



D6.3. Final Impact Assessment and Sustainability Report

Date of submission	31 December 2024
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Dissemination level	Public

Note: as of January 2025, this deliverable - and the DE-BIAS project - have not been assessed yet by the European Health and Digital Executive Agency (HaDEA).

HISTORY OF CHANGES		
Version	Publication/Submission date	Author(s)
0.1	13/11/2024	Jolan Wuyts
0.2	29/11/2024	Jolan Wuyts, Danae Kaplanidi, Jochen Vermeulen, Kerstin Herlt,
1.0	20/12/2024	Jolan Wuyts, Danae Kaplanidi, Kerstin Herlt, Kristina Rose, Julia Welter, Menis Orfeas, Vassilis Tzouvaras, Antoine Isaac, Jochen Vermeulen,

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1. Introduction

1.1. About the project

The '[DE-BIAS - Detecting and cur\(at\)ing harmful language in cultural heritage collections](#)' project, co-funded under the [EU's Digital Europe Programme](#) runs from 1 January 2023 to 31 December 2024. The project is being implemented by 11 partners from seven European countries.

The DE-BIAS project promotes a more inclusive and respectful approach to describing cultural heritage. During the two years, the project is developing the Bias Detection Tool, an algorithm that automatically detects problematic terms in cultural heritage metadata and provides information about their problematic background. To do this, the project is creating a contextualised vocabulary of more than 660 terms that combines offensive language with contextual information and suggestions for alternative, more appropriate terms (if applicable). The creation of the DE-BIAS Vocabulary is done in close collaboration with underrepresented communities. Niche-sourcing campaigns during the summer of 2024 help evaluate the precision of detections performed by the tool. Moreover, the project is integrating the Bias Detection Tool with the data space infrastructure¹, which is the base of the common European data space for cultural heritage (from here on simply 'data space'). Additionally, the project is analysing approximately 5.4 million records in five different European languages using the Bias Detection Tool on the Europeana database. Finally, the project is developing a rich programme of training events and workshops, capacity building materials, online presence, and publications to increase awareness of the misrepresentation of marginalised communities and how to improve this representation in the cultural heritage sector.

1.2. How the DE-BIAS project advances inclusivity in the European digital cultural heritage sector

The data space is a key initiative of the European Union, driving the digital transformation of Europe's cultural sector. Aligned with 13 other interoperable data spaces that lead Europe's vision for a dynamic, data-driven, and inclusive society, the

¹ Data space infrastructure is the technical infrastructure underlying the data space. Data space infrastructure currently consists of four main digital products: the Europeana.eu and the Europeana Pro websites, APIs, and aggregation systems. Underlying all of these products is the administrative infrastructure to host, monitor, and recover systems.

data space safeguards Europe's digital cultural heritage and contributes to shaping historical narratives and future identities. As outlined in the [Europeana Foundation's business plan for 2024](#), it commits to building a collaborative, inclusive, and climate-conscious digital data space and world. This effort is particularly significant as many institutions grapple with the contentious pasts of their collections, often rooted in colonialism, imperialism, patriarchal structures, and suppression of minority voices.

The project outcomes will aid Cultural Heritage Institutions (CHIs) in adding critical context to their collections, demonstrating how to give marginalised communities agency in collection building and editing. This will impact collections in a way that future curators and cultural heritage professionals will recognise. These are important steps in decolonising collections and moving to a postcolonial understanding of (digital) cultural heritage.

The project objectives and activities are carefully created to align with the principles and goals of the data space by aiming to:

- Enrich and improve the inclusivity of the data offered by the data space and ensure digital cultural collections on the platform represent diverse perspectives.
- Introduce insights and methodologies to detect, make visible, contextualise, and counteract bias, stereotypes, and derogatory speech in the descriptions of digital cultural heritage.
- Encourage representation, promote accessibility, and foster trust-based relationships between communities and CHIs. Leverage the knowledge and expertise of the members of marginalised communities and their allies.
- Build the capacity of the cultural heritage sector to understand, analyse, and address bias in their collections, working bottom-up with communities and community allies.
- Create an algorithmic tool that automatically detects problematic terms and makes them available as part of the data space and its ecosystem.
- Introduce design components on Europeana.eu that contextualise contentious language in collections and enhance societal debate through polyvocal narratives.

2. Purpose and scope of the DE-BIAS sustainability plan

The DE-BIAS sustainability plan provides a long-term outlook, ensuring that project outcomes and their impact endure over time, contributing to lasting change, and

resilience to the project stakeholders, data space and overall cultural heritage sector. The plan aims to extend the project's impact in the broader GLAM sphere, ensuring a meaningful and lasting positive influence on the cultural heritage sector for the coming years.

The sustainability plan was submitted in two versions: the first version was submitted at Month 18 of the project and this final version at the end of the project.

The first version of the sustainability plan highlights several key areas: overall project sustainability, sustainability of project outcomes, maintenance, partners' responsibilities, and exploitation scenarios.

This current and final version of the sustainability plan is an updated version of the first version, considering the evaluation of the project outcomes based on the [impact assessment](#) performed during the last six months of the project. Furthermore, this document details a clear action plan on how project outcomes, where relevant, will be maintained after the project is finished, with a plan for 1, 3 and 5 years as required by DIGITAL-2022-CULTURAL-02 – Data for cultural heritage² call requirements.

2.1 Relation between sustainability plan and impact assessment

The DE-BIAS impact assessment follows the [Europeana Impact Playbook](#). By leveraging this framework, project partners have established a strategy to evaluate:

- The impact of project objectives, formulated as research questions
- Visible and anticipated positive outcomes for stakeholders
- Long-term sustainability
- Enduring influence on the cultural heritage sector and the data space.

This structured approach ensures a comprehensive evaluation of the project's effects and its ongoing contribution to the cultural heritage field.

The impact analysis conducted throughout the project serves as a cornerstone to help set the conditions for the project's sustainability and long-term success. The data gathered from the impact assessment will inform the sustainability plan and future

²<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/digital-2022-cultural-02-heritage>

strategies project partners will implement to ensure that project outcomes and their impact endure over time.

More information on the impact assessment can be found in [Annex I](#).

3. Stakeholders

The main beneficiaries of the sustainability and exploitation scenarios vary depending on the asset and the respective exploitation scenario per project result as listed in section [4. Individual sustainability plan for project results](#). They include:

- Europeana Foundation, leading a consortium of 18 partners in the deployment of the data space for cultural heritage
- Users of data space infrastructure, in particular Europeana.eu, and the data space. The main users of Europeana.eu are the four audiences it caters to: educators, researchers, cultural heritage enthusiasts, and creatives
- Other cultural heritage stakeholders: organisations such as data and technology providers, and aggregators
- The targeted marginalised communities: Jewish, Congolese, Dutch Suriname, and LGBTQIA+ communities.

4. Individual sustainability plan for specific project outputs

4.1 Technical components and tools

The tables below outline the main technical components and tools developed or extended during the DE-BIAS project. Each table describes for each outcome their main usage models and respective sustainability provisions after the project lifetime, as well as the prevalent further exploitation scenarios.

DE-BIAS Vocabulary and Knowledge Graph	
General sustainability details	
Short Description (and final status)	<p>A comprehensive Semantic Web vocabulary featuring contentious terms, detailed descriptions of their contentious nature, citations for gathering these descriptions, and suggestions for handling the terms, including proposed alternatives, if applicable. The DE-BIAS Vocabulary is multilingual, encompassing terms and descriptions in five languages (Dutch, English, French, German, Italian).</p> <p>These terms partially overlap in meaning but are not intended as direct translations, as contentiousness can vary by language and context. Each term is explained with the necessary contextual nuances specific to its language. The Vocabulary currently includes more than 660 terms across these five languages.</p> <p>The Vocabulary is utilised by the Bias Detection Tool, influencing its operational outcomes.</p>
Responsible Partner	DE-BIAS Vocabulary: DFF; Knowledge Graph: ThinkCode
Available on / Source code licence and/or copyright	<p>The DE-BIAS Vocabulary terms and associated context are available as CC BY-SA, which enables its use and display on Europeana.eu. It is available in three formats: 1) The Vocabulary is publicly available for external comments as a Google sheet. 2) The Vocabulary was converted into a Knowledge Graph and published within the EU vocabularies environment VocBench ensuring its availability and interoperability. As of December 2024, VocBench does not expose the Vocabulary data as Linked Open Data at the expected level of granularity; there might be alternatives which Europeana has to explore. 3) Additionally, the Vocabulary has also been made accessible in PDF format in all five languages on the DE-BIAS Knowledge Hub (Dutch, English, French, German, Italian), ensuring that the vocabulary can be used as a reference by individuals without the required technical expertise. The PDF Vocabulary has been extracted from the machine-readable DE-BIAS Knowledge Graph from VocBench, making the Vocabulary both available as human-readable and machine-readable info.</p>
Sustainability goal	<p>Project partners aim to sustain the vitality and awareness of the DE-BIAS Vocabulary, contingent on available funding, by:</p> <ol style="list-style-type: none"> 1. Extending their engagement with the minoritised communities consulted during the project. This continued collaboration seeks

	<p>to further enhance awareness and understanding of biased terms in cultural heritage data.</p> <ol style="list-style-type: none"> 2. Building on the ongoing relationship between project partners and minoritised communities to integrate diverse perspectives and languages into the vocabulary, thereby encouraging its adoption and reuse by other cultural heritage professionals and institutions. 3. Scheduled for January 2025: Publishing the Vocabulary in the EU Vocabularies environment to facilitate broader stakeholder engagement. This platform will enable other users to suggest new terms and use the Vocabulary as a model to create their own thematic thesauri, fostering ongoing collaboration and adaptation.
<p>General maintenance and sustainability provisions for the 1, 3 and 5 years after the project ends (if applicable).</p>	<p>Based on call requirements, DFF will keep the Vocabulary online, and ThinkCode the Knowledge Graph for at least five years after the end of the project on 31 December 2024.³</p> <p>The DE-BIAS Vocabulary itself will be kept available as PDFs, as outlined above. These PDFs will stay available through Europeana Pro or an equivalent platform for at least five years after the end of the project. EF is responsible for keeping these PDFs online and accessible.</p> <p>The Vocabulary will remain a static outcome of the project after the end of the project. Its online availability as a Knowledge Graph will be ensured by the EC Publication Office, who maintain VocBench. Further maintenance and possible development will be focused on the Knowledge Graph in VocBench.</p>
<p>Further development (if applicable).</p>	<p>The Knowledge Graph is provided as-is at the end of the project term in VocBench. The Knowledge Graph and its underlying software, VocBench, will be maintained and further developed by the Publications office of the EU as part of their Digital Europe Programme (DIGITAL). External users can make comments, suggest changes and new terms for the DE-BIAS Vocabulary via the Google sheet. DFF will notify the editorial team (one partner per language) about the modifications. The editorial team is responsible for making these changes in VocBench, thus ensuring consistency between the Vocabulary available on Google sheet and in VocBench, with the aim to further enrich and continue using the Knowledge Graph after the end of the project, ensuring its</p>

³ The DE-BIAS Vocabulary is available publicly here: <https://docs.google.com/spreadsheets/d/15adzfFK32pwwBK2bWGjkFyDVZMmtIAa2wH4ZzAoV9Q/edit?usp=sharing>

	<p>sustainability and relevance after the end of the project term.</p> <p>The Knowledge Graph will also be adapted to Europeana's CSP (Core Service Platform), as further explained in the exploitation scenario below.</p>		
Financial projection and mechanism.	<p>There is no cost associated with publishing or keeping the KG online in VocBench. Europeana foresees no extra cost to keeping the PDFs of the DE-BIAS Vocabulary available online.</p>		
Dependencies and risks to be considered	<p>The continued availability of the Knowledge Graph is dependent on the continued funding of the VocBench platform, including European Dynamics. The further development of the Knowledge Graph is dependent on external users and organisations using and extending the DE-BIAS Knowledge Graph with new terms and updates to existing terms and the consortium partners then integrating this data in VocBench.</p> <p>Risk: If support for VocBench and funding for the servers hosting VocBench Knowledge Graphs is ceased (which is very unlikely), the DE-BIAS Knowledge Graph should be hosted somewhere else, more likely in one of the partners' servers.</p>		
Particularly for each stakeholder			
Cultural heritage stakeholders	Europeana Foundation	Data space users	Specific underrepresented communities
Exploitation scenario			
CHIs can utilise the DE-BIAS Vocabulary to conduct internal audits of their digital collections and incorporate it into their de-biasing initiatives. This enables them to contextualise and refine their collections independently, without always depending on community feedback. Additionally, when used	EF will employ the DE-BIAS Vocabulary as a component within its data management process. Data providers will be able to use the Metis Sandbox to upload their datasets and run the DE-BIAS detection process on their own initiative. The responsibility for applying the bias detection to their	Contributors to the data space can utilise the DE-BIAS Vocabulary to audit both existing and newly received datasets before making them accessible on their platforms. This promotes a cohesive approach to de-biasing datasets across various	Underrepresented communities are included in digital cultural collections in a respectful and inclusive manner. These communities build internal capacity through awareness-raising activities and their engagement with cultural heritage in a safe, digital

<p>in combination with the Bias Detection Tool, the Vocabulary ensures that datasets are prepared for inclusion on open online platforms such as Europeana.eu or other platforms within the data space and beyond.</p>	<p>datasets lies with the data providers. The Vocabulary will serve as a mechanism to identify and flag contentious terms automatically. By integrating the DE-BIAS Vocabulary through the Bias Detection Tool into the Metis Sandbox, EF provides data providers the tools they need to enable efficient and effective management of cultural heritage data while upholding principles of diversity and respect.</p>	<p>platforms within the data space.</p> <p>Moreover, the broader user community of the data space benefits from the tool in several ways. Firstly, they gain protection from harmful content through improved contextualisation. Secondly, they have the opportunity to learn about contentious terms, their historical usage, and contemporary alternatives. Lastly, they enjoy a more inclusive user experience within the data space.</p>	<p>environment. Furthermore, they will be able to expand and review the current DE-BIAS Vocabulary through its availability on VocBench and collaboration with DE-BIAS project partners.</p>
	<p>Europeana development playbook scenario⁴: The Knowledge Graph terms will be imported to the Europeana database for use in the frontend UX/UI solution. An extension of EDM might be needed to allow for a more complete inclusion of the DE-BIAS Knowledge Graph terms. EF can, at its own initiative, decide to update their local copy of the DE-BIAS Vocabulary using the DE-BIAS API. EF will only stay responsible for maintaining their own integrated version of the DE-BIAS Vocabulary. Therefore no Europeana</p>		

⁴ https://drive.google.com/file/d/12h1O6OLDawoua1pWHlsq5_EI0D12k7T5/view?usp=sharing

	Playbook scenario will be attached to this outcome, as there is no agreement between EF and an external provider.		
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Bias Detection Tool		
General sustainability details		
Short Description (and final status)	A software tool that enables users to input a dataset in a specific format and analyse it by comparing its metadata fields with the terms described in the DE-BIAS Vocabulary. The tool flags terms found in the dataset's metadata and recommends actions to contextualise or replace these terms. The tool is available as both a standalone version and an integrated version with the data space infrastructure.	
	<i>Standalone version</i>	<i>Integrated version with data space infrastructure</i>
Responsible Partner	ThinkCode is the responsible partner and owner of the Bias Detection Tool. ThinkCode is responsible for the standalone version and API offering an entry point that allows external client applications to use the Bias Detection Tool.	Europeana Foundation is responsible for the connection with the Europeana Annotation API and plugin integration with the Metis Sandbox.
Available on / Source code licence and/or copyright	The tool's source code can be accessed here: https://github.com/ails-lab/de-bias/ . It is available under the AGPL-3.0 license.	The enhancement done on the data space infrastructure and its integration components can be found in the Europeana Github repository. All Europeana code repositories are licensed under EUPL 1.2.
Sustainability goal	Project partners aim to deepen engagement with Europeana aggregators, data partners, and CHIs to enhance the usability of the tool, whether as a standalone version or integrated into the data space. This effort will ensure the identification and mitigation of harmful terms in newly aggregated or personal collections, addressing biases and inaccuracies within cultural heritage datasets. By doing so, it will more accurately represent diverse perspectives	

	and strengthen the position of digital cultural collections as a trusted and inclusive resource for cultural heritage information.	
General maintenance and sustainability provisions for the 1, 3 and 5 years after the project ends (if applicable).	In accordance with the call requirements, ThinkCode will maintain the Bias Detection Tool for at least five years after the end of the project on 31 December 2024. The full functionality of the tool will be supported for 1 year, while for the following 4 years, the LLM-based disambiguation module will be deactivated by default due to high maintenance costs, and will be activated upon request.	In accordance with call requirements, EF will maintain the integration between the Bias Detection Tool and the data space infrastructure for at least five years after the end of the project on 31 December 2024. This integration covers the ability to call the DE-BIAS API from the Metis Sandbox, and the possibility of EF to use the Bias Detection Tool on its own records.
Financial projection and mechanism	No further development is planned.	The integration will be financially maintained by data space funding: CNECT/LUX/2021/OP/0070 contract, which supports the deployment of the data space by the EU.
Exploitation scenario	The standalone tool can be exploited by aggregators and CHIs who want to check if their datasets have any harmful or biased terms. The standalone tool will be provided free of charge without any limitations, and will include a clear textual tutorial. This allows aggregators as well as individual CHIs to independently identify biased terms, and then decide on how to deal with those terms. This is an important step for any CHI or aggregator that wishes to make their dataset available online for a wide public, by ensuring a validation of the dataset against the DE-BIAS Vocabulary. The DE-BIAS API is also freely accessible to any third party who	EF will be able to utilise the Bias Detection Tool to uphold the integrity and inclusivity of cultural heritage data in the collections available on Europeana.eu. This tool can be crucial in identifying and providing context to contentious terms in cultural heritage datasets, thereby ensuring a more multifaceted representation of diverse perspectives and narratives.

	wants to use it to analyse their datasets, or extract the vocabulary.	
<p>Europeana Development Playbook Scenario: The Bias Detection Tool will be integrated in the Europeana CSP following Integration Scenario B.</p>		
<p>Integration with the Europeana CSP will be at the API level. Data will be submitted as input via the DE-BIAS API, and in the next step the Bias Detection Tool will use the DE-BIAS Vocabulary to parse the metadata and identify the bias terms. The terms are returned as output from the DE-BIAS API along with the information needed to locate them in the source. This data will be used in Metis Sandbox reports as well as integrated into the metadata as enrichments.</p>		
<p>Possible Further Developments: <i>Deeper integration with the data space</i></p>		
<p>After functional analysis of the impact of integrating the Bias Detection Tool in Metis, the decision was made not to integrate the tool in Metis itself. The main reasons for this decision were that this would make Metis processing too dependent on a performant tool, and the integration would result in a significant decrease in performance of Metis. Integration has instead happened in the Metis Sandbox, following scenario B as described above.</p> <p>Current functionality in the Metis Sandbox as of the end of the project on 31 December 2024:</p> <ul style="list-style-type: none"> • A Sandbox user can select to run bias detection as part of their dataset processing. • The Sandbox will perform the analysis using the plugin and store the data. • The Sandbox will provide a user-friendly, browsable report for the user with the detected bias. • The Sandbox will make the full report available for download in CSV format. <p>Further development or maintenance of this functionality of the Metis Sandbox is possible but not guaranteed. After the end of the project term an evaluation of the Bias Detection Tool and Knowledge Graph, performed by EF, will result in a decision on the further maintenance or development of the integration with Metis Sandbox.</p>		

DE-BIAS frontend functionality on Europeana.eu

General sustainability details

Short Description (and final status)	On Europeana.eu's user interface (UI), we introduced a component that provides context for sensitive terms flagged by the Bias Detection Tool on item pages. Users can learn more about its context when they hover over or click on a flagged term.
Responsible Partner	EF
Available on/Source code licence and/or	The code for the component on Europeana.eu is publicly available on Europeana's Github: https://github.com/europeana/portal.js . The license is

copyright	noted on the readme and aligns with the EUPL-1.2 licence .
Sustainability goal	EF is committed to the sustainability of the component that provides context to sensitive terms flagged by the Bias Detection Tool on item pages for as long as the project partners continue to maintain the tool and the Vocabulary of biased terms. This dedication ensures that the feature will remain available and functional for the users, contributing to Europeana.eu's overall reliability and quality.
General maintenance and sustainability provisions for the 1, 3 and 5 years after the project ends (if applicable).	<p>Following call requirements, EF will maintain the DE-BIAS component on Europeana.eu as part of the data space infrastructure for at least five years after the project ends on 31 December 2024.</p> <p>EF commits to updating the frontend functionality with at least one new iteration in the first year after the end of the project term.</p> <p>EF commits to maintaining the functionality as part of its CSP for at least 3 years after the end of the project term. The functionality will be continuously evaluated to ensure quality, seamless user experience, and consistency. If the functionality is deemed as no longer fitting user needs or contributing to a negative user experience, the functionality will be re-assessed and might be taken offline at the discretion of EF.</p> <p>Regardless of whether the functionality stays implemented in the Europeana CSP or not, EF commits to keeping the source code of the functionality available on its Github repository for at least 5 years after the end of the project term.</p>
Europeana development playbook scenario ⁵	DE-BIAS user interface component on Europeana.eu is considered scenario A from the Europeana development playbook.
Financial projection and mechanism	The user interface component on Europeana.eu will be financially maintained by data space funding: CNECT/LUX/2021/OP/0070 contract, which supports the EU's deployment of the data space.
Dependencies and risks to be considered	Dependency 1: the frontend functionality is dependent on a working integration of the DE-BIAS Vocabulary. This can either be an integration that ingests the DE-BIAS Vocabulary as part of EF's Entity API database, and/or an integration that uses the Metis dereferencer to dereference the DE-BIAS Vocabulary terms via content negotiation of their URIs. A consistent uptime of these integrations is necessary for the frontend functionality to work well.

⁵ https://drive.google.com/file/d/12h1O6OLDawoua1pWHlsq5_El0D12k7T5/view?usp=sharing

	<p>Dependency 2: an UX of the frontend functionality is dependent on the DE-BIAS Vocabulary being up-to-date, and the Bias Detection Tool having high enough precision to minimise false positives. To a lesser extent, monitoring the recall and accuracy of the tool is also important, although the quality threshold for precision is deemed to be more important and thus higher.</p> <p>Risk 1: users run into too many false positives, creating the impression that the tool does not work. This might result in negative feedback or users negatively assessing the Europeana.eu website as a whole. For the DE-BIAS Vocabulary delivered by the end of the project this risk is minimized through a thorough validation of the annotations.</p> <p>Risk 2: users experience the flagged terms to not be up-to-date with current sensitivities and societal norms.</p> <p>Risk 3: users have no way of providing their own feedback on contentious terms, or do not feel they can do so adequately using the Feedback mechanism. This risk is rather low if a link to the Google sheet of DE-BIAS Vocabulary will be provided, which allows for comments.</p>		
Exploitation scenarios particularly for each stakeholder			
Cultural heritage stakeholders	Europeana Foundation	Data space users	Specific underrepresented communities
<p>CHIs will be able to contextually flag and provide additional information to sensitive terms used in their collections, which are available on Europeana.eu.</p>	<p>EF will use the UI component developed as part of the project to enhance the user experience on Europeana.eu by ensuring that users understand the context in which the sensitive terms were used and why.</p>	<p>Now that the sensitive terms are contextualised and their use is clarified, data space users will have a better experience interacting with items on Europeana.eu. All users will feel more included and respected regardless of their heritage, gender and background.</p>	<p>Members of minority communities affected explicitly by sensitive terms will feel more included and empowered. They should feel more comfortable accessing and reusing items available on Europeana.eu. We hope they will also appreciate the effort we invested in educating the general public about the historic use of sensitive terms</p>

			and offering appropriate alternative terms to use in their place, which have a positive connotation.
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Enhancement of existing tools			
Tool	Enhancement	Partner	Further development and maintenance
Europeana APIs	Annotation API: Added support for the submission of biased terms and vocabulary.	EF	Europeana APIs will be further developed and maintained under the <i>CNECT/LUX/2021/OP/0070 contract</i> , which supports the deployment of data space by the EU.
CrowdHeritage platform	Extended Crowd Heritage Platform to support the validation of biased terms.	Datoptro n	Maintenance of the extended Crowd Heritage platform.
Europeana Data Model	Extension of EDM to allow for the storage and display of tagged terms and concepts from the DE-BIAS Knowledge Graph	EF	After subjective analysis of the quality of the DE-BIAS Vocabulary management and Knowledge Graph, EF might decide to extend EDM to allow for the more complete storage and display of detected bias terms in the metadata of cultural heritage objects that have been tagged during detection with the Bias Detection Tool.

4.2 Content and enrichments on the data space

EF will continue to store and provide access to the items ingested through the Europeana Aggregation System on Europeana.eu.

EF commits to storing and giving access to the content and enrichments ingested through Metis due to the DE-BIAS project or enrichments provided by the Bias Detection

Tool after they have gone through quality evaluation by EF staff, for at least 5 years after the end of the project term on 31 December 2024.

The annotations (flagged terms) that result from the analysis of the 5.4 M records will be ingested and displayed when their quality allows. Once the quality of the annotations is analysed and a decision has been made on whether they will be ingested and shown on the frontend, this will inform the final decisions on the maintenance of the bias detection system integrated in the Metis Sandbox, and the frontend UX/UI solution. The detection system itself will stay available in the Metis Sandbox for five years after the end of the project.

Furthermore, as the understanding of contentious language keeps evolving, the DE-BIAS Vocabulary must stay updated to reflect this evolution. This ongoing updating process ensures the accuracy of the flagged terms and their visibility on Europeana.eu. EF reserves the right to stop displaying the contextualisation of contentious terms on the frontend if it is deemed that the Vocabulary has not been adequately maintained.

EF regularly depublishes items from its database for various reasons. These reasons might include (1) the original object is no longer accessible, (2) the need of an item to be updated, or (3) a user requests a notice and takedown under GDPR, among others. When items are depublished, they are no longer visible on Europeana.eu. Some of the depublished items might contain flagged biased terms; therefore, these terms and their contextualisations will also no longer be displayed.

Finally, all enrichments during the project will be maintained as part of Europeana's data repository under the *CNECT/LUX/2021/OP/0070 contract*, which supports the deployment of the data space by the EU.

4.3 Editorials on Europeana.eu and Europeana Pro

Throughout the DE-BIAS project, over 20 editorials - see full editorial list in [Annex II](#) - have been published on Europeana.eu and Pro.europeana.eu. These editorials have served as a platform to shed light on minoritised communities and their contributions to the project. They also aid the professional stakeholders of the data space to detect, analyse and counteract bias in their own collections or user-oriented environments/applications. Thirdly, both on Europeana.eu and Pro.europeana.eu editorials shed light on the processes of 1) engagement and co-creation with communities, 2) de-colonising and de-biasing cultural heritage collections, and 3) improving user experiences in dealing with digital collections. As we move forward, it is imperative to ensure the sustainability of these online resources, not only for the

benefit of the cultural heritage sector but also as a means to advance capacity building around diversity in digital cultural heritage.

The post-project sustainability of our editorial work is closely tied to the continuous operation of Europeana.eu as a whole. EF will ensure the availability and access to these editorials for at least three years after the end of the project, the editorials will be maintained as part of the *CNECT/LUX/2021/OP/0070 contract*, which supports the deployment of the data space by the EU.

Some content originally published on Europeana Pro will be migrated to a different platform, most likely either [Data Space for Cultural Heritage website](#) or the [Europeana Knowledge Base](#). If this happens, EF will aim to put in place redirect links to ensure that anyone who tries to access an out-of-date URL for a piece of DE-BIAS editorial will still get access to that piece of editorial on its new platform. EF will take the editorials created during the Action into account in its editorial plan. Editorials may be re-promoted if they fit within the editorial plan.

4.4 Capacity Building Materials

Capacity building materials on Europeana Pro, the Europeana Knowledge Base and Europeana's Training Platform (Learning Management System), depending on the type of capacity building material:

Any capacity building materials developed during the project and available on platforms that are maintained by EF will remain accessible for at least three years after the end of the project. This includes tutorials and guidelines about the use of the Bias Detection Tool in the Europeana Metis Sandbox, and any learning materials published on Europeana Pro (or any equivalent website of the data space) and Europeana's Training Platform.

Recordings of events and workshops made available through EF channels such as the [Europeana Youtube channel](#) will stay online and available for at least three years after the end of the project. These recordings may be subject to takedown notices, with which EF will comply, such as GDPR takedown notices or Youtube Copyright Strikes.

A self-paced [Europeana Academy](#) course developed during the project term will be made available on the Europeana Academy after the end of the project term and will stay available for at least three years after the end of the project term. EF reserves the right to take the DE-BIAS self-paced course offline due the following reasons:

- 1) There is too little operational resource to keep the course maintained and updated
- 2) The contents of the course have become outdated and no partners are available to update the course contents

See full list of capacity building activities in D5.3 Report on Capacity Building Activities.

5. Conclusion: Sustainability Plan

The outcomes of the DE-BIAS project are paramount in making the cultural heritage sector more inclusive and fair. By using new tools and working closely with marginalised communities, it uncovers and explains biased language in cultural records, paving the way for better representation in the digital world. The project's sustainability plan ensures lasting positive effects, helping build a stronger and more inclusive cultural heritage sector.

Through collaboration with the European data space for cultural heritage and engagement with underrepresented groups, the project creates a solid base for future growth and change in the sector. Its tools— the DE-BIAS vocabulary, Knowledge Graph, and Bias Detection Tool—help ensure that all cultures are represented accurately and respectfully, promoting fairness and inclusion in digital spaces.

The project also focuses on training and learning to help stakeholders continue the work and inspire the sector to address biases and celebrate diversity. This encourages a shift in thinking, fostering critical reflection and lasting improvements in cultural heritage practices. The self-paced course on the Europeana Academy is crucial in providing capacity building to the cultural heritage sector on this topic.

In summary, DE-BIAS is a transformative effort to enrich cultural stories and strengthen Europe's social cohesion. Its impact will guide future strategies, highlighting the importance of diversity, inclusivity, and respect for all cultural narratives in the digital age.

6. Impact Assessment plan and findings

The impact assessment for the DE-BIAS project is reported in detail in Annex B, including the plan and findings of both sustainability plans. In this section we will update the plan reported in the sustainability plan v.1 and share the final findings of the project's impact assessment, structured around five core research questions that align closely with the project's objectives.

6.1 Update on the impact assessment plan

The research questions remain the same and in accordance with the project objectives. In the first sustainability plan, it was reported that the following stakeholders were identified and prioritised in terms of evaluating their experience of the DE-BIAS project approach and tools:

1. Cultural heritage professionals that are responsible for collections (as part of the re-use audience)
2. Europeana Aggregators using the tool to check collections before ingesting data into Europeana Core Service, feeding back the results to the data providers
Communities who engage with CHIs to address discriminatory terminology
3. Researchers interested in AI driven approaches to cultural heritage (as part of the reuse audience)
4. General public / Europeana users to provide feedback on the UI/UX design (display on the Europeana website)

For the final impact assessment, the focus was on cultural heritage professionals and aggregators, communities, and the general public. The researchers were incorporated in the general public's group, although their needs differ. The evaluation methods were followed as planned. No qualitative surveys were held on europeana.eu for editorial published by the DE-BIAS partners, due to delays in providing editorial to the platform. That said, quantitative user data was used to evaluate the editorial in comparison to editorial published by other projects in the past.

6.2 Impact & sustainability

The impact findings will feed the sustainability of the following years after the end of the project to ensure that the tool is being used and developed according to the user's feedback. The aim is to keep engaging marginalised communities and cultural heritage professionals and researchers to build sustainable, cooperative relations. These relations impact the data space and its stakeholders, and the EF can play a significant role in building their capacity through the Europeana Academy. Subsequent EU-funded

projects can build on the results, tools and methodologies developed in the DE-BIAS project to further diversity, equity and inclusion in the GLAM sector.

6.3 Summary of findings

6.3.1 Capacity building

The capacity building events reached a total of almost 700 participants, which is a much higher KPI than the 400 participants the project estimated at its beginning. This is a very positive outcome because it shows the high interest of cultural heritage professionals and researchers in this topic and the development of a tool such as the Bias Detection Tool.

Further feedback from the participants of the capacity building events that have started in March 2024 and run until November 2024 has provided insights on future improvements that can be implemented in capacity building activities. EF will take this feedback into account when further developing and updating its capacity building offer.

The background on collecting these data is thoroughly reported in D5.3 "Report on Capacity Building Activities": These activities were carried out with different focuses: awareness raising, community engagement, DE-BIAS typology and vocabulary, the last events concentrated on the validation and use of the DE-BIAS tool. Satisfaction surveys have been circulated after each of the capacity building events to measure the quality of the experience of taking part in these events and the impact that participants think it will have on their own work. For these training and capacity building outcomes, Europeana Foundation has set a benchmark of 75%. A detailed analysis of the results can be found in the "Impact Assessment Plan - DE-BIAS", Chapter 4.1 "Capacity Building". Overall, the results are positive: On average, 87% of the participants indicated they gained practical information to use in their work, 90% of the participants gained information they would share with others, and 74% felt up-to-date with the topic after attending one of the DE-BIAS capacity building offerings.

6.3.2 Project partner evaluation, December 2024

An initial partner evaluation survey was conducted in-person during the Project Management Board meeting in Antwerp in June 2024. The results of that survey are reported in detail in *Sustainability Plan and Impact Assessment V1*.

A second and final partner evaluation survey was held in December 2024 to gauge the evolution of partner sentiment throughout the last half year of the project. Through an online survey, partners were asked to evaluate partnership in two regards: namely partnership working as a consortium and partnership working with minoritised communities. They did so by reflecting on three questions:

- What worked well?
- What was a challenge?
- What would you improve?

The following are the main findings from the survey results, encompassing all comments provided without considering the frequency with which specific issues were raised:

What Worked Well

- Strong engagement and collaboration among partners, with effective coordination and impactful teamwork overall.
- Diverse expertise led to significant results and learning opportunities.
- Community work was effective, producing impactful outputs like the [Community Engagement Methodology](#), the [Recommendations for Community Engagement](#), the "Wheel of Bias," and a series of blog posts focusing on how to address diversity in metadata.
- Meetings were productive and time-efficient.
- Adaptable funding supported partners and boosted efficiency.

Challenges

- Due to the short project run time and the extremely closely linked tasks, tight timelines and sequential dependencies could cause delays.
- In some cases and due to newly emerging tasks, roles could initially not be entirely clear and gaps in concrete linguistic expertise added challenges.
- Variability in partner contributions (due to uneven PM distribution) slowed progress at some points.
- Regarding Community engagement work, tasks turned out to be more time-intensive than estimated and sensitive, requiring extensive effort from the involved partners.

- Interdisciplinary collaboration sometimes complicated alignment.

Suggestions for Improvement

- Involve communities earlier and in proposal writing and project design phase.
- Adjust timelines and KPIs to match the workload of partners.
- Add linguistic and humanities experts from the start to support etymological aspects of creating the vocabulary.
- Align dissemination efforts across partners.
- Distribute tasks more equitably in the project design phase and fund community work better.

6.3.3 Evaluation and validation of the Bias Detection Tool

According to the GA, evaluation should be carried out by Europeana Aggregators only, but we extended the group of stakeholders to test the usability of the DE-Bias tool to the ENA network, APEF Country managers and the European Students' Association for Cultural Heritage. In total, four events have been carried out from 23 October to 11 December 2024.

During the evaluation events, the project team encountered a committed and vocal audience, including participants of previous dissemination and capacity building events. This finding illustrates that the DE-BIAS project and tool meet the CHIs' needs for support in examining cultural heritage collections' metadata for contentious language. A more detailed analysis of the user feedback, including the feedback on the display of the detection results are available in D4.2 "Evaluation of the DE-BIAS Tool".

During the validation campaigns on CrowdHeritage that started in July 2024 and ran until November 2024, user testers had the opportunity - apart from accepting or rejecting annotations made by the tool - to also provide a more general feedback in the comments field of the platform. The feedback has provided insights on future improvements:

- How can the users inform about terms that are not part of the vocabulary yet?
- How can the tool be applied in the user's collections and/or in internal processes and workflows of collections?
- Connect the DE-BIAS vocabulary with national banks of terms (where applicable), but reflect on how to address original titles of work.
- Critical need for contextualization and a nuanced understanding of the cultural

significance of language.

- Temporal contextualisation of terms by taking into account when metadata were created.

In fact, the user feedback addresses topics that have also been discussed in the consortium, e.g. whether or not harmful terms should be flagged in original titles, the lack of linguistic expertise in the project, the need for temporal contextualisation of metadata. A detailed analysis of the quantitative results of the validation campaigns is thoroughly reported in D4.1 “Report on crowdsourcing campaigns with the CrowdHeritage platform”.

6.4 Implications for the project’s sustainability and legacy

The research questions set out for the impact assessment plan were answered as follows based on the collected data of the project, reported in the previous section of both versions of the sustainability plan.

RQ1: To what extent has the project enriched and improved the inclusivity of the data offered by Europeana? How has this contributed to ensuring that digital cultural collections on the platform represent diverse perspectives?

- [DE-BIAS guidelines on representing diversity in metadata](#) alongside a wide range of other deliverables and recommendations available on the [DE-BIAS Knowledge Hub](#) under “DE-BIAS project community engagement resources” and “DE-BIAS project capacity building resources,” have provided actionable frameworks for identifying and addressing bias in metadata. Additionally, these resources offer guidelines for effective community engagement and are fostering more inclusive practices in archival work and data curation. A self-paced training course for archives, scheduled for publication in mid-January 2025, will further expand these efforts.
- The creation of over 30 galleries and diversity-focused blog posts has spotlighted objects that narrate the stories of minoritised communities, amplifying voices that are often unheard. This initiative, aligned with the project’s goals, has also helped to enrich the inclusion of diverse heritage materials and enhanced the representation of various cultures and histories within Europeana’s collections.
- By integrating insights from multiple minoritised communities, the project has ensured a broader range of perspectives, making archival collections more reflective of the diversity within and across these communities.

RQ2: Has the project effectively created the conditions where bias, stereotypes and derogatory speech in the descriptions of digital cultural heritage can be detected, made visible, contextualised and counteracted?

- Development of tools, recommendations and other deliverables targeted identifying and counteracting bias in cultural heritage collections. They were introduced to the archival sector in the scope of a wide variety of webinars, workshops, presentations or poster sessions and are easily and centrally accessible on Europeana Pro in the DE-BIAS Knowledge Hub.
- Positive feedback received and high numbers of participants to events organised by DE-BIAS partners underline the great interest of archives in tackling problematic language and misrepresentation in their collections. The release of the DE-BIAS vocabulary with around 680 problematic terms across five languages in December 2024 was highly anticipated, so is the release of the DE-BIAS tool that is available together with instructions and a documentation in der DE-BIAS KKnowledge Hub.

RQ3: To what extent has the project encouraged representation, promoted accessibility and fostered trust-based relationships between marginalised communities and CHIs? How has their knowledge and expertise been leveraged?

- Community work (e.g., workshops and relationship-building) was effective but time-intensive and resource-demanding, demonstrating the commitment to fostering trust.
- The lack of early involvement of community members in the proposal phase was identified as a missed opportunity for enhancing representation.
- Additional, self-financed outputs like the "Face/Surface" exhibition curated by KUL reflect successful collaboration with marginalised communities.
- Quantitative Metrics: more than 700 participants in project's events, of which 100 directly connected with communities and activists.
- Tool Validation Feedback (campaigns): 145 active contributors; want to engage and use the tool in their collections; they highlight the need to critically contextualise language, time and place, also of created metadata.

RQ4: In what ways has the project built the capacity of the cultural heritage sector to understand, analyse and address bias in their collections? Do we see signs that sector actors are more likely to work in a bottom-up way with communities and community allies?

- Quantitative impact was shown: more than 700 participants in events

- Cultural heritage professionals are eager not only to use the tool in their collections but also develop internal guidelines on how their colleagues can use it in future exhibitions
- Cultural heritage professionals had contact with communities and show interest to adopt this approach in other activities and contexts
- Engagement with CHIs led to interest in adopting standalone versions of the project's outputs, indicating growing sectoral capacity and interest in community-driven approaches.
- The challenges of community work underscored the need for better integration of funding and resources in capacity building efforts.
- There are clear opportunities for the project to continue building capacity in the cultural heritage sector. An example can be found in the recent presentation by Erin Canning (University of Oxford) at the 2024 CIDOC-CRM conference, titled *Modelling museum critical cataloguing practices using CIDOC CRM*. There are possible synergies to be found between the [ontology](#) developed by Erin and the DE-BIAS Knowledge Graph.

RQ5: To what extent can design changes on Europeana help contextualise contentious language in collections and enhance societal debate through polyvocal narratives?

- Partner feedback showed that the current UI/UX design proposal was very intuitive and easy to work with
- Partner feedback indicated that the UX/UI solution could possibly show when certain terms were added or edited, showing the discussion behind the inclusion and wording of a term more transparently. This transparency could also lay bare if the inclusion and wording of a term was the result of community engagement.
- Self-evaluation indicated the project's focus on bias detection and contextualisation laid the groundwork for enhancing societal debate through polyvocality.
- Self-evaluation showed that outputs like the DE-BIAS Vocabulary, DE-BIAS guidelines on representing diversity in metadata, and Community Engagement Methodology have the potential to support design changes that address contentious language.
- Self-evaluation highlighted some delays and uneven partner engagement (PM distribution) in creating workshops with communities, creation of the vocabulary, and evaluation of the vocabulary.

7. Conclusion Impact Assessment

The DE-BIAS project has made important progress in tackling bias and promoting diversity, equity, and inclusion in digital cultural heritage collections. Through its tools, activities, and community-focused methods, the project has made data on Europeana.eu more inclusive and better able to represent diverse perspectives. By addressing bias and harmful language, DE-BIAS has laid a solid foundation for creating fairer cultural narratives.

With over 700 cultural heritage professionals and community members engaged, the project has shown strong interest across the sector in addressing these issues. Tools like the "Wheel of Bias," along with training sessions and vocabulary development, have helped empower institutions to identify and challenge bias. These efforts have also encouraged CHIs to work more closely with communities and adopt more inclusive approaches.

The project faced challenges with unclear tasks, tight timelines, and gaps in expertise, but it also demonstrated the importance of collaboration and adaptability.

The impact of DE-BIAS will extend beyond the project's end. Its tools and strategies provide practical ways for CHIs to address bias and work more inclusively with communities. This work sets a strong example for future projects and encourages the cultural heritage sector to prioritize diversity, equity, and inclusion. By building on DE-BIAS's successes, the sector can continue to create more representative and inclusive digital collections that reflect the full richness of our shared history.

Annex A: Editorial list

Europeana Pro posts

	Title/blurb	Content type	Publication date	Live link
1	'Over €4.4 million granted to four new projects to enhance the common European data space for cultural heritage'	News post	12/12/22	Live link
2	Project page	Project page	14/11/22	Live link
3	'Nothing about us without us': how the DE-BIAS project will explore participation, partnership and community engagement	News post	04/05/23	Live link
4	Milestone no 1: Knowledge co-creation methodology applied in the 1st community event. WP2, 7-KU Leuven. A news post about the first co-creation event is published on Europeana Pro.	News post/ events page	27 Sep 2023	Live link
5	Milestone no 1: Knowledge co-creation methodology applied in the 1st community event. WP2, 7-KU Leuven. A news post about the first co-creation event is published on Europeana Pro.	News post/ events page	27 Sep 2023	Live link
6	Milestone no. 3 . First capacity building event for CHIs organised. WP5, 5-MICHAEL CULTURE. First capacity building event takes place and a blog about it is published on Europeana pro.	News post	29 February 2024	Live link
7	Event page for De-Bias webinar	Event page	28 Feb 2024	Live link
8	DE-BIAS project enriches archives through community collaboration - How NISV is working with the Surinamese community for the project	News post	19 March	Live link

9	Co-creating inclusive archives: DE-BIAS takeaways on community collaboration	News post	14 August	Live link
10	DE-BIAS project launches a Community Engagement Methodology	News post	29 August	Live link
11	DE-BIAS project: decoding antisemitic clichés in cultural heritage collections	News post	2 October	Live link
12	FACE/SURFACE: Co-curating descriptions of colonial photography with the DE-BIAS project	News post	9 December	Live link
13	DE-BIAS recommendations	News post	19 Dec 2024	Live link
14	Introducing the DE-BIAS tool	News post	19 Dec 2024	Live link
15	DE-BIAS Tool page	Tools page	19 Dec 2024	Live link
16	Project wrap up post	News post	Jan/Feb 2025	

Europeana.eu stories

	Title/blurb	Content type	Publication date	Author
1	A Queer tour exhibition	Exhibition	11/06/2024	EFHA and Queering Rome (Dani Martiri)
2	Claude Cahun	Immersive Story	25/06/2024	EFHA + Queering Britain (Althea Alberani)
3	Colonial Depictions	Story	27/06/2024	KUL (Sofie Taes)
4	Colonial Descriptions	Story	08/07/2024	KUL (Sofie Taes)

	Title/blurb	Content type	Publication date	Author
1	A Queer tour exhibition	Exhibition	11/06/2024	EFHA and Queering Rome (Dani Martiri)
5	Co-curating postcolonialism	Story	28/11/2024	Jonas van Mulder
6	Exploring Siberia through European collections	Story	30/12/2024	Inna Kizhner

Galleries on europeana.eu

	Title/blurb	Content type	# of items	published?	Live link
1	Workshop 12-08	Gallery	17		link
2	Power behind the lens	Gallery	18	YES	link
3	MAI research	Gallery	19		link
4	Queer Pride	Gallery	27	YES	link
5	Claude Cahun	Gallery	12	YES	link
6	A queer gallery	Gallery	25	YES	link
7	Politionele acties	Gallery	11		link
8	Berber	Gallery	23	YES	link
9	Medicine Man	Gallery	28	YES	link
10	Courtisane	Gallery	19	YES	link
11	"Wife Of"	Gallery	26	YES	link

Annex B: Impact assessment plan

To avoid overburdening this deliverable, we have not attached the full impact assessment plan to this document. You can read the Impact Assessment plan [here](#).