

# Assessing the impacts of scientific theatre on the audience: the case of *Crema Groenlàndia*

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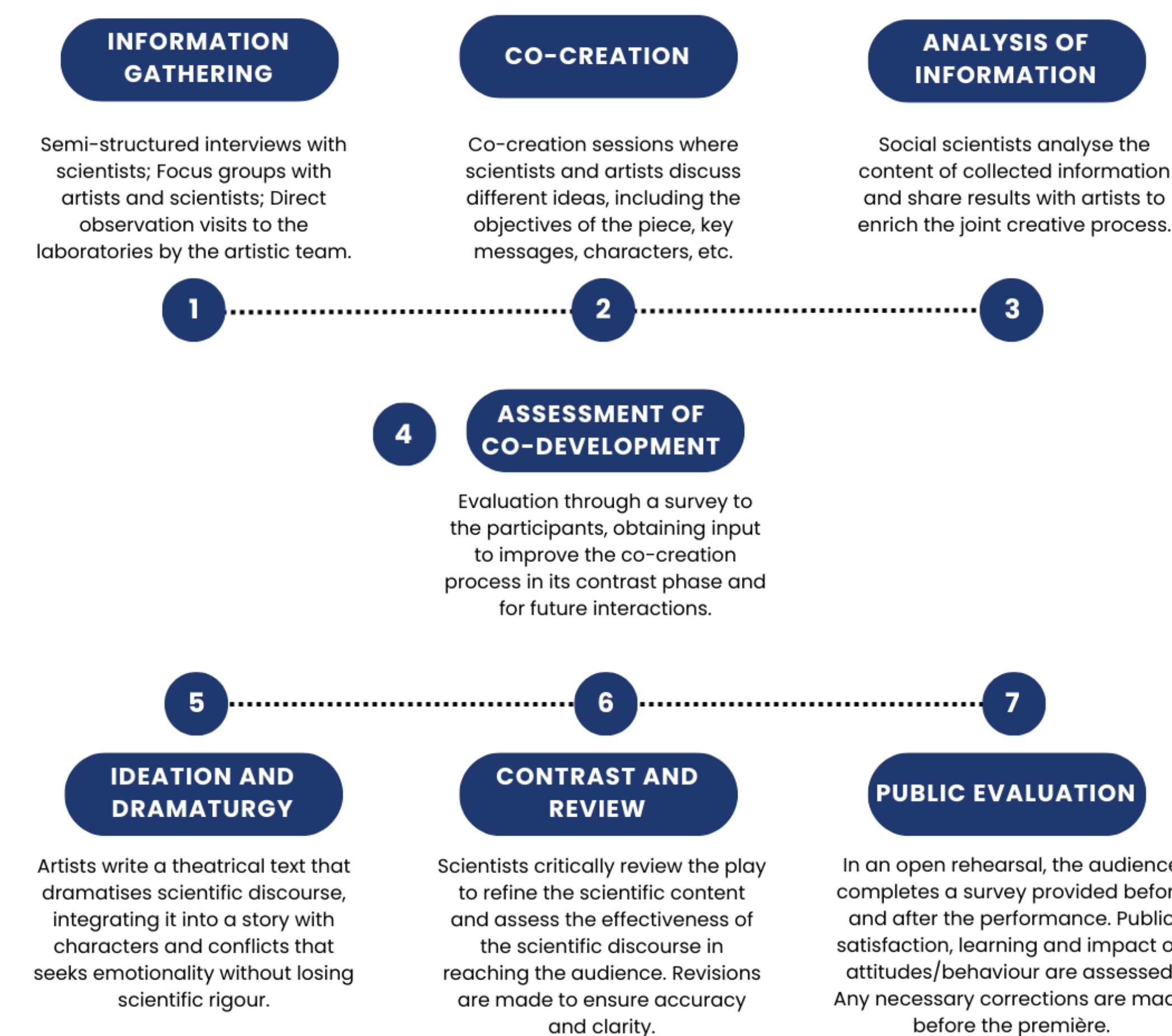


## Introduction

According to Eurobarometer (2025), 85% of Europeans considers climate change a serious global problem. Although the topic continuously appears in the media, some citizens report difficulty understanding and navigating climate information. **We apply the scientific theatre approach**, which combines the domains of science education and the arts, to provide a narrative context and aesthetic meaning to climate change concepts and create spaces of debate and reflection with the public.

## Co-creation methodology for scientific theatre

A co-creation methodology has been developed, which can be adapted in future scientific theatre projects seeking to integrate interdisciplinary and co-creative approaches.



## The play

Through the life of Diana, a climate scientist who studies the oceans, we witness humanity's story in the face of global warming. Her personal biography and the collective history intertwine to speak about the past, the present, and possible futures.



Opening scene with dialog between Greenlandic Inuit, Denmark, and the U.S. (top). Scene on the beginning of the main characters' passion to study the ocean and whales (middle). Post-performance debate with the public (bottom).

## Objectives

- 1. Develop a new co-creation methodology** for scientific theatre among climate scientists, social scientists and artists.
- 2. Explain how the science of climate change is done**, showing scientists in their real context and breaking stereotypes.
- 3. Sensitise and disseminate** knowledge about climate change and encourage critical thinking.

## The impact

We analyse the impact of the play following the *Framework for Evaluating Impacts of Informal Science Education Projects*. Three types of surveys were conducted with different objectives.

Surveys	Responses	Dates	Objective
Pre-performance (students, compulsory)	44	28-30 May 2025	Assess respondents' attitudes and knowledge about climate science and climate change (as an indicator of the current educational context)
Post-performance (rehearsal, students & elders, compulsory)	54 (24 completed pre-performance)	30 May 2025	Assess respondents' satisfaction with the play and identify aspects for improvement to adjust the play following suggestions from the audience
Post-performance (general public, voluntary)	36	18 June (premiere), 26-29 June 2025	Assess respondents' satisfaction with the play, attitudes, and learnings regarding the presented topics.

### 1. Pre-performance survey

Reveals the need to strengthen climate literacy in educational settings.

Most students recognised human activity as the main cause of climate change. Many showed limited awareness of the scientific consensus, low interest in further learning about climate change and scientists, and poor familiarity with the Paris Agreement and the Conference of the Parties.

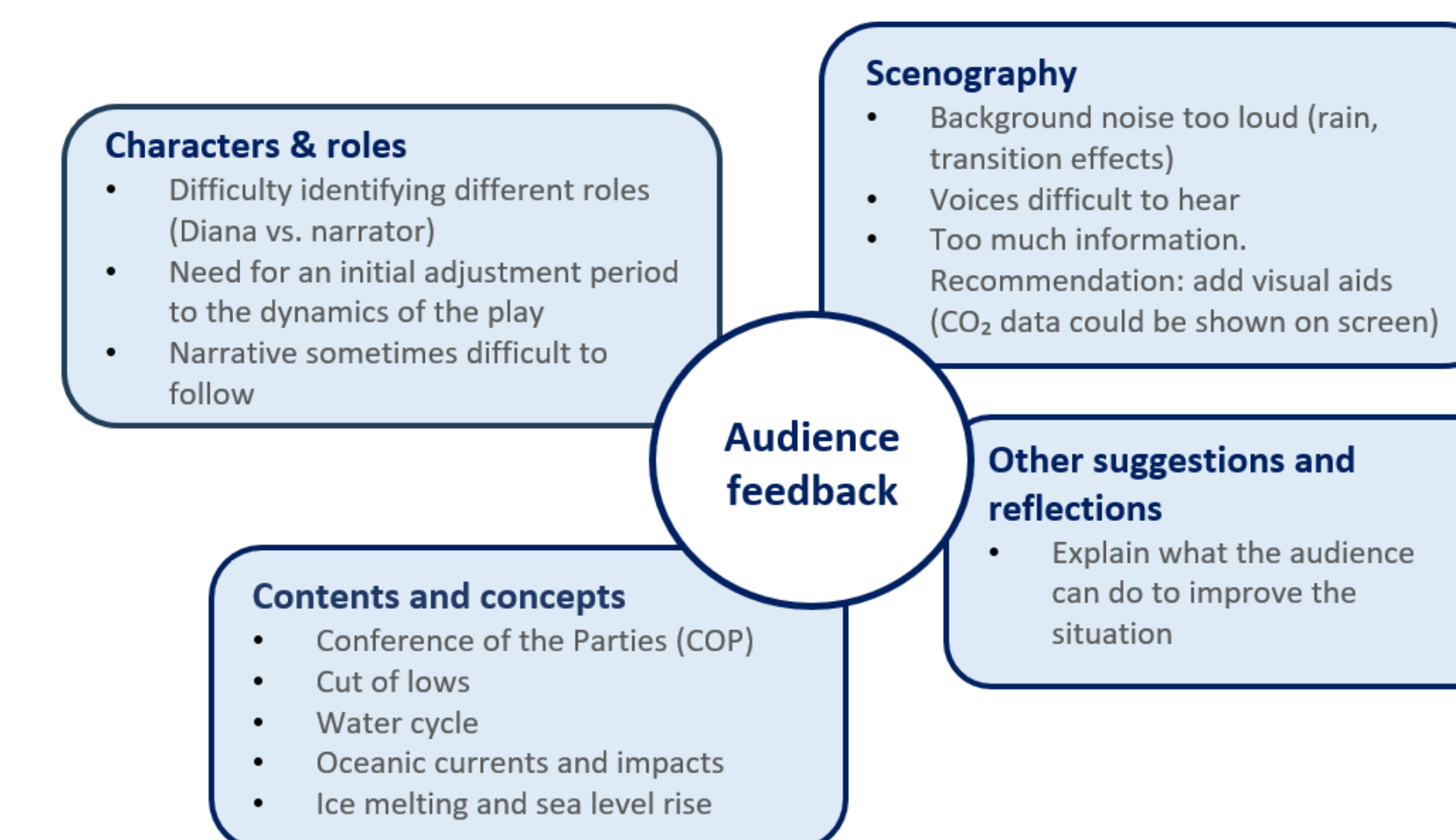
### 2. Play rehearsal survey

Informs improvements in the format and content of the play, better aligning the communication strategy with the objectives of learning and attitude change.

### 3. Post-performance survey

Assesses the impact of the play on the learnings, attitudes, and satisfaction of the audience.

- 80.5% feels more informed about climate change than before
- 20% hears about the Paris Agreement for the first time during the play
- 83.3% feels informed, 58.3 worried and 25% motivated
- 80.5% wants to know what can do personally to fight against climate change
- 97% feels very to moderately satisfied with the play
- Post-performance discussion calls for more ambitious policies and explores collective actions to fight climate change through association or voting



## Conclusions

- Evidence that **interdisciplinary arts-based approaches** can communicate complex scientific concepts while engaging audiences.
- Importance of integrating **evaluation as a core component** of science communication activities, rather than treating it retrospectively.
- This **approach can be adapted** by other science communication professionals who wish to co-create, implement, and evaluate science theatre interventions in diverse contexts.
- Further research is needed to better understand the impacts of similar arts-based approaches across **different socio-demographic groups**.

Category	Impact
Learning	The audience understands climate change and its impacts and inequities
Learning	The audience understands how the science of climate change is made
Learning	The audience understands the importance of society to adapt to/mitigate climate change
Learning	The audience gets information on actions/initiatives that help reduce climate change
Satisfaction	The audience is satisfied with the performance
Attitude	The audience shows trust in the scientific method and climate science/scientists
Attitude	The audience shows willingness to act against climate change
Other	The play breaks stereotypes
Other	The play encourages critical thinking



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