Sustainability in a Museum Perspective

Insights and Guidance: Prioritising Sustainability Topics at Danish Museums

Green Museum Academy

This report was made by the Green Museum Academy in Collaboration with Nordic Sustainability

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Foreword

Establishing and evaluating the negative impact museums have on the planet and society is a difficult and time-consuming exercise. Many museums are unsure of which steps they should take and what to prioritise. The term sustainability covers a wide range of topics. So how are we to gauge the different levels of impact of museums and on what basis should sustainability measures be selected and prioritised?

With the English translation of this report, we wish to provide our international colleagues with knowledge and inspiration to further the sustainable transition of museums.

ESG (Environmental, Social and Governance) reporting on the impact of museums on the environment and society and their level of transparency and accountability is unfamiliar territory for many museums. Though the context of this report is Danish, we believe that many points can be translated to an international setting. We hope to guide towards a common understanding of our shared challenges and opportunities and acquaint museums with European sustainability reporting standards.

The goal of this report by the Green Museum Academy in collaboration with Nordic Sustainability is to encourage more museums to decide how to prioritise efforts to reduce their negative impact and increase their positive impact on the planet, people and society. Using established facts and methods, the report provides a well-informed basis for selecting the sustainability measures that should be granted highest priority at Danish museums. The report thus represents critical input on the development of museums in a decade marked by massive change. Museums have to adapt to a green and just future, and this report marks a crucial step in contributing to that development.

The Social Relevance of Museums
As a direct result of humanmade disruption to the balance of the earth and its social and environmental consequences unfolding worldwide, we face one of the most far-reaching transitions in human history. Our collective severance from the natural world seems close to complete, and we might ask that if museums are not the ones to restore connections between the people and nature of the past and inspire positive visions of the future, who is?

No public institutions have a deeper understanding of time than museums.

Researching, collecting, registering, preserving and disseminating our cultural heritage makes museums central to shaping dominant narratives about our past and present. Narratives that point to the future and pave the way for us to imagine a world where generations of the future will have the same opportunities to have their needs met as those who came before them.

The Positive Impact and Unique Potential of Museums
Museums are not only the guardians of our cultural heritage, they are living institutions that can inspire, educate and bring us together. They play a crucial role in spreading knowledge, increasing understanding and creating dialogue about the key social challenges we face. They bring the past to life, invite us to take the best it has to offer into the future, and encourage us to learn from difficult moments in history so we can prevent them being repeated.

By shaping opinion and engaging with society museums strengthen our collective identity and contribute to social cohesion. They create communities where different perspectives can be nurtured and exchanged, and where we can feel at home but also be challenged beyond our comfort zones.

Museums create inclusive, explorative spaces where human and social contexts that are at risk can be acknowledged, discussed and addressed. Museums help us see the world around us with fresh eyes, making them key to starting the conversations we need to have to create a new narrative for our species - a narrative dominated by the resilience and welfare of communities and the natural world.

With approximately 17 million visitors a year museums in Denmark have a huge potential to influence their visitors and contribute to sustainable education and development by facilitating strong connections between art, culture, history, science and nature. As institutions that at their very core exist to enrich and challenge us, they can become powerful role models for sustainable change that can spread like ripple effects throughout society. In other words, thanks to their unique combination of historical awareness, sense of place, accessibility and public trust museums are in a unique position to contribute to the world around them.

Report Contents
This report presents a double materiality assessment of the Danish museum sector using 14 ESG topics to chart the sources of the negative impact museums can have on the environment, people and society. Whilst some of the opportunities museums have to be a positive influence in advancing sustainability are mentioned in the report, these are not its focus. Instead the report charts the negative impact of museums in order to provide a qualified basis to support the strategic development of sustainability initiatives.

Upon reading this report, it should be clear that museums in general contribute with few material negative impacts. Instead, museums face significant potential regarding their positive impacts.

The goal of the report is to provide museums with the knowledge they need to navigate the complex landscape of sustainability. Our hope is that museums will be able to use the report as a launch pad to establish ambitious sustainability goals and integrate sustainable practices in order to serve as role models for their visitors and other institutions.

Birgitte Kehler Holst
Project manager
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Association of Danish Museums

Reader's Guide

This report introduces Danish museums to new terminology that has become central in working with organisational sustainability. This new language for the activities and social responsibility of museums can take a little getting used to, so we recommend you set aside time to read the report in depth, particularly the introductory sections explaining its key concepts.

The goal of the report is to inform the museum sector about its material negative impact on the environment, people and society, as well as to guide individual museums on the application of the report's results in their own context. The sections of the report in green are practical guides to help museums understand the results of the assessment in the context of their own organisation. This enables museums to conduct a context-specific double material assessment that can then be used to prioritise a strategic approach to sustainability.

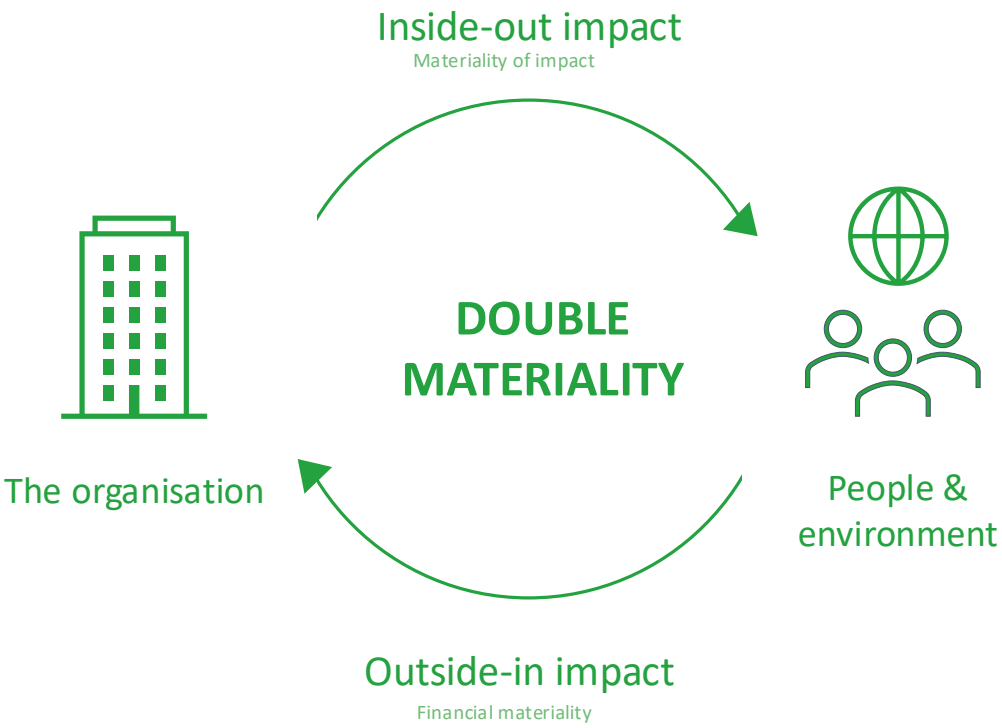
Double Materiality

This report is based on a double materiality assessment of the Danish museum sector. The concept of double materiality has been formulated by the EU as an integral part of its Corporate Sustainability Reporting Directive (CSRD) which increases the demands made on companies in terms of sustainability reporting and management.

The purpose of a double materiality assessment is to identify the most important sustainability topics and measures for an organisation to address or implement. Assessing double materiality means that an organisation evaluates the impact of various topics from two perspectives: 1) how the organisation impacts on the world around it, including the environment, people and society, and 2) how the world around it impacts on the organisation. Both forms of impact can be negative or positive, as well as real and present or a risk or opportunity.

A sustainability topic is considered material if an organisation has a significant *negative* or *positive* impact on the environment, people or society. The topic is also material if it poses significant risks or represents significant opportunities for the organisation. A topic can therefore be material from one or both perspectives.

However, this report does not examine the positive impacts of museums, even though these are ubiquitous in the museum sector – as described in the preface of this report. This is due to a deliberate focus on identifying the negative impacts of museums in order to guide the management of the most significant negative footprints. Instead, 6 ESG topics have been marked with a star to signify the potential for museums to manage their own and others' negative impacts and a short description of key points of action.



MATERIALITY OF IMPACT

How significant is the **negative impact** on people and the environment?

How significant is the **positive impact** on the planet and society?

FINANCIAL MATERIALITY

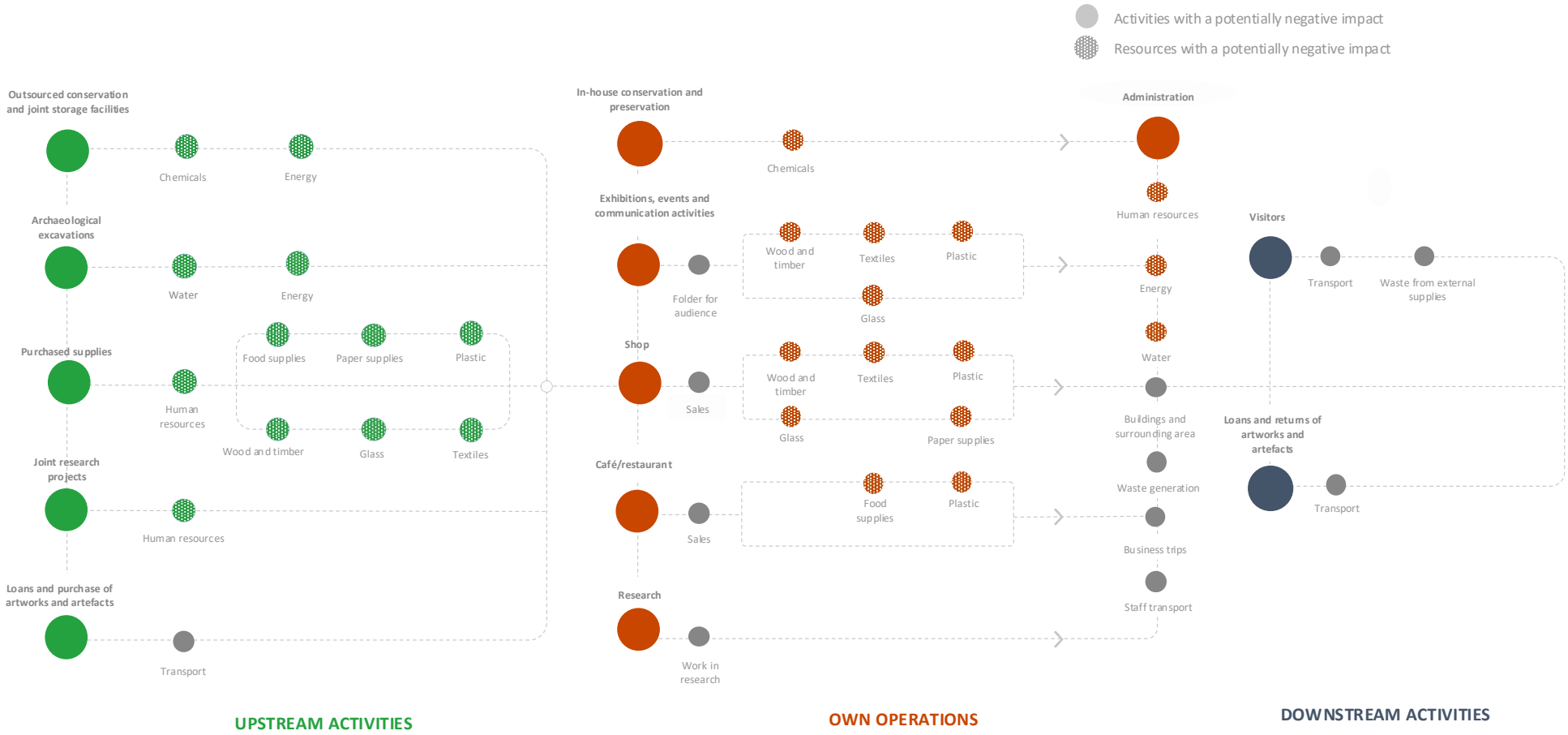
How significant is the expected **negative impact** on the organisation (risks)?

Materiality across the Museum Value Chain

It has been the custom for many organisations to focus efforts in sustainability on activities in the house involving only employees. Often, however, activities outside of this scope make up a significant part of the negative impacts on environment, people and society connected to an organisation. These activities take place in the organisation's so-called value chain. Following new standards from the EU, it is now common practice to include impacts in own operations as well as in the value chain. In this material assessment, rather than focussing exclusively on the impact of the museum's own activities, negative impacts across the entire museum value chain are analysed in order to provide as full a picture as possible.

The value chain covers all the activities, resources and conditions involved in an organisation's creation of a product or service. The value chain is often divided into three parts. Own operations covers in-house activities managed by the organisation. At museums this includes activities such as the installation of exhibitions, on-site conservation, and/or running a museum shop. The upstream activities category covers the activities that take place before a service or product arrives at the museum. This can include supply chains, but also collaborations and partnerships. Upstream activities at museums can include the purchase of goods that have been produced elsewhere or services such the restoration or preservation of objects at an external facility the museum does not own or control. The downstream activities category refers to the use or consumption of a museum's products or services, such as lending exhibits to other museums or the means of transport visitors use to get to and from the museum.

The chart below illustrates a museum's core activities across the value chain. The largest circles represent core activities followed by sub-activities or resources involved in the respective activities. The double materiality assessment incorporates the entire museum value chain in order to take account of the negative impact each activity has on the world around the museum and vice versa.


Activities with a potentially negative impact
Resources with a potentially negative impact
Outsourced conservation and joint storage facilities
Chemicals
Energy
Archaeological excavations
Water
Energy
Purchased supplies
Food supplies
Paper supplies
Plastic
Human resources
Wood and timber
Glass
Textiles
Joint research projects
Human resources
Loans and purchase of artworks and artefacts
Transport
In-house conservation and preservation
Chemicals
Exhibitions, events and communication activities
Folder for audience
Wood and timber
Textiles
Plastic
Glass
Shop
Sales
Wood and timber
Textiles
Plastic
Glass
Paper supplies
Café/restaurant
Sales
Food supplies
Plastic
Research
Work in research
Administration
Human resources
Energy
Water
Buildings and surrounding area
Waste generation
Business trips
Staff transport
Visitors
Transport
Waste from external supplies
Loans and returns of artworks and artefacts
Transport
UPSTREAM ACTIVITIES
OWN OPERATIONS
DOWNSTREAM ACTIVITIES

Report Methodology

This report is based on a solid assessment methodology incorporating a broad range of sources including extensive desk research, data collection from selected museums, as well as the focussed input of stakeholders and experts.

The assessment focusses on 14 ESG (Environment, Social and Governance) topics identified as most relevant in a Danish museum context. These have been selected on the basis of museum sector studies, existing double materiality museum assessments, and dialogue with museum experts.

Two perspectives have been central to the choice of relevant ESG topics: 1) a museum's current or potential *negative* impact on people and the environment, and 2) the *risks* a museum faces in terms of financial costs or reputational damage. The report also identifies the opportunities represented by 6 of these 14 ESG categories based on the unique opportunity museums have, as knowledge institutions, to address their own negative impact as well as that of others.

Core museum activities have been mapped in order to identify their impact and risks across the museum value chain. Regular purchases made by the museum are central to assessing the negative impact of externally sourced goods and services. Using data from Danish museums, six categories of regular museum purchases have been identified: food, paper articles, wood and timber, plastic, glass, and textiles. The impact of museums in relationship to these categories has been assessed using existing reports on the relevant industries and desk research.

In the context of museum supplies the quantity of purchased goods per category that represents a significant potential negative impact in the value chain is set at 500,000 DKK per annum. If, for example, a museum purchases food supplies for 500,000 DKK or more a year then it should be alert to the possible negative impact of the food supplies it uses. If, however, a museum purchases food supplies for 200,000 DKK or less this can be disregarded as a source of impact. In the report the purchase of supplies within a single category exceeding 500,000 DKK is categorised as a *significant* or *major* purchase.

Sources in the public domain, interviews with experts in the museum sector and data from museums form the primary basis for assessing ESG topics. Louisiana Museum of Modern Art was one of the first museums in Denmark to conduct a double materiality assessment. This has been incorporated in the data used in the report. The National Museum of Denmark and other museums of various sizes have also contributed with quantitative and qualitative ESG data. Sources in the public domain include surveys, existing assessments, articles and books. A full list of sources can be found on pages 39 to 47 of the report. The National Museum of Denmark also participated in the validating the results of the assessment.

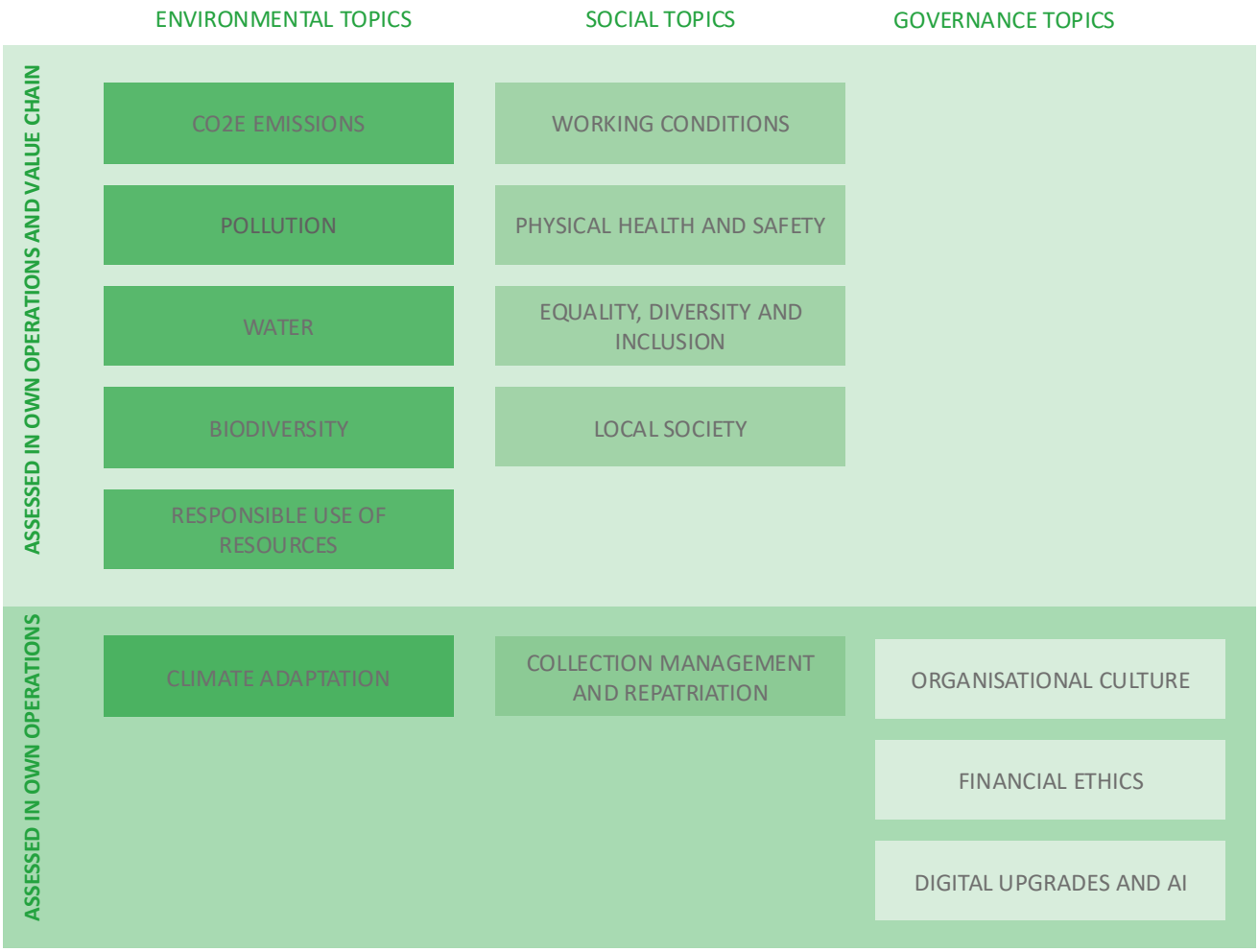
The results of the double materiality assessment are arranged in a matrix of environmental, social and governance topics from low to high indicating the materiality or importance of the sustainability topic. These results should be viewed in the knowledge that museums vary in size and the kind of activities they provide. As a result, the degree of materiality can vary across the range of sustainability topics depending on the specific museum in question. The materiality of each topic in the report is therefore evaluated on the basis of the type of museum activity that can cause the largest negative impact or represent a major risk to the organisation. *Water in the value chain*, for example, is considered significant if museums have large shops that buy and sell goods that require large quantities of water to produce. Since not all

museums have large shops, this is not a significant topic for all museums. It is therefore key that each individual museum applies the results of the assessment to its own specific context.

The report has been produced by Nordic Sustainability, a strategy consultancy specialising in double materiality assessments and sustainable transformation, in collaboration with the Green Museum Academy.

14 ESG Topics Relevant to Museums

14 ESG categories have been assessed in a double materiality assessment of museums' own activities and across the value chain. As the table of categories below shows, some categories are only assessed under own activities since they only apply to internal museum procedures and practices.



Summary

Environmental Topics: Negative Impact, Risks and Opportunities

Most of the negative impact on the environment by museums is to be found in the value chain, primarily due to the supplies museums purchase. Significant levels of the following supplies pose a high risk of a serious negative environmental impact: food supplies, paper articles, textiles, glass, plastic and wood and timber. The production of such supplies causes pollution, harms flora and fauna, involves the overconsumption of water and causes significant levels of CO2e emissions. Such products are frequently not produced with an eye to recycling, repurposing or durability, and are therefore often disposed of as waste. This in turn increases resource consumption.

The negative environmental impact of a museum's own activities is generally limited. The pollution caused by conservation is minimal due to strict regulations on the handling of small quantities of chemicals in Denmark. Museums also have a limited level of water use primarily for the personal hygiene of staff and visitors. In terms of biodiversity the impact of museums is also limited, since their primary activities do not harm flora and fauna and few museums have large outdoor areas. CO2e emissions from museums' own activities, largely related to energy consumption and the fuel used by museum vehicles, can be significant for some museums depending on the state of museum buildings and the scope of implemented measures such as LED lighting and indoor climate control. The main source of CO2e emissions is in the value chain, where the means of transport visitors use to and from museums is a significant topic.

Only in relationship to the supplies and materials they buy (responsible resource consumption) can museums have a significant impact within their own activities. Changing exhibitions, lack of communication between project groups, and the fast pace of installing and dismantling exhibitions can result in a lack of recycling or repurposing and a subsequent waste of resources.

The highest risks for museums relate to CO2e emissions, a responsible use of resources and climate adaptation. Fluctuating energy prices can have a significant impact on museum budgets that are already stretched, so finding ways to reduce energy consumption is key. In addition, those who provide museum funding – foundations, the state and local councils – have an increasing focus on climate and resource consumption, which can place additional demands on applicants, including museums that are dependent on funding from foundations to develop projects. Finally, some historical buildings and ancient monuments are in a critical condition due to climate change. Maintaining this cultural heritage can be highly cost-intensive for museums.

Museums have the potential to play a key role in sustainability awareness since they have a unique opportunity to inform the public about environmental challenges and inspire visitors to act. This can be directly through exhibitions, but also through a more systematic green transition at museums representing a more sustainable lifestyle. This could include selling eco-labelled products, a vegetarian museum café, or a natural garden where visitors can learn about the challenges of and possible solutions to the biodiversity crisis.

Social Topics: Negative Impact, Risks and Opportunities

		Materiality			
Social		**Own operations**		**Value chain**	
		Impact	Risks	Impact	Risks
Working conditions		●	●	●	
Physical health and safety				●	
Equality, diversity and inclusion	★	●	●	●	●
Local society	★				
Collection management and repatriation		●	●		

● Material risks for museums ● Material impact on the environment, people and/or society ★ Opportunities

In their own operations museums have a marked negative impact on working conditions as well as equality, diversity and inclusion. Management issues in the sector lead to a lack of job satisfaction, the reliance on temporary or precarious staff creates a sense of insecurity among staff, and the combination of a high degree of professional dedication and tight deadlines increases the risk of stress. Women also continue to be underrepresented on museum boards despite being overrepresented among museum staff, and in general there is a lack of diversity among museum staff, including ethnic diversity.

Work-related injuries and illness appear to be limited at museums (physical health and safety), and museums also have a minimal negative impact on local communities since their usual activities do not harm the local population or environment.

The management of collections and repatriation are, however, important issues for museums to address. Even though only a minority of Danish museums face repatriation requests or demands, they all have cultural objects and works of art in their collections with a history of how they arrived at a given museum. Transparency in communicating this complex and at times controversial history is important and valuable for visitors' understanding of the past and the present.

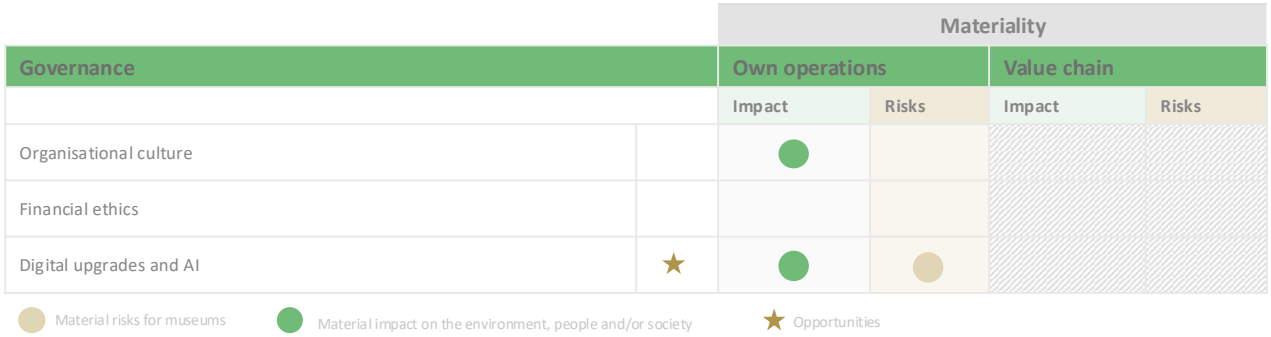
Several sources of negative impact exist across the value chain. Sizeable purchases of food supplies, paper articles, textiles, glass, plastic and wood and timber can be linked to poor working conditions, deterioration in the physical health of workers, and harm to local societies. The food and textile industries in particular also pose a high risk of discrimination against women and migrants. Museums also face challenges in terms of visitor diversity. Women and visitors with a higher education are in the majority. In terms of gender equality the art bought by museums can also have a specific negative impact since the majority of funds for this purpose are spent on works by male artists.[1,2]

Risks are greatest in relationship to working conditions as well as equality, diversity and inclusion. Here negative media coverage and dissatisfied staff can damage a museum's reputation. The Danish Agency for Culture and Palaces, foundations, and society are also increasingly aware of equality and diversity issues. This can raise people's expectations of museums and manifest as requirements by foundations, which in turn can impact on museums' access to funding.

The opportunities museums have should be seen in light of their crucial role in disseminating research-based knowledge, increasing understanding, and generating dialogue on key social challenges. Museums have a responsibility to represent diverse perspectives, and by creating more equality and diversity in their own organisation they can ensure that their activities are generated by a more diverse range of people (including curators, mediators and artists), at the same time as presenting narratives that represent the diversity of voices in Danish society. Museums can also increase the level of their engagement in local communities. Their knowledge can contribute to solutions to social challenges such as mental health, and debates on key social issues could also be held at museums.

1 Ministry of Culture Denmark's report on gender in art museum collections: 'Undersøgelse af køn i kunstmuseers indsamling' (2023); Danmarks Radio 'Kvindelige kunstnere bliver overset af kunstmuseerne' (18 November 2023).
2 Danish Agency for Culture and Palaces' national visitor survey *Den Nationale Brugerundersøgelse* (2022).

Governance Topics: Negative Impact, Risks and Opportunities



The most material negative impact museums have in terms of governance is connected to organisational culture, which in turn draws attention to the more general issue of how museums are run. Some museums lack the transparency created by formalising working procedures and policies in writing, whereas others need to work on putting formal policies and procedures into practice. State-authorised museums face additional challenges at board level, where the appointment of some board members is not based on their professional qualifications. On average, 5 out of 7-8 museum board members are appointed on the basis of their professional qualifications.[3]

Financial ethics raises the question of museums' dependence on foundations whose capital could be based on industries with questionable ethics. International examples demonstrate that funding by foundations can be linked to significant negative environmental and social impact. In light of this Danish museums are advised to consider where their funding comes from and the ties they have to foundations.

Digitalisation can also cause challenges since many museums face a necessary yet sweeping digital upgrade with new operating systems and the introduction of AI. Digitalisation and AI can, however, also represent significant opportunities for museums by making the knowledge they possess more accessible and interactive through media such as podcasts, videos or a knowledgeable AI museum guide.

The risks of digital upgrades and AI for museums can, however, outweigh the opportunities. Restructuring internal systems and changing digital infrastructure can be cost-intensive, in addition to which a lack of formalised procedures for the use of AI can seriously damage a museum's reputation if the information provided is wrong or copyrighted content is used.

3 Danish task force on museum reform, 'Anbefalinger til en reform af statsanerkendte museers opgaver og tilskud' (2023).

Applying the Double Materiality Assessment

The materiality assessment in this report charts the negative impacts and risks at a sector level. Since Danish museums vary in size and activities, each museum should apply the assessment to their own organisation to determine how well its results fit their own context. This step-by-step guide can be used to perform your own double materiality assessment based on 14 ESG topics.

1 Preparation

The three tables on page 38 can be used to register topics that are material at your specific museum. It can be a good idea to print the tables and complete them during the process to provide a full overview of your material topics once it is complete.

2 Materiality Check for Each Topic

The report clarifies the impact of museums and related risks for each topic. Read this then use the relevant materiality check to establish whether the topic is material for your museum. A list of questions has been compiled help you make your assessment.

It will often be necessary to collate documentation, data or the experiences of staff to assess a topic's materiality. The green sections for assessing materiality clarify the kind of information needed and potential sources museums can use.

When you have checked the materiality of a topic write the reasoning down, so you have a record of why a topic was deemed material/immaterial. It is also important to note that no double materiality assessment is static. The situation of museums changes constantly, and the impact and risks can change with them. It is important that you revisit your results at least every other year and subsequent to any major changes at your museum.

3 Involve External Stakeholders

The materiality check lists in-house stakeholders that can be involved, but checking the results of your materiality assessment with key external stakeholders is recommended. Talking, for example, to visitors, funding bodies, suppliers or the authorities can clarify their perspectives and priorities as well as enhance the museum's understanding of any negative impact and risks. Consider which of the 14 ESG topics stakeholders can provide relevant input to and formulate your questions accordingly to ensure the dialogue is as focussed as possible.

Result Analysis

CO2e Emissions ★

CO2e emissions is a material topic for museums, primarily due to the energy consumption involved in running buildings, externally sourced supplies, and the means of transport used by visitors. CO2e is defined as museums' emissions of CO2 and other greenhouse gasses through their own activities and across the value chain.

According to the Greenhouse Gas Protocol, the most widely accepted method for measuring greenhouse gasses, an organisation's CO2e emissions can be divided into three categories: Scope 1, 2 and 3. Scope 1 covers direct emissions from activities the organisation owns or controls. Scope 2 covers indirect emissions from the purchase of energy from external sources. Scope 3 is CO2e emissions from an organisation's value chain. This covers emissions from activities the organisation does not directly own or control. Examples could be emissions from the activities of external suppliers and service providers or those caused by the disposal of such supplies or services.

Own Operations
For museums Scope 1 and Scope 2 emissions relate to energy consumption such as electricity, heating and cooling systems, as well as emissions from museum vehicles. The climate impact this has depends on the size of the museum, the state of its buildings, and the extent to which measures such as LED lighting or flexible indoor climate systems to control temperature and humidity have been introduced.

Value Chain
In general Scope 3 causes the vast majority of museum emissions. In many cases the means of transport used by visitors constitutes the largest category of emissions, but external supplies and services can also create significant emissions here. If a museum has a restaurant and/or shop that buys products for 500,000 DKK or more per purchase category these can be a major source of CO2e emissions. Some museums also produce numerous temporary exhibitions and the materials involved can be a significant source of emissions. Museums with larger shops also often have significant CO2e emissions due to the disposal of goods purchased by visitors. If not recycled or repurposed when visitors no longer have use for them they end up in landfills creating a higher level of CO2e emissions than if the product had a second life. Finally, museums with a significant level of archaeological activity and excavations can have substantial CO2e emissions, particularly if using of motor-powered excavators.

Risks
There can be a number of risks connected to CO2e emissions. The rise in energy prices in 2002 was a financial blow for many museums, demonstrating the risk energy consumption can pose to museums (Scope 1 and 2). Since many foundations and other funding bodies also have an increased focus on sustainability it could prove more difficult to access funding if museums do not address climate issues. In terms of funding from local authorities the pace of implementing a sustainability agenda varies, which is reflected in the demands they place on museums. Some local authorities have, however, started to develop sustainability requirements in relationship to the funding they provide for museums to cover running costs. In the future the climate action plans of local councils are to be operationalised nationwide.

Here cultural institutions are seen as potential allies and partners in initiatives aimed at changing people's behaviour.

Opportunities

Museums have a unique role in society that can inspire people to act on climate change. By actively working with their own impact on the climate the sector can take its share of responsibility for solutions to the climate crisis and develop the competence to incorporate climate agendas in their exhibitions, events and other communication with the public. Museums possess the platform and ability to create experiences and spaces that provide visitors with the knowledge and inspiration to make large and small changes as part of a green transition.

MATERIALITY CHECK

The following information can be necessary to assess whether CO2e emissions is a material topic for the museum:

- A climate account for your museum
- An overview of your largest income and expenditure categories. These can often give a good indication of where your CO2e emissions come from
- A more detailed specification of your largest purchase categories showing which goods you buy most of
- Information on any archaeological activities in relationship to the consumption of fossil fuels such as diesel or gas.

Stakeholders that can be relevant in establishing whether CO2e emissions is a material topic:

- Staff with an overview of your running costs and sources of income
- Staff with insight into running museum buildings, museum expenditure, purchases and any archaeological activities.
- Other museums who have made a climate account and whose activities are comparable with your own.

If you can answer yes to one or more of the questions below it is likely that CO2e emissions is a material topic representing a significant impact and/or risk:

Own operations

- Does the museum have significant CO2e-emissions or costs related to energy consumption connected to buildings or vehicles?

Value Chain

- Does the museum make purchases of 500,000DKK or more per annum in one or more of the following categories of goods with a high risk of significant CO2e emissions during their life cycle: food supplies, paper supplies, textiles, plastic, wood and glass?
- Do the majority of visitors come to the museum using CO2e-emitting means of transport such as cars?
- Does the museum conduct archaeological excavations using equipment such as motor-powered excavators that consume large quantities of fuel and therefore emit significant amounts of CO2e?

Risks

- Are the museum's finances vulnerable to an increase in energy prices?
- Does the museum face increasing demands or expectations from others, including local authorities and foundations, regarding reduction of CO2e emissions?
- Is there a risk that the museum's current practices could damage the museum's reputation?

Pollution

Pollution is a key focus area for museums that buy large quantities of external supplies or have many visitors who contribute to air pollution via their means of transport. Pollution covers the release of pollutants into the environment via the air, water and soil. Minimising pollution is crucial to protecting biodiversity and ensuring clean drinking water and air.

Own Operations

If a museum has in-house conservation facilities these will be the primary source of pollution in their own operations. If, however, the museum outsources conservation to an off-site facility this will be a value chain activity. Regardless of whether conservation takes place on or off site, it is considered to have a minimal impact on pollution. Even though it involves the use of multiple toxic chemicals, these are only used in small quantities and there are strict regulations on their disposal in Denmark. This is therefore not considered a material impact.

Value Chain

In the value chain the main sources of pollution are the means of transport used by visitors and external supplies purchased by museums. The transportation of visitors to and from museums can cause substantial air pollution in surrounding areas. Otherwise the main sources of pollution are linked to the

purchase of supplies for museum restaurants or shops, since the production of food supplies, paper articles, textiles and glass can pose high risks of various forms of pollution. One example is the use of pesticides in the food industry that pollutes local ecosystems via soil and water. Another is the release of harmful gasses into the atmosphere during the manufacture of paper articles.

It is, however, primarily museums with a large number of visitors and large quantities of external supplies for their restaurants or shops that need to make active choices in terms of their impact on pollution.

Risks

Even though external supplies purchased by museums can contribute significantly to pollution, these do not figure heavily in the expectations or demands of foundations or consumers. Foundations have a general focus on sustainability in the funding applications they receive, but have yet to introduce specific sustainability standards by which the impact on pollution would require a more active strategy by museums. Any certification based on such standards could mean implementing new processes and procedures, which could increase museum running costs.

MATERIALITY CHECK

The following information can be used to assess whether pollution is a material topic at your specific museum:

- A list of chemicals or other toxic substances and the quantities the museum uses and handles.
- An overview of the largest expenditure categories to establish whether the museum purchases many goods with a high risk of pollution.
- An assessment of visitors' use of air-polluting means of transport

Stakeholders that can be relevant in establishing whether pollution is a material topic:

- Members of staff or conservation facilities that handle chemicals and other toxic substances
- Staff with an overview of museum purchases and the means of transport used by visitors

If you can answer yes to one or more of the questions below it is likely that pollution is a material topic representing a significant impact and/or risk:

Own operations
- Does the museum face challenges in handling chemicals and other toxic substances?

Value Chain
- Does the museum make purchases of 500,000DKK or more per annum in one or more of the following categories, which have a high risk of causing pollution: food supplies, paper supplies, textiles, plastic, wood and glass?
- Do the majority of visitors come to the museum using air-polluting means of transport such as cars?

Risks
- Does the museum face increasing demands or expectations from others regarding the reduction of pollution?
- Is there a risk that the museum's current practices, such as the handling of chemicals or purchase of polluting goods, could damage the museum's reputation?

Water

Museums that purchase large quantities of external supplies for restaurants or shops can have a material negative impact on water supplies and aquatic environments. Water is an essential resource for life on the planet, sustaining everything from people's health to the functioning of the ecosystem. Excessive use or pollution of water can result in scarcity, damage to local aquatic environments and risks to people's health.

Own Operations

Museums use limited amounts of water that have a minimal and insignificant impact on the environment. The level of water consumption usually corresponds to the number of visitors using water for personal hygiene.

Value Chain

In the value chain museums can have a material impact on water through archaeological activities or purchasing large quantities of supplies. Museums with major archaeological projects can consume large quantities of water when wet screening during large-scale excavations. In many places in Denmark the amount of water used for this purpose depletes the water table. Museums with a high level of consumption in running restaurants or shops can also contribute to an increase in the tapping and consumption of water as well as the discharge of sewage. The production of food supplies, paper articles, textiles, plastic and glass can also have a negative impact on water supplies, particularly the textile industry. The World Bank estimates that 20% of all waste water comes from the production of textiles.[4] The purchase of large quantities of goods in these categories should be a focus area for museums.

Risks

Even though water consumption is not a significant topic in museums' own operations it could represent a financial risk. The increasing focus of foundations and other funding bodies on the sustainability profile of applicants could lead to specified sustainability standards, which would increase the costs associated with certification and implementation.

MATERIALITY CHECK

The following information can be used to assess whether water is a material topic for your museum:

- Water consumption data: the museum's own water consumption as well as that of suppliers or external partners such as entrepreneurs involved in archaeological excavations
- An overview of the largest expense categories to establish whether the museum purchases many goods with a high risk of a negative impact on water resources

Stakeholders that can be relevant in establishing whether water is a material topic:

- Staff with insight into the museum's consumption of water at the museum itself as well as by suppliers or partners
- Members of staff with insight into museum purchases and expense categories

If you can answer yes to one or more of the questions below it is likely that water is a material topic representing a significant impact and/or risk:

Own operations
- Does the museum consume large quantities of water not related to visitor use, such as watering outdoor areas?

Value chain
- Does the museum conduct large-scale archaeological excavations that use significant amounts of water?
- Does the museum make purchases of 500,000DKK or more per annum in one or more of the following categories, which have a high risk of contributing to a negative impact on water supplies: food, paper, textiles, plastic, wood and glass?

Risks
- Is there a risk that current levels of water consumption could become a major cost for the museum?
- Does the museum face increasing demands or expectations from others regarding the reduction of water consumption?
- Is there a risk that the museum's current practice and water consumption can damage the museum's reputation?

Biodiversity ★

Biodiversity can be significant for museums that purchase large quantities of supplies or products for their restaurants or shops. The loss of biodiversity – the diversity of flora, fauna and microorganisms on the planet – is caused by factors such as the intensification of agriculture, urbanisation, the exploitation of resources, pollution and climate change, all of which cause harm to natural ecosystems.

Own Operations

Many Danish museums only have a small outdoor area, and since museums' own activities are not connected to industrial processes that exploit natural resources their activities have a very limited material impact on biodiversity.

4 World Bank, 'How much do our wardrobes cost the environment?' (23 September 2019).

Value Chain

Biodiversity is also only material in the value chain of museums if they purchase large quantities of external supplies, especially for museum restaurants and shops. The production of food supplies, paper articles, timber products, textiles, plastic and glass can all pose a high risk of a negative impact on biodiversity. Deforestation due to the demand for timber can, for example, result in a loss of biodiversity by destroying the habitats of plants and animals. Another example is the production of plastic, which creates microplastic that damages aquatic flora and fauna.

Risks

Since the negative impact of museums on biodiversity is minimal, significant risks are unlikely. Since local and global biodiversity issues are increasingly a focus of media attention, however, this could lead to stipulations from foundations and other funding bodies, as well as demands from visitors and state or local authorities.

Opportunities

The biodiversity crisis demands action, and museums have the potential to contribute to biodiversity through research or the engagement and education of their many visitors. Many museums have outdoor areas that can be made more nature-friendly and provide an opportunity for a focus on wild nature and the importance of biodiversity. Museums can also incorporate nature as a theme in exhibitions by focussing on the interaction between nature and museum objects, works of art and people.

MATERIALITY CHECK

The following information can be used to assess whether biodiversity is a material topic for your museum:

- The size of the museum's outdoor areas
- How these outdoor areas are used with a focus on planting wildflowers, indigenous plants and reducing lawn areas
- The use of fertilizers and pesticides
- An overview of the largest expenditure categories to establish whether the museum purchases many goods with a high risk of a negative impact on biodiversity

Stakeholders that can be relevant in establishing whether biodiversity is a material topic:

- Members of staff with insight into the administration of the museum's outdoor areas
- Members of staff with insight into the museum's expenditure categories

If you can answer yes to one or more of the questions below it is likely that biodiversity is a material topic representing a significant impact and/or risk:

Own operations
- Does the museum have large outdoor areas and a lack of focus on increasing biodiversity?

Value chain
- Does the museum make purchases of 500,000DKK or more per annum in one or more of the following categories with a high risk of having a negative impact on biodiversity: food supplies, paper supplies, textiles, plastic, wood and glass?

Risks
- Does the museum face increasing demands or expectations from others regarding an increase in the biodiversity of its outdoor areas?
- Is there a risk that current practices in terms of biodiversity can damage the museum's reputation?

Responsible Use of Resources ★

A responsible use of resources is a key focus area for museums that purchase large quantities of supplies or have many temporary exhibitions. Natural resources should be used in a way that minimises damage to the environment and secures their existence for generations to come. Products and materials should be as durable as possible, energy-efficient to use, and recycled or repurposed to minimise waste.

Own Operations
Museums are not production plants, so their impact on resource consumption is relatively low compared to other sectors. Museums also have limited budgets and therefore have a natural focus on the responsible use of resources. This does not, however, mean there is no room for improvement. Some museums find it difficult to recycle installation materials and elements from one exhibition to another and they also lack storage space, two factors that can result in the one-off use of exhibition materials. Additional factors are the speed at which exhibitions are installed and dismantled and the speed at which decisions have to be made, both of which can prevent recycling and repurposing. This can be less of a problem at art museums with simpler installations of paintings on walls.

Incorporating how to recycle and repurpose elements and materials is not yet part of exhibition planning at many museums, and at some the lack of communication between different project groups poses an extra challenge. This can result in many of the materials used in exhibitions being discarded as waste or sent to landfills instead of being recycled.

Value Chain
There is a high risk that museum suppliers and sub-contractors do not recycle materials or maximise the lifespan of products. This requires that products can be repaired by the producer or reincorporated and recycled in production processes instead of being discarded. Even though some museums adhere to local authority guidelines, green purchasing policies are not widespread as a way of placing pressure on suppliers in terms of the sustainability of their products. As a result the suppliers of goods and services purchased by museums often lack a conscious strategy to ensure the recyclability of the materials or contents of their products. This contributes to a throwaway culture where goods and materials are not given a second life.

Risks
Foundations have developed a stronger focus on the consumption of resources and the way their funding contributes to its reduction at the same time as increasing the repurposing and recycling of materials. If museums do not start to incorporate a responsible use of resources in their activities this could impact on their access to funding. Society at large also has a stronger focus on the responsible use of resources and sustainable products. This can heighten expectations of the way museums administer their use of materials and the products they sell in their restaurants and shops. For some museums sales from museum shop and restaurants are crucial sources of income, so it may also become necessary to identify alternative sources of revenue in a future where people consume and purchase less.

Opportunities
Museums have the potential to be at the forefront of a circular development in which consumption is lower and purchased materials and products have a longer life. Exhibitions can use more recycled and repurposed elements shared between museums and stored in joint facilities. Museums can also choose to buy materials and goods that are easier to repurpose and be visible advocates for a more responsible use of resources by rethinking the kind of products they sell in their shops.

This could be done by choosing suppliers that have an active policy of recyclability, or through a stronger focus on selling unique recycled products. Museums can also choose to move from selling products to providing services such as historical locations for hire and courses or workshops.

MATERIALITY CHECK

The following information can be used to assess whether responsible use of resources is a material topic for your museum:

- Overview of the largest expense categories to establish whether the museum purchases many goods with a high risk of the absence of durability, recycling and repurposing
- Overview of purchased supplies and the extent to which their producers have a focus on the responsible use of resources, recycling and repurposing
- Overview of the handling of purchased supplies after use. The applies particularly to supplies used in exhibitions, events and communication activities

Stakeholders that can be relevant in establishing whether responsible use of resources is a material topic:

- Staff that deal with museum purchases and waste management
- Staff in dialogue with suppliers who can potentially establish whether their products have a focus on durability, resource optimisation and the possibility of recycling or repurposing

If you can answer yes to one or more of the questions below it is likely that responsible use of resources is a material topic representing a significant impact and/or risk:

Own operations
- Does the museum hold a large number of temporary exhibitions using significant quantities of supplies and materials that are not recycled or repurposed?

Value chain
- Does the museum make purchases of 500,000DKK or more per annum from one or more of the following categories produced by industries with a high risk of a lack of durability, recycling and repurposing: food supplies, paper supplies, textiles, plastic, wood and glass?
- Does the museum lack a procurement policy that places demands on suppliers regarding durability, reuse and recycling?

Risks
- Does the museum face increasing demands or expectations from others, including local authorities and foundations, regarding the use of resources?
- Is there a risk that current practices can damage the museum's reputation?
- Is the shop a significant source of income for the museum that may pose a risk, in case guests purchase fewer products in the future?

Climate Adaptation

Due to climate change, climate adaptation (i.e. adapting to changing meteorological conditions) is a key issue for museums. This has only been assessed in the context of museums' own operations and solely in relationship to risks since it relates to the economic consequences changing meteorological conditions can have for museum buildings and cultural heritage. A rising water table increases the risk of flooding and increasing precipitation in Denmark means cultural heritage is at risk of disappearing.

Risks

It is important that museums adapt to climate change. In Denmark climate change, particularly increased precipitation, contributes to the erosion of cultural heritage in the Danish landscape. Multiple important historical buildings and ancient monuments are in a critical condition. To avoid losing them museums have a responsibility to maintain or restore cultural heritage that is at risk.

In the future the rising water table can also pose a challenge for museums with buildings or cultural heritage in low-lying areas. GEUS (Geological Survey of Denmark and Greenland) predicts that on average increased precipitation could make the water table between 10 and 27 cm higher towards the end of the century. This increases the risk of flooding in low-lying areas.[5]

5 Geological Survey of Denmark and Greenland (11 January 2024).

Preventative steps to minimise the damage caused by climate change is cost-intensive for museums, particularly for ancient monuments and listed buildings that require specific measures to protect them from climate change. There is, however, also a risk that the cost of flooding and increasingly heavy precipitation could be greater than the introduction of preventative measures now.

MATERIALITY CHECK

The following information can be used to assess whether climate adaptation is a material topic for your museum:

- Assess the condition of and analyse the risks posed by museum buildings and the cultural heritage the museum is responsible for
- Surveys documenting risks due to meteorological conditions and climate change
- Online resources providing an overview of risks like flooding, such as Denmark's climate adaptation portal https://eng.klimatilpasning.dk/

Stakeholders that can be relevant in establishing whether climate adaptation is a material topic:

- Staff responsible for building maintenance
- Staff with knowledge of the condition of the museum's collection and the impact of meteorological conditions and/or climate change
- The risk assessments of local authorities

If you can answer yes to one or more of the questions below it is likely that climate adaptation is a material topic representing a significant impact and/or risk:

- Would changes in meteorological conditions such as increased rainfall cause major or significant* damage to museum's buildings or cultural heritage?
- Is there a risk that the museum will have to take expensive climate-proofing measures to protect buildings and cultural heritage?
- Is there a risk that the museum's current practice in terms of climate proofing can damage the museum's reputation?

* The terms significant and major in the checklists indicate that a factor is material . As opposed to a quantifiable measurement of costs, CO2e emissions, water consumption, etc. (where the quantity can be material for one museum but not another) the degree of materiality is established by each individual museum according to its own operations and context.

Working Conditions

Working conditions is a material topic at museums, both in relation to museum staff and those employed in the value chain. Working conditions should be understood in the broad sense of covering the working environment, working hours and pay.

Own Operations

Working conditions at museums in Denmark have come under scrutiny in recent years. The media has highlighted job dissatisfaction and poor working conditions at museums, focussing on management issues, precarious working conditions and stress. For museum staff stress is a challenge in a sector with a high level of professional dedication, cross-disciplinarity and regular peak loads throughout the calendar year. The sector's use of short-term contracts also creates a sense of precarity, with temporary exhibition staff and archaeologists among the most vulnerable groups. In a sector employing many different professionals ongoing skill and competence development also needs to be a greater focus.

In terms of pay, union-agreed rates are usually standard, although a survey conducted by DM (the Danish union for university graduates) showed that museum staff are paid less than the average salary of local council employees and that there are significant differences in levels of pay from museum to museum.[6]

Museums also often use volunteers to perform practical tasks or help with activities. This can contribute to a culture of unpaid labour and precarious terms of employment.

6 Højsgaard, L., 'Museumslønninger halser efter kommunalt ansatte akademikeres løn', *Akademikerbladet* (25 October, 2019).

Value Chain

Shifting focus to museum suppliers and collaborative partners, artists working in the sector experience poor working conditions where they are often expected to work for free or for a limited fee, thus exacerbating the precarious economic situation of many artists.[7]

Large quantities of supplies for museum restaurants, shops or exhibitions can also have a negative impact on workers employed in the value chain of museums. The food, paper, textile, timber and plastic industries have a high risk of poor working conditions with a lack of union representation, extremely low pay, and the use of child or forced labour.

Risks

The reputation of museums can be seriously damaged by constant media coverage of poor working conditions. There are also financial risks in terms of running costs, since job dissatisfaction can result in sick leave or resignations.

MATERIALITY CHECK

The following information can be used to assess whether working conditions is a material topic for your museum:

- Data on work-related illness including stress, which can be an indication of staff well-being
- Health and safety risk assessments (WPA)
- Data on staff pay and the payment of partners
- Data on the number of employees on short-term contracts
- The number of volunteers and their tasks/responsibilities
- An overview of the largest expenditure categories to establish whether the museum purchases many goods with a high risk of poor working conditions

Stakeholders that can be relevant in establishing whether working conditions is a material topic:

- Members of staff with insight into museum purchases and choice of suppliers
- Members of staff with insight into staff well-being, pay and terms of employment, as well as the payment of partners.
- Members of staff responsible for volunteers

If you can answer yes to one or more of the questions below it is likely that working conditions is a material topic representing a significant impact and/or risk:

Own operations
- Is stress a challenge at the museum?
- Are numerous staff employed on short-term contracts?
- Are staff poorly paid compared to others in similar positions in the museum sector?
- Do museum volunteers have tasks and responsibilities that are performed by paid staff elsewhere?

Value chain
- Are there examples of poor working conditions for those the museum works with, such as low fees for artists?
- Does the museum make purchases of 500,000DKK or more per annum in one or more of the following categories with a high risk of contributing to a negative impact on working conditions: food supplies, paper supplies, textiles, plastic, wood and glass?

Risks
- Is there a risk that staff illness could result in major costs for the museum?
- Is there a risk that current working conditions can damage the museum's reputation?

Physical Health and Safety

Museums that use large quantities of supplies in their restaurants or shops can have a significant negative impact on the physical health and safety of employees working for suppliers.

Own Operations

Museum staff were not found to have a significant level of sick leave, and serious physical injury also appears to be limited. There are, however, some museum staff who perform physical tasks that involve poor working positions and heavy lifting. This is improved when museums construct new buildings and purchase lifting equipment, but remains a challenge in listed buildings where the physical framework is difficult to change

7 The Danish Association of Visual Artists, 'Webundersøgelse om arbejdsvilkår i kunstlivet' (16 October 2018); Hansen, R. B., 'Kan flere penge sikre kunstnerne et bedre arbejdsliv?' (20 August 2023); Lykkegaard, A. T., 'Institution lånte 30 kunstværker kvit og frit og forlangte, at kunstnerne skulle udføre ekstraarbejde – gratis'(2 April 2023)

There can also be pesticide residue on some museum objects, which can pose a potential health risk for museum staff working with museum collections on a daily basis. In the past pesticides were used to protect artefacts from decay. This practice is now banned in Denmark, but objects that have already been treated with pesticides can continue to pose a risk museums should address.

Value Chain

The production of food supplies, paper articles, textiles, timber, glass and plastic all pose a high risk of having a negative impact on the health of people working for external suppliers if, for example, they are exposed to dangerous gasses, toxic chemicals, dust, noise pollution and physically demanding labour. Museums should be aware of this when purchasing large quantities of supplies for their own use or resale.

Risks

State and local authorities and foundations currently have less focus on the social sustainability of the supplies and goods museums purchase. The immediate risks are therefore primarily limited to running costs in cases of long-term illness among members of staff. Museums can, however, expect social sustainability to come into greater public focus in the future since pending EU sustainability legislation emphasises safeguarding working conditions for both museum staff and those employed across the value chain.

MATERIALITY CHECK

The following information can be used to assess whether physical health and safety is a material topic for the museum:

- Data on type and number of work-related injuries
- Overview of the working conditions of staff involved in handling chemicals or lifting
- Awareness of staff at risk of working in a potentially harmful environment at the museum
- Overview of the largest expenditure categories to establish whether the museum purchases many goods with a high risk of a negative impact on the physical health and safety of those producing them.

Stakeholders that can be relevant in establishing whether physical health and safety is a material topic:

- Staff that deal with physical working conditions and work-related injuries at the museum
- Staff responsible for performing risk assessments in connection with conservation or preservation

If you can answer yes to one or more of the questions below it is likely that physical health and safety is a material topic representing a significant impact and/or risk:

Own operations
- Do a significant number of staff perform work that puts them at risk in terms of health and safety such as heavy lifting?
- Does the museum have a high number of serious work-related injuries?
- Are staff involved in conservation and preservation at risk?

Value chain
- Does the museum make purchases of 500,000DKK or more per annum in one or more of the following categories produced by industries with a high risk of a negative impact on the physical health and staff of workers: food supplies, paper supplies, textiles, plastic, wood and glass?

Risks
- Is there a risk that employee illness related to work-related injuries can result in significant costs for the museum?
- Is there a risk that the museum's current working conditions or number of work-related injuries can damage the museum's reputation?

Equality, Diversity and Inclusion ★

It is material that museums are aware of equality, diversity and inclusion issues in order to address the absence of equal opportunities, the presence of gender discrimination, and to foster diversity and representation in their own operations and the museum value chain.

Own Operations
Historically the boards of Danish museums have been male dominated. Even though the number of women on the boards of state-authorised museums has risen in recent years, women continue to be underrepresented. In 2022 38,5% of museum board members were women. The assessment also shows that some museums still have challenges with gender equality at the top level of management where men continue to be overrepresented.

There is consensus in the museum sector that diversity is a relevant issue, particularly in terms of ethnic diversity. The staffing of museums does not currently reflect the ethnic diversity of Danish society.

Value Chain
In 2023 the Danish Agency for Culture and Palaces published a report documenting that 37 state and state-authorised museums used the majority of their collection funds on works by male artists. This has a negative impact on women artists. The report shows that 63% of the works purchased by Danish art museums from 2018-2022 were by male artists, and that 65% of total expenditure was on works by male artists.[8]

There is also a lack of gender, age and educational diversity among visitors to Danish museums. According to the latest national visitor survey by the Danish Agency for Culture and Palaces 63% of visitors are women, 73% have a higher education, and 56% are over the age of 50. The challenge of representation in terms of gender and education is most marked among visitors to art museums.[9]

Turning to the supplies and products purchased by museums in Denmark, the food and textile industries pose the highest risk of discriminatory impact. Both industries are associated with the exploitation of migrants, women and minorities who are poorly paid, have poor working conditions, and are employed under short-term or no contracts. In principle these negative effects are only relevant for museums that purchase large quantities of food supplies or textiles.

Risks
These is an increasing focus on equality and diversity in the museum sector by society at large, the Danish Agency for Culture and Palaces, and Ministry of Culture Denmark. Negative media coverage of the challenges museums face can potentially damage the reputation of museums, and several foundations also have a specific focus on diversity, which could manifest as application requirements and impact on access to funding in the future.

Opportunities
The International Council of Museums ICOM's definition of a museum includes it fostering diversity by being open to the public, accessible, and inclusive.[10] Museums contribute on a daily basis to people's understanding of society by using art and cultural heritage to enhance understanding of the past, present and future. Representing and including a diverse range of perspectives and voices is therefore key. A stronger focus on equality and diversity within the organisation can help museums to ensure that their activities are created by a wide range of people for a wide range of people. This transition can be facilitated through initiatives such as diversity and inclusion training, new guidelines for museum communication and exhibitions, and/ or collaboration with local organisations.

8 Ministry of Culture Denmark, *Undersøgelse af køn i kunstmuseers indsamling* (2023); Danmarks Radio, 'Kvindelige kunstnere bliver overset af kunstmuseerne (18 November 2023).
9 The Danish Agency for Culture and Palaces, *Den Nationale Brugerundersøgelse* (2022).
10 https://icom.museum/en/resources/standards-guidelines/museum-definition/

MATERIALITY CHECK

The following information can be used to assess whether equality, diversity and inclusion is a material topic for your museum:

- Data on the gender of board members and management
- Data on staff diversity with a focus on factors such as ethnicity, gender and age
- The gender division among artists in works purchased by art museums
- Data on visitor diversity with a focus on factors such as ethnicity, gender and age
- An overview of the largest expense categories to establish whether the museum purchases many goods with a high risk of negative impact on equality, diversity and inclusion

Stakeholders that can be relevant in establishing whether equality, diversity and inclusion is a material topic:

- Staff responsible for purchasing works at art museums
- Staff with an overview of staff diversity
- Staff with an overview of museum purchases in general
- Staff with knowledge of diversity among museum visitors

If you can answer yes to one or more of the questions below it is likely that equality, diversity and inclusion is a material topic representing a significant impact and/or risk:

Own operations
- Is there a gender imbalance on the museum board and/ or the museum's management?
- Do the museum staff reflect the diversity of Danish society?

Value chain
- Does the museum buy more art by one gender than another?
- Does the museum pay more for art made by men than art made by women?
- Do visitors to the museum reflect the demographic composition of Danish society?
- Does the museum make purchases of 500,000DKK or more per annum from one or more of the following industries with a high risk of having a discriminatory impact: food supplies, paper supplies, textiles, plastic, wood and glass?

Risks
- Does the museum face increasing demands or expectations from the outside world in terms of equality, diversity and inclusion?
- Is there a risk that current practices can damage the museum's reputation?

Local Society ★

As a category local society covers the impact museums can have on the society surrounding them via their activities. Their own operations can, for example, cause noise pollution. In the value chain museums that purchase large quantities of external supplies for their restaurants or shops can also have a significant negative impact on local communities where these supplies are sourced or produced, which can result in local populations being harmed or displaced.

Own Operations

Museum activities do not involve industrial processes or manufacturing, so their negative impact on the way of life or rights of local people in Denmark is limited. Increased traffic due to large numbers of visitors or noise pollution from museum events can be an issue, but not one that is considered significant.

Value Chain

If a museum purchases large quantities of food supplies, paper articles, plastic, textiles and glass there is a high risk that the production of these supplies can have a negative impact on local societies. All such industries are, for example, linked to a decline in the health of the local population due to pollution of soil, water and air. In addition, an overconsumption of natural resources such as water can have negative long-term consequences for the environment in which local populations live.

Risks

Since museums have a minimal negative impact on local communities in Denmark it is unlikely this could result in any significant risk to their finances or reputation. Instead museums have the potential to contribute to local society and also make conscious efforts to do so.

Opportunities

Museums already have a positive impact on local communities by safeguarding the collective memory of society and as epicentres of knowledge and ideas. Museums invite people to learn and relate to history and the world around them. At a practical level many museums play a natural role in local society,

providing activities for schools, children and people who live nearby. Museums could, however, be more involved in local challenges and partnerships. Art therapy to combat psychological difficulties is a good example of the way art museums can use their skills and resources to contribute to solutions in the health sector. Given their close relationship to local councils, museums also have an obvious line of contact to engage in dialogue about the ways their knowledge and platform can be used as a resource. By bringing relevant agendas into the museum or participating in partnerships beyond the museum the sector can create even more value for people, the environment and society.

MATERIALITY CHECK

The following information can be used to assess whether local society is a material topic for your museum:

- Data on complaints from local society
- Awareness of activities under the museum umbrella that could cause a nuisance for local society
- An overview of the largest expenditure categories to establish whether the museum purchases many goods with a high risk of negative impact on local societies

Stakeholders that can be relevant in establishing whether local society is a material topic:

- Staff that deal with complaints
- Staff with an overview of museum purchases

If you can answer yes to one or more of the questions below it is likely that local society is a material topic representing a significant impact and/or risk:

Own operations
- Does the museum run activities that can have a negative impact on local society by increasing noise levels, traffic, pollution, etc.
- Does the museum receive many complaints about the negative impact of activities on the local population?

Value chain
- Does the museum make purchases of 500,000DKK or more per annum from one or more of the following industries with a high risk of negative impact on local societies: food supplies, paper supplies, textiles, plastic, wood and glass?

Risks
- Is there a risk that current practices can damage the museum's reputation?
- Is there a risk that any negative impact on the local population could come with significant costs to the museum in the form of fines, for example?

Collection Management and Repatriation

It is material that museums demonstrate an awareness of their role in managing collections as well as repatriation issues in addressing the complex history of collections and returning works of art and cultural artefacts to their countries of origin.

Own Operations

Repatriation is a highly topical and complex issue in the museum world. One of the core tasks of museums has always been collecting works of art and objects, each of which has its own distinct history. The process of returning cultural heritage is complex and linked to imperialism, colonisation and national identity. Far from being neutral archives of knowledge, museum collections reflect the history of changing social, political and economic power structures in global society.

Whereas many European museums possess extensive collections from all over the world, non-Western nations and countries have lost key parts of their cultural heritage. There have been several instances of repatriation in Denmark, including the return of 35,000 archaeological and ethnographical items from the National Museum of Denmark to Greenland from 1984-2001.[11] Not many Danish museums have archaeological or ethnographical collections that are relevant in a repatriation context, yet museums have a responsibility to be proactive in relationship to the provenance of the contents of their collections and engage in a dialogue on repatriation despite the absence of simple answers or easy solutions. Even

11 Bomholt, K., 'Nu får samerne deres 400 år gamle tromme igen: Her er 3 andre sager om tilbagelevering af kulturarv' (26 January 2022).

though repatriation does not affect the majority of Danish museums, the entire sector has a responsibility to inform visitors of the complex and diverse histories of their collections. All museum objects have a story of why and how they ended up in the collection of a given museum. Regardless of whether that story is positive or negative, the way museums communicate can show that their collections contain much more than meets the eye.

Risks

Researching the history of museum objects and works of art to shed light on how they came into a collection demands considerable resources. Researching provenance can therefore represent a considerable expense, especially for smaller museums with limited budgets. At the same time, repatriation cases can damage the reputation of a museum if not dealt with correctly, ethically and transparently. A lack of transparency regarding museum objects and works of art with a controversial history can also damage the reputation of the sector as a whole.

MATERIALITY CHECK

The following information can be used to assess whether collection management and repatriation is a material topic for your museum:

- Awareness of artworks and artefacts in the museum's collection with a problematic and complicated history
- Previous or current cases of repatriation

Stakeholders that can be relevant in establishing whether collection management and repatriation is a material topic:

- Members of staff with a thorough knowledge of the museum's collection, particularly archaeological and/or ethnographical artefacts and works of art
- Members of staff with experience or knowledge of cases relating to repatriation

If you can answer yes to one or more of the questions below it is likely that collection management and repatriation is a material topic representing a significant impact and/or risk:

Own operations

- Does the museum have archaeological and/or ethnographical artefacts or works of art in its collection that are relevant in a repatriation context?
- Does the museum have artefacts or artworks in its collection that are assumed to have a problematic and complicated history not currently in the public domain?

Risks

- Is there a risk that provenance research could represent a significant cost?
- Is there a risk that current practices can damage the museum's reputation?

Organisational Culture

It is material that museums address organisational culture, which includes transparency, ethical reporting, as well as the implementation and observation of policies and clarification of organisational procedures.

Own Operations

The extent to which museums follow official procedures can vary according to their size and form of ownership. Museums owned by the state or local councils have systems with set procedures and regulations, whereas independent institutions are more able to determine their own level of regulation. Some museums therefore lack formal written procedures that ensure transparency, including a code of conduct for best practices that applies to their own operations as well as the value chain. But even if formal policies and written procedures exist, this is not always a guarantee that they are put into practice. It takes a conscious effort to incorporate these in the day-to-day running of museums and a focus on their implementation through, for example, staff training and educational programmes.

The current task force on museum reform appointed by Ministry of Culture Denmark has identified a lack of professionalisation of museums boards, and museums themselves are aware that the appointment of some board members is not based on relevant professional qualifications. On average 5 out of 7-8 board members at Denmark's 97 state-authorised museums are appointed on the basis of their professional credentials.[12] At other levels of museum leadership negative media coverage has exposed ongoing problems in museum management as contributing to a poor working climate and organisational culture in the sector.

Finally, nepotism can be a challenge in a small sector in a small country. This too can be guarded against through a higher level of formalisation and the implementation of set procedures for recruitment, contracts with suppliers of goods and services, and partnerships.

Risks

There can be costs connected to negative organisational culture. A lack of systematised procedures and management issues can lead to job dissatisfaction and stress, which in turn can lead to sick leave or resignations. In terms of developing and implementing a sustainability strategy this lack of formalisation could also limit access to funding. The reputation of museums can also suffer when internal issues are exposed in the media.

MATERIALITY CHECK

The following information can be used to assess whether organisational culture is a material topic for your museum:

- Overview of museum policies and documents such as the staff handbook, code of conduct and policies regarding the museum's key activities (exhibitions, preservation, etc.)
- Job-satisfaction surveys that indicate whether museum staff experience challenges in terms of organisational culture and/or management
- Staff and board member recruitment strategies

Stakeholders that can be relevant in establishing whether organisational culture is a material topic:

- Staff responsible for museum policies and their implementation
- Staff responsible for job-satisfaction surveys

If you can answer yes to one or more of the questions below it is likely that organisational culture is a material topic representing a significant impact and/or risk:

Own operations

- Does the museum lack written procedures to ensure transparency in its operations?
- Does the museum face challenges implementing its policies?
- Does the museum have board members whose appointment is not based on their professional qualifications?
- Does the museum have a good strategy for recruitment to prevent nepotism?
- Does the museum have management challenges that contribute to a negative organisational culture?

Risks

- Is there a risk that the negative impact of organisational culture at the museum could result in significant costs?
- Is there a risk that the current organisational culture could damage the museum's reputation?

Financial Ethics

This is not considered material for museums, although their relationship to foundations and the financial ethics of such funding bodies warrants attention. Financial ethics covers the impact of combatting corruption and bribery, as well as practices that ensure the integrity and justice of financial transactions.

Own Operations

During the research for this report no documented cases of corruption or bribery were found, and with museum mergers and an increasing professionalisation of the sector the risk would appear to be minimal.

12 Arbejdsgruppe om museumsreform, 'Anbefalinger til en reform af statsanerkendte museers opgaver og tilskud' (2023).

On the other hand foundations play a key role in museum funding and a pending museum reform could mean that a larger share of museum funding will come from foundations in the future. This raises the issue of the dependence of museums on funding from foundations that have their own agendas and funds possibly based on revenue from industries with questionable ethics. Tate, the Louvre and the Guggenheim, for example, cut all ties with the Sackler family and Sackler Trust when it emerged that Perdue Pharma, the pharmaceutical company that formed the basis of the family and foundation's capital, was responsible for several products connected to the opioid crisis in the US. Similar issues could emerge in the Danish museum sector, which should be encouraged to consider its relationship to foundations and the methods it uses to acquire funding. This issue could be exacerbated by a pending analysis of power structures in Denmark commissioned by the Danish parliament that will include the financial role of foundations for the first time.

Risks

In the long term museums' relationship to and dependence on foundations could result in considerable damage to their reputations if they are associated with negative publicity surrounding the foundations that fund them. Over the coming years EU sustainability legislation will also apply to foundations, making visible any negative environmental or social impact their investments or holdings have.

MATERIALITY CHECK

The following information can be used to assess whether financial ethics is a material topic at the museum:

- Information on museum measures to prevent corruption
- Data on reported cases of corruption
- Data on reports made via whistleblower schemes
- Overview of the foundations the museum has received or currently receives funding from, the sources of their capital and any connections to a negative impact on people or the environment

Stakeholders that can be relevant in establishing whether financial ethics is a material topic:

- Staff responsible for funding applications and/or contact with foundations
- Staff responsible for any whistleblower schemes and/or data on corruption

If you can answer yes to one or more of the questions below it is likely that financial ethics is a material topic representing a significant impact and/or risk:

Own operations
- Does the museum have a formal policy and practices to prevent corruption?
- Has the museum had cases of corruption in the past?
- Does the museum receive funding from foundations that can be associated with a negative impact on people and/or the environment?

Risks
- Does corruption result in major costs for the museum?
- Is there any risk that current practices can damage the museum's reputation?

Digital Upgrades and AI ★

Museums face major digital upgrades and AI is developing apace, making it a material topic in the museum sector. Digital Upgrades and AI examines where museums are on the path to digitalising their organisations, collections, exhibitions and interactions with visitors in order to remain relevant.

Own Operations

Different museums are approaching digitalisation at different speeds, although the sector as a whole will face a digital upgrade in years to come. So far the primary focus has been on digital dissemination, communication and visibility in relationship to the public, and museums are starting to find a balance between physical frameworks and digital elements that works. The challenge in the future will be digitalising systems behind the scenes. The entire sector faces a new digital infrastructure across all

departments and procedures, from ticket sales and supplies to storage and accounts. The level of digitalisation of museum collections will also increase. This requires resources and financing, which can be a challenge for museums to access from foundations or other sources of funding.[13]

AI can play an important role in this context. AI is spreading through society with lightning speed, and museums need to take an active stance on how to use the technology. AI can assist museums in performing tasks more efficiently, produce texts, analyse and process data, or make communication with visitors more interactive. At the same time there is a risk that AI content can operate with unconscious biases, contain misinformation, and violate rights including copyright. Museums are central and respected repositories of knowledge, so it is crucial that the information they provide is accurate. This makes it necessary for museums to take a critical stance on the opportunities and limitations of AI.

Risks

Whilst digital upgrades at museums are cost-intensive, there are also running costs involved in having several systems or analogue processes that are out of sync. This can mean more resources and extra work are involved in sharing information across different departments. In addition to which the Danish Agency for Culture and Palaces national visitor survey from 2021 showed that visitors aged 14-29 had a less positive view of their museum experience than others, and wanted more interactivity in museum exhibitions and other formats.

If museums fail to digitalise to meet the needs and demands of younger visitors this could mean fewer visitors in the future. Although museums are heading in the right direction. National visitor surveys show a rise in the satisfaction of younger people with their museum experience from 7.1 out of 10 in 2010 to 8.4 in 2021.[14]

AI can, however, also represent a risk to the reputation of museums if its content is inaccurate or incorrect or the information it provides is confidential or protected by copyright. It is therefore necessary for museums develop clear policies and practices for when and how they use AI to avoid losing credibility.

Opportunities

Even though physical visits remain central for many museums, digitalisation and AI present an obvious opportunity to reach wider audiences. Digital platforms with podcasts and videos break down barriers of time and place, and an AI agent that knows every single detail about a museum's collection can offer visitors the opportunity to have an educational conversation whenever they choose. This creates the opportunity to go beyond the local area or even Denmark's borders. By continuing to digitalise museums can make their collections and knowledge more accessible, and a better digital infrastructure would clearly appeal to those aged 14-29 who are currently not the most frequent museum visitors.

13 Andersen, P. T., Jessen, L. B., Andersen, S. d., Hansen, A. B., & Johannisson, M. R., 'Fremtidens Museer - Museernes økonomiske og strategiske afsæt for fremtidig udvikling' (2023).

14 The Danish Agency for Culture and Palaces, Den Nationale Brugerundersøgelse (2021).

MATERIALITY CHECK

The following information can be used to assess whether digital upgrades and AI is a material topic for your museum:

- Information on the requirements and plans for new digital systems at the museum
- Information on the way staff at the museum use AI
- Policy on the use of AI or considerations on any future use of AI

Stakeholders that can be relevant in establishing the materiality of digital upgrades and AI:

- Staff responsible for new investments such as IT systems
- Staff that set out guidelines for the use of AI
- The risks and opportunities of other museums using AI

If you can answer yes to one or more of the questions below it is likely that digital upgrades and AI is a material topic. i.e. it represents a significant impact and/or risk:

Own operations

- Is the museum planning or conducting major changes to its digital systems and infrastructure for tickets, pay, staff data, etc?
- Is the museum considering how AI can/should be used in its activities?

Risks

- Is there a risk of a digital upgrade resulting in major costs?
- Is there a risk that current or future use of AI can damage the museum's reputation?
- Is the current use of digital solutions insufficient to appeal to those aged 14-29 now and in the future?

Materiality Checklists

These tables can be used to conduct a double materiality assessment. Printing the tables and completing them during the process enables you to establish an overview of topics that are material at your specific museum.

		Materiality			
Environment		**Own operations**		**Value chain**	
		Impact	Risks	Impact	Risks
CO2e emissions	★				
Pollution					
Water					
Biodiversity	★				
Responsible use of resources	★				
Climate adaptation					

		Materiality			
Social		**Own operations**		**Value chain**	
		Impact	Risks	Impact	Risks
Working conditions					
Physical health and safety					
Equality, diversity and inclusion	★				
Local society	★				
Collection management and repatriation					

		Materiality			
Governance		**Own operations**		**Value chain**	
		Impact	Risks	Impact	Risks
Organisational culture					
Financial ethics					
Digital upgrades and AI	★				

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