

Turning it sustainable: implementing sustainability goals in theatre productions at NTNU

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Abstract

This article proposes ways of implementing sustainability goals in theatre productions to create interesting creative expressions. It is a case study that examines the work done by the author in the first-year bachelor course on “Theatre Production” in 2021-2023, to turn the course sustainable by addressing UN Sustainable Development Goal no. 12 “Responsible Consumption and Production”.

In the article, I describe the course’s design and curatorial choices, and the tools used to identify and implement sustainable goals. I discuss the impact of integrating the 4R principles (Reuse, Reduce, Repurpose, Recycle) and the Climate Policy and Action Plans in the creative process. I then argue that the qualities of the sustainable process – the counting and the measuring – impact the artistic choices in unexpected ways.

Keywords: sustainable theatre, ecotheatre, climate policy, UN sustainable development goals, creative expression

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Introduction

The theatre industry is a consumer of materials, energy and transport, and has been criticised for having a “use and throw” mentality (Howard, 2009; Balcare, 2023). In recent years this mentality has started to change. Rooted in the work of sustainable pioneers such as Julie’s Bicycle, Creative Carbon Scotland, SIPA, Ecostage and others, an awakening in the theatre industry is calling theatre makers to respond to the emergency that the climate crisis constitutes for society. Theatre designers and leaders are engaging to fulfil the United Nations’ 2030 Agenda for Sustainable Development, making sustainability a central aspect of their strategy papers, and involving themselves in developing tools and methods to demonstrate how the theatre industry can show how it can be done (Eggen et al., 2023; Sande, 2023).

To respond to this need and momentum, we see a proliferation of companies, organisations and competence centres that are helping the cultural industries transition to sustainability, providing tools and advice adapted to their own organisations. In the Scandinavian countries, since its establishment in 2020 the non-profit organisation Sustainable Cultural Life NOW (called Sustainable Performing Arts NOW from 2020-2022), led by actors Jacob Teglgard and Christian Gade Bjerrum, has helped the performing arts sector to become more sustainable, bringing a lot of theatres to work together in Denmark, and in the Scandinavian countries. In Norway, Climate Culture (Klimakultur) is an idealistic cooperative that since 2021 has had the aim of and a commitment to climate justice in Norwegian cultural life. These organisations are non-exclusive and open source, making their tools available for everyone aiming to make their activities more sustainable.

Universities have also become engaged in sustainability by asking all fields to aim to fulfil the United Nations’ 2030 Agenda and to integrate the 17 Sustainable Development Goals (SDGs) as part of their teaching and research. At the Norwegian University of Science and Technology (NTNU), a strategic research area for Sustainability was already established in 2014, to foster a change of mindset throughout NTNU and to coordinate the development of interdisciplinary sustainability projects. Today, this initiative spans 11 projects and 47 PhD/postdoc positions. In the field of theatre education, sustainability is slowly becoming integrated into the study programmes, led by some initiatives that have fully prioritised working in a sustainable way. For instance, the University of Warwick has started a bachelor’s degree in Theatre and Performance Studies and Global Sustainable Development, and the Finnish Art Academy Uniarts reiterates the goal of ecological thinking

permeating the entire university by creating a new environmental programme that strives for carbon neutrality by 2030. In Norway, Oslo Met in 2023 launched the first PhD programme in Innovation for Sustainability, an initiative led by the Faculty of Technology, Art and Design in which they aim to contribute knowledge and expertise related to the transition to a more sustainable society, in Norway and abroad.

We, the Section for Drama and Theatre in the Department of Art and Media Studies at NTNU, have engaged with sustainability. In 2021, we decided to include new learning outcomes with a focus on sustainability in our bachelor and master's study programmes connected to the 2030 Agenda for Sustainable Development. In these programmes, students would gain knowledge of sustainable performing arts practices. They would be able to find sustainable solutions and be critical of the use of materials and energy in production processes. In short, students would gain a new type of competence whereby sustainability is at the centre of theatre practice. Our aim was to activate some of the UN's 17 Sustainable Development Goals through the study programme, so that students gain competence in art and culture's contribution to sustainable development. Educating students in the principles of sustainability before they enter the employment market is an important way to contribute to achieving Agenda 2030.

As we embarked on this work, we soon realised that there were courses for which the implementation was more natural than for others, due to their theme and design. It was important for us to allow for an organic process, rather than forcing sustainability into our portfolio. We were pleased to realise that several of the courses in our study programme already addressed the UN's Sustainable Development Goals in different ways, even if this was not explicitly stated in the course description or learning goals. For instance, the "Theatre production for a young audience" course collaborates with schools in Trondheim to create a theatre performance that stems from the interests of the young students in the school, connecting to SDG no. 11 "Sustainable Cities and Communities" (NTNU, 2023a). The "Research Methods in Theatre" master's course asks students to research biodiversity issues through performative methods related to SDG no. 15 "Life on Land" (NTNU, 2023b). The Continuing Education and Professional Development "Dramatherapy" course, run by us at the Section for Drama and Theatre, uses theatre-based methods to improve health, connecting to SDG no. 3 "Good Health and Well-being" (NTNU, 2023c). Even though this was a welcome realisation, we still wanted to delve deeper as we turned towards sustainability.

We then had the idea of implementing sustainability in our practical courses across the bachelor and master's programmes. In the context of this article these are courses where students work on the floor in practice, and for which the examination is practice-based, so that students are assessed on the basis of a theatre production, performance or workshop. This turn expanded the initial goal and made it more specific, so that we were not only connecting to the UN's 17 SDGs as a topic, but also as a method. In other words, we would not only work with sustainability as theme, but also wanted our processes to be sustainable.

We started by for the first time including sustainability in the first practical course students encounter in our bachelor programme, which is the course entitled "Theatre Production", for which I became responsible. Sustainability would be used as the central concept and catalyst for a new design of the course. I was inspired by the proliferation of ecotheatre performances, where ecological themes and dilemmas are brought on stage and become the theme of performances, but which also apply aspects of sustainability in the performances' production process (Balcare, 2023; Bryn, 2023; Bæredygtig Scenekunst NU, 2020b). I was also moved by the wave of student activist movements that call us to seriously address climate issues. The eruption of Covid-19 made it all the more urgent to engage with the climate crisis. This all led me to believe that this was the right time to carry out such a project.

I was set to investigate the qualities of the sustainable process and the connections it could have with the artistic process. My hypothesis was that implementing the sustainability goals in the theatre production goals would add artistic value to the theatre productions in a way that was undetermined as yet, but would materialise during the process. Therefore, the research question for this text is: How can the practical implementation of sustainability goals in a theatre production create interesting artistic expressions? What are the qualities of the sustainable process? What does the counting and measuring mean for the artistic choices?

To answer these questions, I will focus on my work to implement sustainability in the Theatre Production course. (NTNU, 2023d) The empirical data for this article comes from the first three years of this initiative, from 2021-2023, when ten theatre productions in total were created. I will draw on the theatre productions, group reports, climate policy and action plans, evaluation meeting reports, and newspaper stories covering the course. This article is an individual reflection on what I as course leader did to implement sustainability in the course. This work was initiated by myself,

but was conducted in collaboration with a team of six lecturers who contributed discussion throughout the course. Some of these lecturers were the same every year and some of them changed over the three years in which this initiative took place.

I begin with a literature review and theoretical framing. Then I move on to articulate the curatorial choices that were important in the implementation of sustainability goals in the course design, so that others wishing to implement sustainability in production courses can adapt them to their own course designs. I then argue that the practical implementation of sustainability goals in the process of creating a theatre production can have beneficial results for the artistic product that cannot be anticipated. It is, in fact, the tedious work backstage – for example the counting of plastic recycled, and paper saved – that offers unexpected opportunities for artistic expression onstage. I then conclude that working practically with sustainability in a theatre production should be understood as a tool for theatre making that is not only relegated to the practical domain, but is also part of the creative, artistic process.

Literature review

As the concept of sustainability is relatively new, so is the history of sustainability in theatre. The existing literature is divided into two categories. Texts geared towards practitioners are about best practices, obstacles and how to solve them, tools, guides, etc. Academic texts investigate theatre and ecology, and how to use theatre to create and inspire a non-anthropocentric understanding of the world, where the focus is redirected towards nature and non-human actors (Downing, 2010; Chaudhuri and Enelow, 2014; Lavery, 2018; May, 2021). This is connected to post-humanism and new-materialism theoretical approaches in art and art education that advocate a decentering of human perspectives. The literature geared towards practitioners has existed since the 1990s, with the publication of Larry Fried and Theresa May's *Greening Up Our Houses: A Guide to a More Ecologically Sound Theatre* (1992), even though this did not really led to any significant change in the 1990s (Bryn, 2023, p. 92). A second wave at the turn of the century came with the pioneers Julie's Bicycle, Creative Carbon Scotland, SIPA, Ecostage, and others. A third wave appeared during the pandemic, and perhaps as a result of it, with a proliferation of new organisations that are actualising guides, tailor-making tools to measure interested organisations' sustainable impacts, and lobbying for political change in the cultural sector. One of the organisations most often mentioned and referred to is Julie's Bicycle. Created in 2006, it has since worked to mobilise the arts and culture to act on the climate and the ecological crisis (Julie's Bicycle, 2023). In 2013, they

published the Sustainable Production Guide for the theatre, to help limit environmental impacts at every stage in the production process. The guide shows how every role in a theatrical production can rethink itself to become more sustainable. It is not only the job of the lighting designers, scenographers and producers to oversee sustainability, since the director, the actors, the PR strategists, caterers, etc. can and should also think in this way. The guide helps compartmentalise the sustainability work, dividing it into three stages: pre-production, rehearsal and production, and post-production. The guide, supported by Arts Council England and written in partnership with the National Theatre and production professionals from across the UK theatre sector, has become a bible for sustainability in theatre, being the first one of its kind, as the basis for other more specialised guides that they have subsequently published (*Julie's Bicycle*, 2013).

Sustainable Performing Arts NOW (BS NU) is a non-profit organisation created in 2020 that has taken on the role of translating the *Julie's Bicycle* guide into Danish and taking their work into the Scandinavian theatre industry and context (Austring, 2020). Jacob Teglgard and Christian Gade Bjerrum have advocated making the guides and tools available for everyone to use, free of charge, so that all those making the transition towards sustainability use the same tools and therefore produce outcomes that others in the field can understand and compare. In this way, organisations can talk together, compare results, and gain an overview of the field, how it is changing and what it is achieving. In 2023, they were rebranded as Sustainable Cultural Life NOW (BK NU) and expanded their activity to including other art forms besides the performing arts.

The Theatre Green Book (TGB) is the guide that is adopted by many today. Created by a firm of architects, in collaboration with the theatre industry, it offers a more holistic approach than earlier guides, covering how to create sustainable theatrical productions, design sustainable buildings, and also make operations sustainable (Buro Happold, 2021). TGB has created a common standard with five checkpoints for a production to be deemed sustainable. It also includes a more specific timeline than *Julie's Bicycle*.

Recent academic literature combines the hands-on approach of the guides with theoretical literature. The work by Chaudhuri and May referred to earlier fuses theoretical concepts and case studies. The same applies to the work of scenographer and researcher Tanja Beer, who aims to bring together post-humanist concepts with

new knowledge in her *Ecoscenography: an Introduction to Ecological design for Performance* (2021). We have used early versions of the book published on her website in our course. The recent issue of *Nordic Theatre Studies on Theatre and Social Responsibility* includes two articles that are highly relevant for this project because they analyse performances that are connected to ecology as a topic, but also follow a sustainable process. Whitney Byrn investigates the sustainable Frontrunners production process, elaborating on the successes and failures of this process and establishing, for the first time, a baseline carbon figure for the production. This also shows how the sustainable process can be understood using the concepts of behavioural wedges and nudging (Byrn, 2023). Kitija Balcare analyses ecotheatre performances in Latvia and shows how connecting to the sustainability principles of Reduce, Reuse and Recycle can be well-integrated in the artistic process. Bringing nature to the foreground while simultaneously working to reducing the production footprint is necessary to shift perspectives in the relationship between humans, non-humans and the environment, making the ecotheatre performances as important form of environmental activism (Balcare, 2023). Both articles are important for this research, as they are the first to investigate the nitty-gritty of the sustainable process, describing environmental principles and actions applied in the process and measuring the outcomes. As in this contribution, they investigate the value of implementing sustainability goals.

Description of the case study

The Theatre Production course is for first-year students. It uses theatre production as a teaching model (NTNU, 2023d). The course replicates the real world, where the students' job is to create a performance in the course of ten weeks.

They are given a chosen script by the lecturer, which they stage, and which becomes the basis for the production. The production lasts around 30 minutes. As scripts are generally longer than that, students must select stories/characters to form their version of the script, often modernising the text to make it relevant to today's society. The students are divided in groups. Each group distributes roles among themselves to create the performance, and must nominate a producer, director, actors, and light/video/sound designer, PR officer, etc. They learn to work as an ensemble: planning, producing and disseminating a theatre production, and are responsible for the production from the initial brainstorming stage to the première, when the audience experiences the final product.

The course gives students a practical understanding of dramaturgical choices, stage processes and tools by working collectively on the theatre production process. At workshops led by both academic staff and artists working in the performing arts, they learn to use the theatre tools (scenography, lights, sound, video and acting), while also learning about collaborative group processes.

The course is divided into three stages. In the first three weeks, students learn to use the theatre tools at a variety of workshops. In the next four weeks, they work independently in groups and meet the staff on a weekly basis at production meetings at the beginning of the week and presentation seminars at the end of the week, to monitor their progress. The last two weeks are devoted to rehearsals, technical rehearsals and final performances. There are at least four performances before the exam. The students are assessed on the basis of the performance (2/3 of the final grade), but also on the basis of a group report (1/3 of the final grade) that reflects the process leading to the final performance, as well as an oral examination that adjusts the grade.

The course is very popular among students. It is the first practical course in which they work exclusively on the floor, which is something they have been looking forward to. All the learning they have gained from the previous courses throughout the year on dramaturgy, actor training and theatre history is activated through practice and applied to the theatre production. The course's design is robust and has been evaluated very positively by different course leaders over time. It is "the icing on the cake" for the first-year students at the university.

The course has had a sustainable focus for three years and in this time span, ten performances were created. In 2021, students staged Henrik Ibsen's classic "An Enemy of the People" (1882). This led to four very different versions of it: "An Invisible Truth", "People and their Enemies", "Obsessed with the Truth" and "An Enemy of the People". In 2022, the aim was to create a Sustainable Theatre Festival where the audience could experience different ways of dealing with sustainable issues in the theatre. The students were given three contemporary texts by living dramatists: "Culpa" by Taro Vestøl Cooper, "The Hangar" by Toril Solvang and "The Frontrunners" by Alexandra Moltke Johansen, all three of which address the climate crisis in different ways. In 2023, students worked on "The Cherry Orchard" (1904) by Anton Chekhov, which led to three different productions: "In Memory of", "Face to Face" and "If the World Was Mine".



Figure 1. A moment in the performance “People and their Enemies” based on Henrik Ibsen’s “An Enemy of the people”. In Ibsen’s original manuscript, Dr. Stockmann finds out the spa water is contaminated with bacteria, something that will have negative repercussions for the town’s economy. This image shows a moment in the students’ version where Eila Fjose, Elias Hoffart and Tom Jørgen Kilvik Ruøy read reports that evidence the existence of radon in Svartlamoen, Trondheim, something that threatens the existence of the punk community in the city centre. Photo: Elena Pérez.

The Theatre Production course addresses UN Sustainable Development Goal no. 12, Responsible Consumption and Production. It has eight targets aimed at ensuring sustainable consumption and production patterns, by reducing waste generation and minimising energy consumption (United Nations, 2023). We are working actively with four targets: 12.4 by reducing the use of hazardous chemicals that are used in costumes and on the stage; 12.5 by substantially reducing waste generation through prevention, reduction, recycling and reuse, as we adhere to the 4R principles (Reduce, Reuse, Repurpose and Recycle) in the performance production process; 12.7 by promoting public procurement practices that are sustainable, as we challenge

the suppliers that deliver materials to us and to NTNU as a whole; and finally, 12.8 by ensuring that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature by creating theatre productions where audiences are presented with ecological dilemmas and where nature is given a voice.

Curatorial choices and course design

In this section I will describe how the course design was adjusted to include sustainability. Some of the changes were made before the course started by myself as the person responsible for the course, and other changes were made during the course, as it progressed, in collaboration with the team of lecturers and artists.

1. Sustainability is both the theme onstage and the method backstage

As I designed the course, my goal was to put sustainability at the centre and as far as possible plot it into the existing course design, so that it would not be considered an occasional addition, but an integral and even necessary tool of the course. As mentioned earlier, I decided to double up the sustainable focus and place it both onstage and backstage by including this perspective in the exam: "All groups must relate to sustainability, both at a practical level during the working process and at an artistic level in the performance." Here, I mean that sustainability must be the topic of the theatre production, as well as the process leading to the final performance. I thereby aimed to force it both onstage and backstage, while simultaneously allowing the freedom to determine how this could be done. My hypothesis was that having sustainability as both a topic onstage and a process offstage could lead to new, unexpected connections and synergies that would be reflected in the final performances and have an artistic impact. This is something that happened and will be discussed later in relation to the empirical data.

2. Establishing collaboration with experts in the theatre sector

I established collaboration with sustainability experts in the theatre sector and involved them in the course as lecturers and supervisors from the beginning to the end of the course. Actors and leaders of BS NU, Jacob Teglgård and Christian Gade Bjerrum, were hired to teach and supervise students throughout the course. It was important to include them from the beginning to the end of the course, and not as occasional, one-off guest lecturers. They met the students four times during the ten weeks of the course. The very first day of the course was used to introduce the course's sustainable topic and present the guide, which helped to establish an

inspiring and positive sustainability atmosphere from the very first day. Their engagement, passion and belief in sustainability influenced the team of both lecturers and students.

The guest lecturers met the students the second time to introduce the Climate Policy and Action Plan and help student groups make their own plan. The third meeting was used to adjust the Climate Policy and Action Plan after it had been used for a few weeks. This was very important because sometimes the sustainable actions that students impose on themselves can be either too difficult or too easy. This meeting was vital to ensure a realistic process. The last time they met was after the exam, to evaluate the sustainability work. Here, it was important to think about ways to pass on the acquired knowledge to the next groups.

3. Turning it “sustainable”: what does it mean for us?

What does it mean to turn a theatre production into a sustainable theatre production? How can this be measured? During the three-year span of the project, we first set our own sustainable goals based on our own conditions and context, following the 4R principles (Reduce, Reuse, Repurpose and Recycle) in the Guide for Sustainable Theatre Production (Julie’s Bicycle, 2013; Bæredygtig Scenekunst NU, 2020a), and we combined this method with the five-checkpoint standard proposed by the Theatre Green Book (Buro Happold, 2021).

When I implemented the sustainability focus in the Theatre Production course in 2021, I did not fully know what turning the course sustainable exactly meant, but I knew that I wanted to do more on this front than I had achieved up to that point. At the Section for Drama and Theatre we wanted to resolve some issues in our practical courses that we had never managed to address properly. Could we stop using plastic materials in scenography, such as using balloons as props? Could we find a way to recycle properly, which never seemed to happen successfully? Could we find a way to systematically switch off the lights in the rehearsal studios when they were not being used? In conversation with BS NU, we understood that these were some of the aims of the professional staff, and not the aims of the students. We then decided to let students determine their own goals with the help of the Climate Policy and Action Plan document. Our aim was to measure the different sets of variables that each group themselves would decide to work on, so that the effort would be within our reach in our given context. For the first time, we were attempting to be more sustainable in our teaching, with a course for first-year students. This means that

instead of measuring carbon emissions, we would instead measure how much we had “saved” in different aspects of production by taking different sustainable actions using the 4Rs as guiding principles (Reduce, Reuse, Repurpose and Recycle).

We used the same method in 2022. In 2023, Bæredygtig Kulturliv NU (BK NU) introduced a change, and provided us with the standards established by the Theatre Green Book that were being adopted by the industry to assess whether a theatre production was sustainable. These are:

1. 50% of materials used either come from sustainable sources or are recycled.
2. 65% of the materials used have a longer life, and are stored, recycled, or reused by other actors after the production is over.
3. Avoiding toxic, harmful and unsustainable materials.
4. Operating technical and electronic systems sustainably.
5. Minimising unnecessary travel, transport and deliveries (Bjerrum & Teglgaard, 2023; Buro Happold, 2021).

This criterion sets a specific standard for a sustainable theatre production, regardless of context. This is in contrast to the 4R method that takes context as its starting point. While both have their benefits and limitations, the standards enable those working with sustainable theatre production to be on the same page, because everyone is measuring the same things. We decided to use the Theatre Green Book standards, in combination with the 4R principles from Julie’s Bicycle, to enable us to ask the students to observe five very specific standards, while simultaneously adapting them to their own context.

4. *The 4Rs as guiding principles*

The Sustainable Production Guide created by Julie’s Bicycle in 2013 and translated into Danish by BS NU in 2020 was the fundamental document for our course. The guide is “for artistic directors, producers, directors, production managers, lighting designers and technicians, set designers and builders, costume designers, and performing arts practitioners across the industry seeking to understand and reduce their environmental impacts” (Julie’s Bicycle, 2013, p. 1).

One of the most valuable insights from the guide was the fundamental principles underlying all the actions that can be taken. These are the 4Rs: Reduce, Reuse, Repurpose and Recycle (Julie's Bicycle, 2013, p. 5).

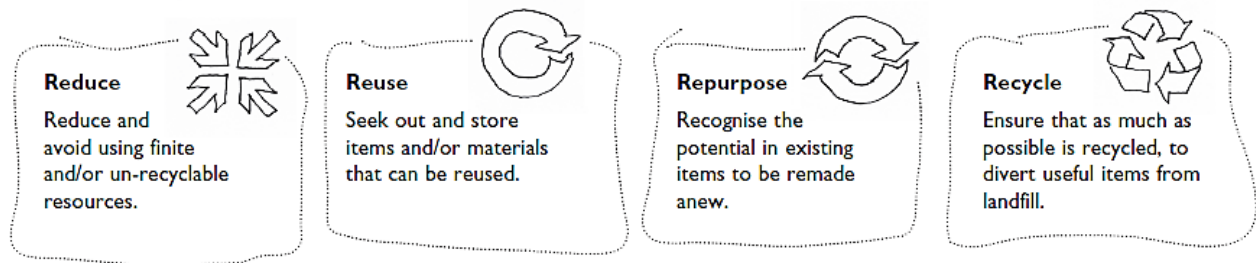


Figure 2. The 4R principles explained. They can be used to question various aspects of a theatre production, and they are also useful outside the theatre production process in everyday life.

For the course, it was useful to question all our actions in the light of the 4Rs. Several groups sought to Reduce the use of scenography objects. When this was not possible, they Reused from NTNU's storage or borrowed materials from the city theatre house, Trøndelag Theatre. They also Repurposed objects to appear as something else onstage (a table became a podium) and made sure that most of their scenography objects would have a life afterwards by making agreements with the school or other agents' storage to avoid the objects becoming waste. One of the first things realised as this work started was that working with sustainability is far more than recycling, but it is often thought of as mostly recycling. The real work for us was to question how all the roles could Reduce, Reuse, Repurpose and Recycle in the different areas identified in the pre-production stage, rehearsal and production stage, and post-production stage, and in all the roles.

The 4Rs also allowed for actions that did not initially seem to be connected to the production as such, but to the process around the production. For example, several groups aimed to Reduce their intake of meat by establishing three vegetarian days a week. Other groups sought to Reuse by borrowing a microwave oven and coffee machine, to be able to bring in food from home and eat it in the studios, and two groups started different initiatives to Recycle properly. One group aimed to recycle plastic on campus properly by ensuring that the maintenance office would establish waste containers for plastic in the department, as there were no designated bins for

plastic. Another group joined a “clean the beach” initiative as they wanted to do something extra for the environment during the course of the production.

5. Climate policy and action plan

A Climate Policy and Action Plan is a crucial document to connect specific practical actions with abstract thinking on sustainability. It helps participants recognise a series of goals to reduce the climate footprint of a theatre production process. It also identifies a list of actions to be used to achieve the goals that the group has set for itself. BK NU provided the course with its own Climate Policy and Action Plan, tailor-made for our needs, and guided our students in crafting, adjusting and evaluating this plan. This was a mandatory submission for student groups, and it was also used as the basis for students’ reflections in the final reports.

The Climate Policy and Action Plan is divided into two sections: the Climate Policy and the Action Plan. The former asks the group to articulate their motivation for taking environmental action and the level of environmental ambition, and to identify areas of activity in which the main impacts will occur.

The Action Plan defines some key objectives, and then defines various improvement actions for each objective. The actions proposed by the groups should be as specific as possible. For this reason, the Action Plan requires the group to name a person responsible for ensuring the action is carried out, a deadline for the action to be completed, and a Key performance Indicator (KPI) as a quantifiable measure of performance over time for a specific objective (see example below).

Target	Actions	Responsibility	Deadline	KPI
Example: Reduce use of paper	Only use iPads or other tablets to read the script	Choose one member of the group to be in charge of surveying that everybody uses tablets	End date of theatre production	Write down every time you would have printed a new script and at the end of production, see how many pieces of paper you “saved” from being printed.

Figure 3.

This example was given to us by BS NU and was adopted and used by most groups, but instead of using tablets, students used their own mobile phones, even though some reported this being quite uncomfortable at times. The amount of paper saved varied from group to group, given the length of the script and the needs of each group. The paper saved amounted to an average of 300-400 sheets of paper per group.

Analysis: from counting to more diverse artistic expression

In this section, I will discuss how the practical implementation of sustainability goals as part of the theatre production surpassed the realm of the practical and contributed to creating different artistic expressions onstage. What are the qualities of the sustainable process? What does the counting and measuring mean for the artistic choices? I will start with the artistic expression that results from the implementation of the 4Rs, before continuing with the artistic expression related to the Climate Policy and Action Plan.

The 4R principles (Reduce, Reuse, Repurpose, Recycle) as artistic choices

Tanja Beer argues that “taking a minimalist approach is one of many examples of how to combine ecological thinking with theatre making” (2021, p. 50). The Green Theatre Book states that “sustainability might, at first sight, suggest austerity and minimalism. And those may be approaches some theatre artists choose (...) Sustainability doesn’t dictate what shows should look like” (Buro Happold, p.15). In our case, half of the groups sought to Reduce the use of scenography, applying the 4Rs with “Reduce” as the driving principle, resulting in minimalistic performances that used very few material elements. The “Face to Face” group from 2023 that staged “The Cherry Orchard” decided to focus on acting, costumes and make-up, and avoided using scenography elements. They only used two chairs and a wagon during one scene, and the rest of the performance took place in an empty black box, where lighting was used creatively to create divisions in the space. 90% of the performance came from reused or sustainable sources. The “An Invisible Truth” group from 2021 that staged “An Enemy of the People” also aimed at using the fewest possible scenography elements, connecting to the 4Rs’ Reduce principle. They used two podiums, a large projection textile surface and a few mousseline drapes hanging from the ceiling. 92% came from reused or sustainable sources.

Repurposing objects and materials onstage has become an artistic choice and concept that connects with Bertolt Brecht’s famous alienation effect, where material

objects from backstage are displayed for the audience to see. The “An Invisible Truth” group from 2021 mentioned above that staged “An Enemy of the People” applied the 4R Repurpose principle, in addition to the Reduce principle. The few scenography objects they included on stage, together with the lighting, were visibly repurposed on stage again and again throughout the performance, instead of this taking place backstage. The actors used the objects and gave them different qualities, while performing different actions for the narrative. For instance, they turned the podiums into a table, a door, stones and a booth. They turned the mousseline drapes into clouds, stars and bacteria. They also operated the lighting and changed it while still onstage. This repurposing of scenography objects and materials onstage allowed them to stage different scenes with the same objects, while displaying their creativity in making fiction. The act of repurposing itself was staged, echoing Bertolt Brecht’s alienation effect, to draw attention to the theatre making tools, so as to foster critical distance in the audience. Creativity is displayed through repurposing, while the labour this requires becomes visible. Repurposing is part of the sustainable process, as it is a sustainable principle – to creatively make do with limited resources – and an artistic strategy to create a critical distance to the process.

Implementing Reuse and Repurpose principles leads to highly developed costumes for the performances, as students spend time and energy repurposing existing materials from the department’s own costume wardrobe. In 2021, we offered students a workshop on how to reuse and repurpose clothing by cutting, sewing and dyeing, and established a repurpose station in the school’s workshop for this purpose. Most student groups used the repurpose station every year, but to different degrees. The group staging “The Hangar” in 2022 sewed all their costumes by repurposing IKEA’s blankets they found in our own costume wardrobe. As they had seven characters to dress, they had to purchase extra material to supplement the existing material used, which led to discussion of the paradox of having to buy materials to realise a sustainable concept, going against the Reduce principle. Counting the number of pieces from reused materials versus the number of pieces from non-sustainable materials showed the latter to be less than the former, which made them decide to go ahead and purchase the extra materials, so that they would be able to pursue their unitary aesthetic and expression. The extra effort put into the costumes paid off, with a mention for the good work on the costumes by the external examiner, who stated that the costumes’ Reuse and Repurpose expression visualised the way of life of the people trapped in the hangar, who have limited resources and need to reuse and repurpose to meet their needs.

The last of the four Rs, Recycling, was also used as an artistic strategy. Students initiated various recycling actions that resulted in props made from recycled materials. Several groups recycled their own waste, while some collected plastic in the campus area, mostly bags and bottles, and others left campus for a cleaning trip to the fjord. Through supervision with BS NU, students were advised to experiment with the expressive possibilities of waste. Could waste be used on stage artistically? Most groups improvised with it to see whether it matched their concept. The “An Enemy of the People” group from 2021 tried out various strategies to include the collected waste, first piling it up to make a visual impact as scenography, and later by using it as a prop, having a character throw it to another character, in an expression of frustration, where waste was used in a conversation. The “Culpa!” group from 2022 used a few bags of plastic waste in the last scene of their performance. A character comes onto the stage and throws the waste at the four characters, who are lying on the floor as if they were dead in their coffins. The waste symbolises the state of pollution in which they left the earth and points to how they had failed in their futile attempts to save the planet. The “Frontrunners” group from 2022 had a character covered in the waste they had collected on their trip to the fjord.

The Climate Policy and Action Plan

In this section, I discuss three examples that show how the motivation to work with sustainability became an artistic interpretation and choice that propelled the creative process forward.

The “If the world was mine” group from 2023, staging “The Cherry Orchard”, wrote in their Climate Policy that one of their motivations for taking environmental action was to criticise people’s attitude towards the world and themselves. They identified an existing narcissistic and anthropocentric view of the world they wanted to criticise, where “the world is about me and therefore I can do what I want” (Hvis verden var min, 2023, p. 81). In their version of “The Cherry Orchard” Anja’s character becomes the main character, instead of her mother, who is the main character in the original play. They changed her story to be that of a narcissist who wanted to chop down the cherry orchard and use the wood to build modern summer houses for profit. The rest of the characters seek to stop this strongly opinionated woman from achieving this idea, but fail to stop her. The summer house project ends up as a fiasco, which is unsurprising, given how rushed, forced and unsteadily Anja leads the process, and we, the audience, are asked about our responsibility for this. How can we let this happen? Why do we stay unmoved in front of powerful and narcissistic people, even

if we can anticipate things are not going as they should? The environmental ambition of this group became its interpretation, and the message of their production.

The group “In Memory of...” from 2023 wrote in their Climate Policy:

Our main motivation for working with sustainability is our love of nature, animals and children. For Norway, nature is part of our cultural heritage, which it is important to take care of and appreciate. We want to give nature a voice, because if not us then who? We want to bring nature onto the stage and give the audience a sense of identity linked to nature, through memories, relationships and childhood. By giving nature a voice, we hope that the public will gain a sense of empathy for nature so that they will want to take care of it. Through the performance, we want to speak to the audience’s senses so that the audience will remember what nature is to them. What it is in relation to identity, feelings, emotions, experiences, memories and experiences. We want to influence sustainability in an indirect way, without being moralising. Because we create relationships with nature in the same way as we create relationships with people, and nature is important for understanding ourselves, but also for creating perspective for the life we live. By living in harmony with nature – we believe that we become better people. For many in the group, nature is the place where we feel most like ourselves, it is where we exhale, breathe deep into our stomachs, and forget time and place. It is in nature, we feel small – in a good way – we feel that there is something bigger than us. (p. 43)

This production’s concept was to stage nature, something the group articulated early on in their Climate Policy. They recreated the atmosphere in the garden in the scenography by using textiles and lighting. They created a character that represented nature through sequences of choreographic dance/movements and visualised how nature gives, but also takes. In the first scene, they staged the death of Grisha, Lubja’s son, in the river that runs through the Cherry Orchard. Grisha is playing hide and seek when he falls into the river and is taken by the current. The character of Grisha then enters a choreography sequence with the character that stages nature, visualising the struggle for life that nature ends up winning. This scene does not exist in the original script, and the students created it from scratch by using Katie Mitchell’s

method whereby researching previous events in the script can lead to new directions for the production (2009).



Figure 4. A moment in the performance “In Memory of...”. In this scene we hear a monologue from the servant, Firs (performed by Magnus Mardahl), where he reminisces on the good old times when the harvesting of the cherry orchard was important to the family’s economic and social life. Meanwhile, the actors in the back (Lisa Kraglund, Helga Rokne, Eli Romstad Helgemo and Malene Carolusson Myrvang), perform nature and the different actions of the harvesting process, in an attempt to bring nature back. Photo: Marie Antonsen.

In their action plan, the “Obsessed with the truth” group from 2021 that staged “An Enemy of the People” decided to create a new activist character who articulated a message of sustainability. They turn the existing character, Billing, into Kim. In Ibsen’s original version, Billing is assistant editor at the town’s liberal newspaper. He has progressive ideals that he proclaims, but it is eventually revealed that he himself has applied for a job within the local government he is supposedly against. The group decided to erase this hypocritical aspect of the original play and instead show how authorities sideline and ignore climate activists. The group explains in their group report that:

“Kim is a radical climate activist the audience can identify with and who criticises the superior power. She has previous links to climate activist groups and is clearly

concerned with the reopening of the industrial area and its consequences for nature, which go beyond waste substances in the water". (p. 17-18)

The character is a manifestation of the criticism of some authorities' lack of action when it comes to climate measures. Kim is a manifestation of the sustainability focus on their dramaturgy, voicing the group's sustainability values and ideas written in the climate action plan.

Conclusion

The implementation of the sustainability goals and tools that were used led to some artistic choices that were manifested in several groups over three years. In connection with working with the 4Rs, I have discussed how the productions had some shared characteristics: minimalist productions that reduce scenography objects and props, a reused aesthetic expression, visualising repurposing of objects onstage as an alienation strategy to maintain critical distance, and use of waste as scenography and props. While working on the Climate Policy and Action Plan I discussed how some groups' environmental ambitions became the artistic message of their productions' artistic basis for their concept. This also led to staging nature by creating characters that either became nature or articulated nature's voice. This is aligned with the claim that eco-theatre performances are becoming a form of environmental activism (Balcare, 2023, p.110).

The 4R principles were important to establish a set of values and principles to facilitate discussion and measurement in each context. The production guide inspired working with sustainability in all areas of the theatre production. The detailed work of the Climate Policy and Action Plan holds great potential. Actions such as measuring savings, as KPIs (such as for waste management), which may seem tedious and boring at times, have the potential to become artistic material for the stage.

As the focus of the 4Rs is on minimising, one might think that this reduces possibilities, but I would argue that the opposite is true, as it opens new avenues. By engaging in a sustainable process, students start to change position from a very hands-on and concrete perspective, echoing post-humanist philosophies. They start to look at the world from a different perspective in which humans are decentered and nature and non-human actors are given a voice.

Embedding the process backstage and onstage contributes to creating a final product that is aligned with the values from which it has been created, resulting in a

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robust production where process and result are synced and deeply rooted in each other.

Sustainability, when fully integrated, can be a tool for creative expression in theatre. It is another tool in the toolbox, in the same way that bodies, lights, sound and video are theatre tools.

The values embedded in sustainability that are manifested through the 4Rs are aligned with artistic values of work with found materials, and limitations are seen as possibilities. This is a way of understanding art-making, where limitations are seen as possibilities for creative expression. This connection between sustainability and creativity was articulated by one of the students in a news story published in *Universitetsavisa* about the course:

At first, I wasn't so positive. I thought it seemed a bit strange and it wasn't something I have tried before. But then you realise that it becomes a kind of positive limitation, and the fact that you set limits to creativity means that you can also be creative in other ways. (Javorovic, 2021)

About the author

Elena Pérez is Associate Professor in Drama and Theatre at NTNU. In her doctoral thesis (2016) she investigated the creative potential of digital media in the performing arts by using practice-based research methodology. Later, and as a consequence of the urgency of the climate crisis, she became engaged with sustainability, and expanded her research interests to include how the performing arts can engage in the sustainable transition, working with this in practice as part of teaching, and also theoretically. She is a member of the Digital Humanities Research Group at NTNU.

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