role and challenge for the culture and creative sectors to make sure that we do not only keep the pace but that we set the pace, and we push the pace of the climate transition. I think this is the role that art and culture should play in this context. And we want to find out what does this mean in detail and in the different creative domains? We have 3 main goals one goal, the first goal is to turn the fragmentation of the sector. Yeah, I mean the culture and creative industries, according to the definition of the European Commission, is divided into 13 sub sectors. Yeah, that's and there is, these are really like creative silos, very, very little interaction between the different creative disciplines or the creative industries and then there is an insane rate of solo and micro entrepreneurs up to 99% of the sector. Our companies that either are run alone or with one to 5 employees. So this produces a tremendous fragmentation that is often deplored, there's a lot of implement about it. we want to figure out, how can we turn this extremely fine-grained structure of the sector? How can we turn this from a weakness into a strength. We want to reframe this, the second goal, the urgencies of the climate transition. This means that we want to turn it from a threat into an opportunity, and I think I mean I was just last week in Berlin at the Green Cultures Festival, and it was very interesting to listen to your presentation. Before. Yeah, I think there is a lot of activity, a multitude of small and very, very interesting practical initiatives. on micro level but the climate transition and the challenges that are connected to the climate transition I usually understood or perceived as a threat. Yeah, so how can we turn this around and say, Okay, the glass is not half empty, but half full. We see here also opportunities to develop, for example, new aesthetic strategies. Yeah. Not only making sure that the we reduce the greenhouse gases, but how can this enable what we call circular, aesthetic or regenerative aesthetics and then, ultimately, this would lead us to the 3rd goal and this means d, and recontextualizing, the term innovation. So what does it actually mean today to make something new? Do we need so many new? Let's say artworks for example, that are shipped around. Does everybody know, have to insist on newly produced artwork, and then it is forgotten and ends up in a chef. How can we respond to a new generation? I mean, I was talking to a colleague recently who is teaching

in our architecture department, and he said to me, he's confronted for the first time in his entire academic career with a generation of students who don't want to build new houses. So how do we in this, in the context of this circular or regenerative approaches or renovating wave? Yeah, that is clearly necessary in order to reduce the greenhouse gases and the carbon footprints. How do we rethink and reinvent the term, or the idea of innovation or what it means to do something new. We will start what we have started with what we call creative case studies. So we look into 3 different thematic areas. We have structured them according to our main thematic focus areas. This is on one hand, decentralized architectures. So we really want to think about sustainable reindustrialization through art and culture by translating avant-garde strategies into mainstream production. This is very, very interesting. For example, when it comes to fashion or how to battle or struggle against fast fashion. But this is also very, very interesting in fields like architecture but it requires a decentralization or distributed architecture that then gain a certain autonomy and operate independently from each other, but highly networked with each other. The second theme or thematic area that we want to research in this context, we call it collective intelligence on purpose. We don't call it AI or something like this, but it's really about, how can we use big data parametric design in order to completely reinvent the future of an events industry. Yeah. So it's about new forms of collective agency or co-agency between humans and machines humans and humans and humans, and not, or more than humans. The 3rd theme is shared creativity. We don't think that creativity should be the privilege of what is often called a creative class. Yeah, we think that creativity is something that really is widely distributed. You find it everybody in in in our engineering departments. We have the most creative people. Yeah, not necessarily in the Art Academy. So in order to claim ownership of the transition in order to document the impact and the value, and to monitor the progress of the transition, we need to promote an understanding of shared creativity that is truly inclusive and not exclusive. So with these creative case studies, we have very specific focus themes of these case studies in total, we will make 12 case studies. We want to make this step from observations Co research really put together multidisciplinary teams that then researching 12 very specific and concrete cases, and I think green filmmaking would be a very, very interesting connection point, and we would be happy to invite you to contribute to one of them. In a second step we will then translate the findings of this core research. And we want to set up 3 real world laboratories one is in Genalguacil, this is a small town. Actually, it's 2 or 3000 years old. It's in a Valle del Genal, which is, as I said, in a very so for a Andalusia in Spain. We work with the Galway International Arts Festival. This is a big performance and Music Festival and Theater Festival at in the west of Ireland. Every year in July, and something like 400,000 visitors. Yeah. And then our 3rd real world laboratory we just visited it. Invited by Marta and had 3 wonderful days in Carcow and in Nova Huta reward laboratory is the Cultural Center in Nova Huta, which is already 70 years old and was originally started as a kind of regeneration facility for the workers in East Europe's former largest steel plant. We want to turn then the results of the implementation and the testing of very specific of these very specific cases that we I 1st researched and then implemented and then tested in these 3 reward laboratories. We want to use them results, then, in order to build something that we call a transformation process framework, which is really then about identifying a common catalog and a kind of index that allows us to qualify the effects in response to the challenges in the cultural and creative sectors and industries to the climate transition. We want to compile social impact and assessment strategies. Co-create progress in performance indicators. Yeah. So rather than translating them from other disciplines in other fields like hospitals or so

develop our own progress and performance indicators based on our artistic and creative practices. And this should lead, then, to valorization strategies that are indeed driving the climate transition. So not only contributing to it, not only adapting to the challenges of the climate transition, but really drive the transition, push the speed. And we know that we need for this digital support frameworks that are built on trust, transparency and reputation. That allow us, then to experiments with new formats like trans local platform cooperatives or, yeah, specific proposals, for example, for risk mitigation. Yeah. On one hand, empowers, encourages the artists and creatives. But, on the other hand, also attracts investment or funding that otherwise might be very, very critical. To the basically, absence of risk mitigation that characterizes our sector, and it's a little bit different in film, I know but it's it would be also here again, very interesting to translate the experiences from the film industry to the other sectors. So ultimately you come to the end. This is about rethinking impact, quality and value. So we have a little compass or diagram here. We want to explore pathways to impact that are built or the dark following the idea of repurposing and allow us to evaluate quality on one hand and create value on the other hand it's about valorization strategies that are driven by creative confidence and this confidence is built from both impact and quality of the artistic and creative work. And then, ultimately, this leads to quality assessment that is based on a rethinking of the conventional notions of impact and value through the power to create effect, but also through. And I think this becomes increasingly important in the context of the climate transition, the power to be affected. So what is next? We are planning and here we will specifically invite you to participate. We are planning a large scale survey where we want to find out and invite strategic partners, collaborators, but basically all artists and creatives across Europe and beyond to figure out, how can art and culture, heritage and creativity drive the climate transition. So we will launch soon an open call for advance and emerging practices because we want to collect on one hand good examples and lessons learned, but also the failures and the success stories. This is not limited to existing projects or ongoing projects. We also so very interested in new ideas and proposals. And it can come from any fields from architecture to music, design, literature, profession, coding, theater, film or game development. So the idea is to learn as much as possible in our research. We don't want to reinvent the wheel. We are very much aware that they are very important research has and also act practice based research has already been done. So we want to learn as much as possible from what has already been proposed, tried out or implemented. In order, then, to document, map and visualize the full range of the different efforts in the fields of arts, culture and creativity. And this will be the basis for our creative case studies. Thank you very much.

02:45:04 Björn Stockleben

Very well, thanks for the comprehensive presentation, and also good to hear that there is an artistic research project which is set out to prove that artistic research can really make an impact. So it's good that you take it seriously as you emphasize so and good to see that it got funded in the first place. I have a personal challenge that I have to be at the RBB for another presentation in 8 min, so I'm afraid I could not moderate a question and answer session now. I can offer you that we can leave the room open for anybody who would like to exchange email addresses. So and maybe Jörn would like to have a short chat with you. Just an idea. And maybe we can give the host to Jörn., then we only lose a letter when I go. That's close enough and but that is the informal part. So I thank you very much for having me in part of this. And this was so much it would take couple of days for me to digest all the new information. It was great meeting, all of you, and let's continue collaborating one

perk I can already announce Maike Reinerth and me agreed that we would translate the newer new upcoming version of the Green Guide into English. It got an English title, so it should be in English available to. So we'll do that, and provide it or all who needed a one to have simply a look at it. Yeah. thank you very much. Sophie will give the host to Jörn, and maybe you can then have some colloquial chat, or just go your ways. I have to head off to the RBB. Thanks a lot again. I wish you a good evening, and good networking.

02:47:09 Jörn Krug

And have a good time at RBB. How can you now in a funny role. Okay? Great. Yeah. Thanks, Florian, for the presentation. And maybe can add over the question to you any questions to Florian and also to and so from the audience. Otherwise, I just jump in.

02:47:43 Florian Schneider

I see a lot in the in the chat going on. And this is, I mean, this is basically exactly I mean, we have been at the Green Culture Festival last week, and I think it was very, very interesting, but it also showed what is necessary. You know, I mean there is very little coherence between all these different initiatives. And I think, for example, theatre could learn a lot from is what is happening in film, yeah, the other way around or the game industry, who is under massive pressure at the moment, because I mean, we have to be aware. Yeah. But if the game industry online gaming migrates from fortunately, I don't have to explain this to you guys. Yeah, if the game industry migrates from HD, to 4K, in online gaming, this will create more greenhouse gases than entire air traffic. Yeah, so these are the dimensions. We should not assume that just because we have so good intentions everything that is, art and culture or creativity would not have detrimental effects and contribute massively to global warming. There is a tremendous need to translate experiences, successes, but also failures from one creative silo or one discipline or one industry to the other. And we want to contribute to this through an approach that is less based on statistical data, but more based on creative artistic practices. But thanks a lot for dropping all these links. This is exactly what we want to do with our with our survey will be a very, very simple web form. Yeah, that you can fill in in 3 min if you have an interesting project proposal idea, or whatever. Yeah, if you know of something. We want to really produce this map that gives an overview of these kind of hundreds and thousands of small and bigger initiatives that are already happening.

02:50:08 Marta Materska-Samek

That was the intent to connect the dots. Yes, because we are all working on the different aspect of green change in creative industry. You have a more overall view. Tobias has totally focused on the film production. We are covering different aspects of green filming and education and policy. So it's really nice to meet together. And what can be the Immediate action is to just map the GEM as a case study for the mapping of CRESCINE. For the mapping of PACESETTERS to link the CRESCINE with the GEM, as the Babelsberg has nice track already, a lot of output to be shared through the films schools network and Lusofona work. So we can just be in touch together and as we have also the partners of the IMPULSE project, because Dimitris is from IMPULSE, Babelsberg is from IMPULSE. Adnan as well, we have this Sibling project which deal with the culture heritage and the digital issue, because the digital is also something, the digital transformation is going together with the green transformation. And we need to just pace how the digital swift, yes, can support the green one. And what is supporting and what is restraining, as the changing into digital form is not always the green one. So, it's just to be explore, to be

checked and just navigate this this change together. And it's good, that Jörn took the moderation as the Jörn is coordinating the startup office. Yes, and with the startup new ideas, new businesses, more sustainable and more green. This is the place when this initiative should raise and develop.

02:52:30 Jörn Krug

Maybe I can add on that. Because it fits excellently. Yeah. My impression is that because I'm very much interesting because we have the word entrepreneurship in it, because this what we are dealing with, and but being honest in the at least in the side of the venture capitalists and the politics, and so on as well, social startups or impact startups and cultural startups are all but play the least important role so get less money, they get less visibility, and so on, and so on, and so on, and at least in Germany, where they are not going from supporting universities to supporting startup factories. So, it's more the factory approach, not any longer the consulting and incubation approach. I have the fear that it gets less social, less sustainable. And yeah, it's a and I would really like to stress on that how to make it an opportunity, and also to make it an entrepreneur possibility.

02:54:00 Florian Schneider

Can I? Very briefly comment on this, because I think it's really, really, really important. What you touch on. I mean, I, personally have 2 different strategies. To introduce this concept of entrepreneurship. I mean, one strategy is very simple. It's really about sustained financial sustainability mechanisms. Yeah, we have this level of precarity and isolation and fragmentation in the sector also because of this total dependence on project-based funding. Yeah. So why not to look again? And I think here, filmmaking is a very good example. And I was educated in this sense, so I was never afraid of starting my own company on the country. A couple of them not, I mean not only a couple, but several of them. No. The other strategy is to say, artistic entrepreneurship is the new punk rock. Yeah, this is what really matters, and also allows us today to completely rethink the standard cliches of startup financing. I mean, we notice very well from our university. I mean, sure they found the they found a little company. call it startup sees a patent and then, after 3 years or 5 years this startup is sold to somebody who's actually even not even interested in using the patent, just making sure that nobody else owns it. Yeah. So, I mean, this is not productive. Yeah, I mean, this is very much hyped, and certainly a lot of people on a hell of money with this. But this is not productive. This is not creative and it does not contribute at all to a common good. So, what would be, indeed, then a counter concept of entrepreneurship. Yeah, in, I mean, okay, recorded entrepreneurship of the multitude. We work with an American sociologist, Albert Hirschman, who actually comes from Germany and so I mean was working this way and fry in the Emergency Rescue Committee, and so on and so forth, but then had a brilliant career as a sociologist and economist. And he looked into collective forms of entrepreneurship mainly in Latin America. Yeah. So, there's so many other concepts of entrepreneurship that are just ignored or neglected or excluded in this kind of standard young rich boys from wealthy families. Startup cliché. Yeah. So how do we break this up? And how do we introduce here the entire a variety of the different possible strategies of undertaking something. Yeah, because the word is actually quite beautiful.

02:57:17 Jörn Krug

And maybe one last comment on that. Of course we have startups that do it super sustainable, and they are brilliant, and they earn money, and then as and they are sustainable but they are not financed in a way, so they can't run, grow, and if they got grow, they can't make that kind of impact compared with other super fast growing, it app startups or something like that that maybe are not at all sustainable. Yeah, but I would love to continue thinking and working on those ideas.

02:58:02 Florian Schneider

This is one of the things that we want to explore in the real world laboratories. Yeah, where it's really about. I mean, we work with established factor as established companies. Yeah. We will probably work with a company that exists in several generations, that is, producing ceramic tiles in Andalusia. No so how do we get out of this trap, that is called scalability? No. How can we invent forms of, for example, horizontal scaling. Yeah, this is what we call trans local platform cooperatives. Yeah, that are not necessarily in depending on a quantitative growth. That then also consumes more resources, consumes more energy, etc. But super discussion. I would love to follow up with this.

02:58:55 Jörn Krug

Other ideas and questions.

02:59:01 Marta Materska-Samek

I believe we already possible. More than half an hour, so I will be happy to continue and to invite you to the next series. And I think it's after the Erasmus XR and the Green Education in Media. It's the it will be the time to take the challenge of the impact and social impact of our work. So, we have a lot of inspiration for the next project to work on. So also on the entrepreneurial education, because if people will not believe that it's feasible, if they will not have courage to take it to test it to. Just try we will not break this wall.

02:59:59 Jörn Krug

Exactly, so.

03:00:01 Marta Materska-Samek

Yeah, a kind of critical mass is needed. And yes, and we need to take perspective from the research side, however, from the education, as it's more popular and penetrating the society. Thank you.

03:00:23 Jörn Krug

Yeah, thank you all for your contributions. And on behalf of you.

03:00:31 Marta Materska-Samek

Yeah, you are the only one, the German who stayed. Yes.

03:00:35 Jörn Krug

Yeah, there are others, but they are not in the role of Germany. Thank you, we keep connected, and this won't be the last event that is hosted by GEM. And we'll work on these topics.

03:01:02 Marta Materska-Samek

Right now, this series I think the next series will be created by Małgosia the autumn series. Yes, by Goran. Yeah, but we will have a series of seminars created by Zagreb. So, it will be nice opportunity to share the link and meet again in winter. Semester. Yes, because it's already summer.