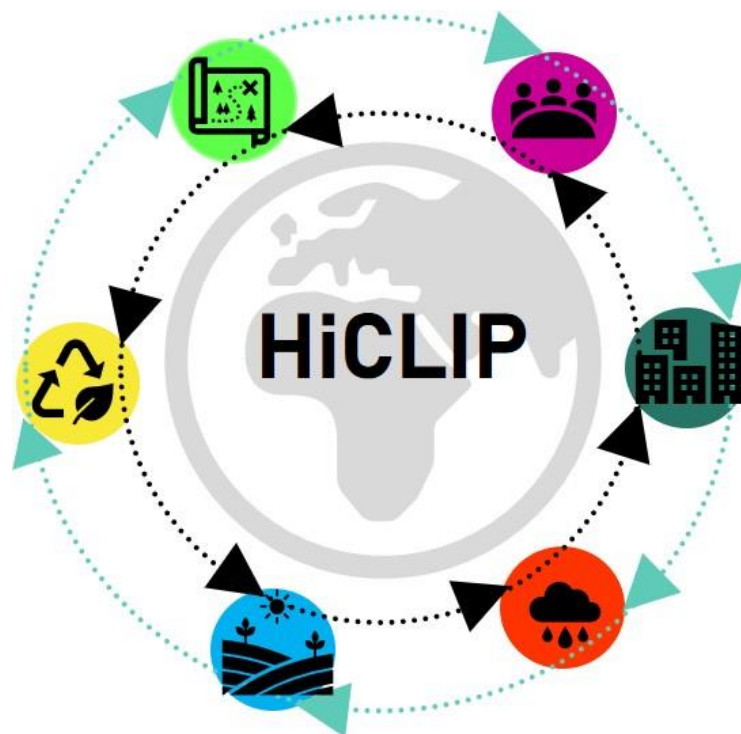# HERITAGE IN CLIMATE PLANNING

A Pilot Project for Understanding the Inclusion of Culture in Climate Actions

REPORT

by the Working Group 4 of the Climate Heritage Network

AUTHORS

Dr. Paloma Guzman

Norwegian Institute for Cultural Heritge Research, Department Heritage and Society

Paloma.guzman@niku.no

Dr. Cathy Daly

University of Lincoln, School of History & Heritage

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Working Group (WG) 4 co-ordinator:

Andrew Potts, ICOMOS

Working Group (WG) 4 pilot project participants:

 Álvaro Gómez-Ferrer Bayo, ICOMOS
Henry Chibueze Ivo, Henivoc Project Consult Limited, Enugu, Nigeria
Ibrahim Tchan, Ecomusée Tata Somba (Benin)
Inge Appermont, Flanders Heritage (Onroerend Erfgoed)
Ishanlosen Iodiaua, ICOMOS Nigeria
Isuf Koci & colleagues, Croatia Green Building Council
Jacqui Donnelly, CHN Steering Committee
Julianne Polanco & colleagues, California Office of Historic Preservation
Khandokar Mahfuz ud Darain, Khulna University, Architecture Discipline (Bangladesh)
Michael Netter, Institute of Historic Building Conservation (IHBC)
Olufemi Adetunji, NERD Multi-Concepts Nigeria Rosa Milito , ICOMOS
Shannon Miller & colleagues, Office of Historic Preservation, City of San Antonio
Stacy Vallis, ICOMOS Emerging Professional Working Group
Witiya Pittungnapoo, Naresuan University (Thailand)

CONTENTS

SUMMARY

Heritage in Climate Planning (HiCLIP) is a project undertaken within the Climate Heritage Network to support the mainstreaming of the cultural sector in climate planning. Cultural resources can be man-made artistic artefacts and material heritage (historic buildings, landscapes, museums etc.), significant to a community, nation, or humanity. They also include intangible elements such as the living cultural expressions, traditions, knowledge and skills that provide humans meaningful linkages with their surroundings, whether urban, rural or natural.

This report presents the results of a pilot project that assessed the governance treatment of cultural resources and the role this gives to the cultural sector in nine climate plans from eight different countries covering the national, regional and municipal levels of governance. Climate plans are comprehensive roadmaps used by governments to organize climate action. These mechanisms are commonly top-down designed for implementing global climate goals into local contexts. Through planning documents, governments state which sectors and actors are responsible to take adaptation and mitigation actions, who -and what- is vulnerable to climate change, and in which spatial contexts actions should be prioritized. Planning processes embedded in existing political organization of systems may risk perpetuating inequalities, injustice and unsustainable patterns. Conversely, integrative climate strategies that consider cultural resources may be more successful at producing innovative collaborations to localise climate goals (Adger et al 2013), including those based on equitable and just transitions.

The HiCLIP methodology identifies governance entry levels for mobilizing culture in adaptation and mitigation efforts by following planning statements according to policy discourse analysis. In its pilot trial seventeen thematic activities that align with adaptation and mitigation actions, and with which culture is frequently associated across policies, were identified. Cultural heritage is increasingly acknowledged in climate plan's strategic visions as necessary to achieve sustainable climate action through nature and biodiversity-related sectoral fields. However, explicit definitions of what constitutes such cultural resources (e.g. heritage categories, social groups and cultural values) in the spatial contexts of climate actions were found to be lacking. In addition, some cultural resources, such as museums and the Arts, were largely absent from the plans analysed.

The report concludes that the current state of the practice points to a dichotomy in which cultural resources are increasingly recognized but culture-related expertise for their appropriate management is not always integrated into planning processes. We argue that a more explicit inclusion of cultural elements, the identification of values attributed by broader social groups and relevant expertise in climate plans, should be an indicator for localized global goals under principles of justice and equity. The inclusion of culture can also support the coherency of governance tools and the sustainability of efforts by tailoring global climate concerns into climate strategies, actions and assessments that consider local contexts and communities. HiCLIPs' interdisciplinary methods help to bridge the current gap in understanding between climate action and cultural management. The multidisciplinary research process and practices of HiCLIP aim to overcome some of the cognitive biases at the basis of sectorized planning which prevent efficient collaborations and thus, the mainstreaming of the cultural sector in climate planning.

SECTION 1

INTRODUCTION

1.1.   Why the Climate Heritage Network?

In 2019 the Climate Heritage Network (CHN) released its first action plan to help mobilise arts, culture, and heritage for Climate Action. The plan includes eight (8) scalable, culture-based climate action tools and policy solutions. Working Group 4 (WG4) of the CHN was formed to work towards mainstreaming arts, culture, and heritage into climate action plans, adaptation frameworks, and other local, regional, and national planning instruments. The International Council on Monuments and Sites (ICOMOS) is the coordinator of WG4. ICOMOS is a global, non-governmental organisation of heritage professionals and an advisory body to the World Heritage Convention, having representatives across the world through national committees it helps safeguard cultural heritage of global, national and local interest.

1.2.   What is HiCLIP?

In 2020, WG4 designed its main project, *Cultural Heritage in Climate Planning* (HiCLIP). It consisted of developing a methodological tool for analysing the inclusion of heritage and cultural resources in climate plans (both adaptation and mitigation) and identifying the current status of policy gaps and best practices for addressing the cultural dimensions of climate change. To do this HiClip looked at 'climate action plans at the national, regional, and municipal levels[1]. The project did not look at plans developed by the cultural sector that address climate concerns (e.g. cultural heritage management plans, etc.), but at the treatment of cultural resources in broader climate plans.

HiCLIP's Long-term Aim: The broader purpose of HiCLIP's analytical tool is to develop a global observatory on the different ways in which culture and heritage are included and treated in climate governance[2]. Over time, a global observatory can:

1) evidence the entry points for culture to collaborate in developing climate action to policymakers, practitioners and others

2) help better orient climate policies and actions to consider their local context and actively involve local communities, and

3) provide a systematic baseline for the comparative analysis across governance levels and scales and identify best practices.

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[1] https://www.ipcc.ch/sr15/chapter/glossary/
[2] Climate governance here refers to the institutional organization and coordination of sectors through adaptation and mitigation policies as a state of the practice

HiCLIP's report: This report presents the first empirical evidence from the application of the HiCLIP methodology to nine climate adaptation plans from eight countries, covering the national, regional and local (municipal/city) scales. The report highlights both the benefits and limitations of the methodology for obtaining insights into how cultural elements cut-across the sectoral organization of climate actions. Interpretation of the data gathered from selected plans is carried out to highlight what current climate strategies and actions are required from policymakers, the cultural sector and planners in order to move towards a sustainable approach to climate action which includes cultural heritage.

1.3. HiCLIP working framework

The HiCLIP pilot project was coordinated by Paloma Guzman and Cathy Daly and undertaken by members of WG4. HiCLIP was developed in three mains stages by CHN's WG4 (fig. 1).
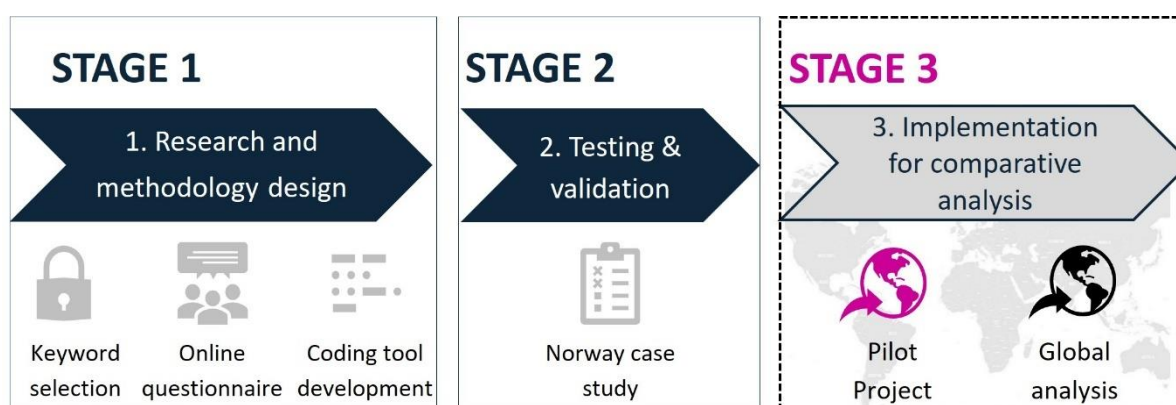
Figure 1. Development stages of the HiCLIP project

1.3.1. Stage 1 - Developing the HiCLIP Methodology

This first stage considered designing an interdisciplinary framework for policy analysis that could bridge climate action and culture in planning. WG4 started developing the HiCLIP concept in 2020 with several separate but related actions:

1. KEYWORDS: A series of English keywords to be used when searching for cultural resources in climate plans were compiled and agreed upon by WG4 members. Equivalents in French and Spanish were subsequently selected by bilingual volunteers.
2. IDENTIFYING PLANS: An online questionnaire was launched to discover the extent of the inclusion of cultural heritage in climate policy around the world and to determine plans for analysis. The questionnaire was sent directly to ICOMOS National Committees' climate change focal points and to Climate Heritage Network members (Fig.2) (Daly et al, forthcoming)
3. CODING TOOL: A methodology was designed to systematically classify and analyse the inclusion of culture and heritage in policy documents (described in detail in section 2).

Figure 2. Number of questionnaire respondents and continental distribution (n=25 or 18%)

Questionnaire

To obtain a global overview of the inclusion of cultural heritage within climate change policy, questionnaire respondents in 105 National Committees (NCs) and 28 Internati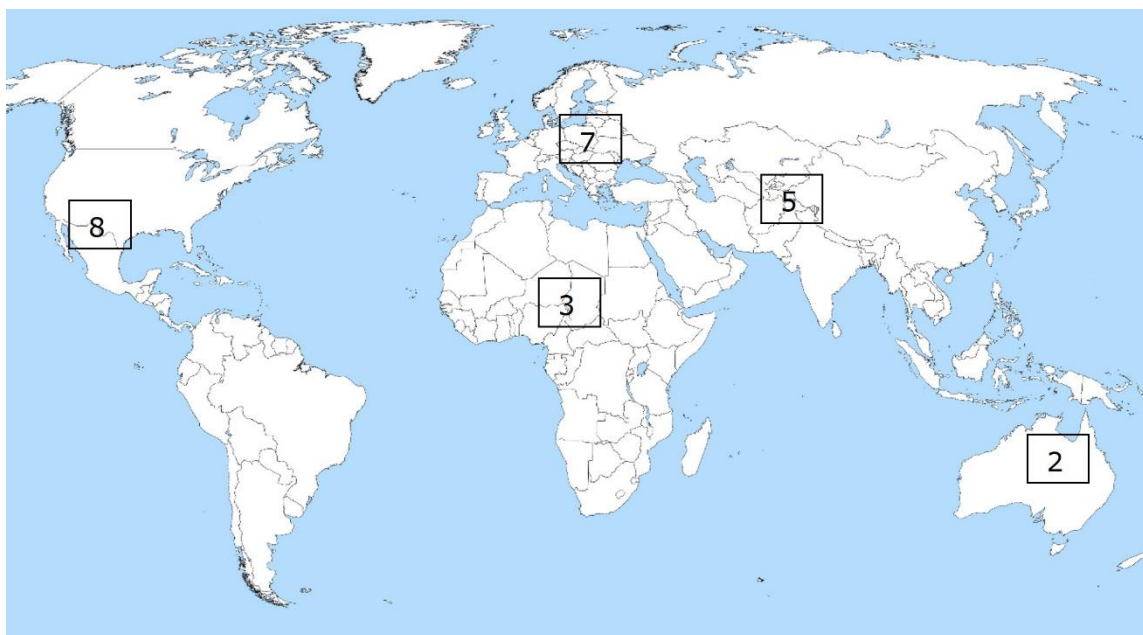onal Scientific Committees (ISCs) of ICOMOS were targeted. The ICOMOS secretariat sent the online Qualtrics questionnaire in English, Spanish and French to all NCs and ISCs and WG4 sent the same online questionnaire to CHN members. A classification of the governance level and degree of the substantiality of the inclusion of cultural resources, and their management, in policies was part of the survey. Respondents were required to choose from a range of eight options, from scoping (e.g. statements of intent) through groundwork activities (such as vulnerability assessment) to full implementation of actions. The response rate was low (18%), and a follow-up question was asked of those who had not completed the survey, asking them to explain why. The majority indicated they lacked the required knowledge of and/or access to information on the inclusion of cultural heritage in climate change policy. Although the results from the questionnaire suggest that the cultural heritage sector is commonly being left out of climate policy, suggestions by respondents of plans where heritage was considered, served subsequently as bases for analysis in the pilot project (stage 3).

1.3.2. Stage 2 – Testing and Validation

In 2021 the coding tool was tested and validated through its application on Norwegian national plans for climate action as a case study[3]. This step helped refine and adapt the coding dimensions and items to develop a flexible tool that could accommodate different governance scales.

1.3.3. Stage 3 – Pilot Project

The pilot project phase was designed to test if the coding tool was sensitive enough to be transferable to broad policy contexts and levels and if the framework was accessible for use by cultural heritage

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[3] Guzman, P. (in progress) Tracking Cultural Heritage in Climate Planning: Norway as case study.

experts with different backgrounds. International volunteer members of WG4 analysed nine climate plans (table 1) by applying the HiCLIP framework as a coding tool for identifying inclusions of cultural heritage through explicit mentions in plans (e.g. heritage, traditional activities, creative industries). Identified instances of keywords (see Appendix 1) served as the basis for a broader analysis linking governance and policy integration presented in this report (see section 3).

Table 1. Plans and Global distribution

|	No	Country	Region	Year	Name	Code	Lang.
List of plans							
National Plans	1	Sant Vincent and the Grenadines	LAC	2019	National Adaptation Plan	SVG	ENG
	2	Colombia		2016	Plan Nacional de Adaptacion al Cambio Climatico	CO	SPA
	3	Cameroon	LAC	2015	Plan National d' Adaptation aux Changements Climatiques du Cameroun	CA	FR
	4	Scotland	EUR	2019	Climate Ready Scotland: climate change adaptation programme 2019-2024	SC	ENG
Regional/Municipal Plans	5	New Zealand	APA	2020	National Climate Change Risk Assessment for New Zealand	NZ	ENG
	6	USA	EUR	2018	Safeguarding California Plan: 2018 Update California's Climate Adaptation Strategy	Cal	ENG
	7	USA	EUR	2019	San Antonio Climate Rradu: A Pathway for Climate Action & Adaptation	Sa	ENG
	8	Australia	AFR	2020	Yarra Climate Emergency Plan	Ya	ENG
	9	Nigeria	AFR	2012	Lagos State Climate Change Policy 2012 - 2014	La	ENG

SECTION 2

HiCLIP METHODOLOGY

UNDERSTANDING CULTURE AND HERITAGE IN CLIMATE PLANNING

To understand the multiple ways that cultural resources are included in climate planning it is crucial to acknowledge the importance of interdisciplinarity in planning and the application of climate governance. The methodological framework for this pilot project borrows from theoretical conceptualisations for governance and policy integration. HiCLIP follows the top-down notion of policymaking consisting of *'governmental steering according to differentiated sectoral responsibility'* (Lafferty & Hovden, 2003). Governmental plans for climate action are policy mechanisms and instruments that also serve as consistent assessment units for the translation of policy goals into implementable actions (Heikkinen et al., 2019; Lesnikowski et al., 2016). The framing of culture and heritage in governance mechanisms is essential to understanding its role in climate planning, across spatial contexts, managerial levels, and in relationship to different governance sectors. The role of culture in systemic problems such as sustainability and climate change is complex as it encompasses diverse value systems, nature-culture interfaces, ideologies and ways of living and organisation (Soini & Birkeland, 2014).

On the other hand, the transversality of culture in policy domains presents methodological challenges for mono-sectoral assessments. HiCLIP addressed this challenge by formulating three conceptual dimensions that establish a common operative ground for 1) culture and heritage; 2) climate mitigation and adaptation; and 3) the policy and planning mechanisms (i.e. the normative elements with the capacity to organise and coordinate institutional and societal action). Articulating the three dimensions (fig. 3) in a coding tool allows for systematic discourse analysis, helpful for identifying how a problem is constructed and how a desired common future *should be* (Katzenstein, 1996, p.21).This refers to how normative visions are achieved by concrete actions, and how progress towards such vision is measured (Boyle, Kay, & Pond, 2001). In this manner, the HiCLIP framework adheres to comprehensive, interdisciplinary approaches for descriptive analysis of the-state-of-practice. Moreover, in combination, the dimensions will enable consideration of a government's specific normative contexts; that is, it recognizes diverse administrative structures and traditions of jurisdictional responsibilities (Berrang-Ford et al., 2019). The following sub-sections describe the rationale for the three conceptual dimensions and their operationalisation into observable variables for the HiCLIP coding tool.

Figure 3. Heritage in Climate Planning analytical framework
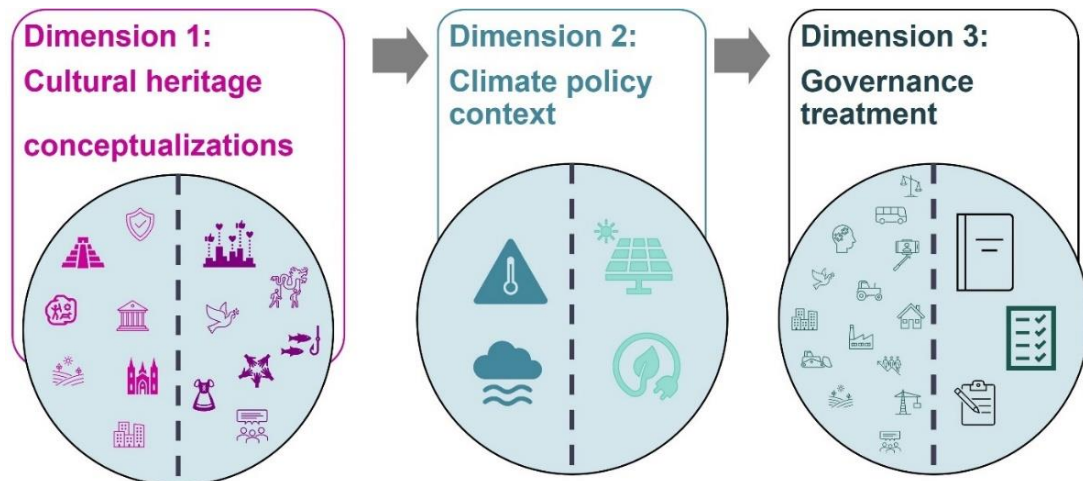
2.1. Dimension 1: Culture and heritage operationalisation in planning practices

Climate plans implemented at different governance levels can reference cultural resources directly or indirectly. *Direct mentions* can be explicit acknowledgements in climate strategies, development of specific actions or inclusion of culture as part of the metrics to assess climate change impacts or monitor the effects of actions. In comparison, *indirect mentions* imply the integration of cultural resources through specific spatial or social contexts. For instance, focus on spatial settings such as city centres with historic areas or climate impacts in forests or other natural environments essential for the continuity of Indigenous and traditional activities. All regions and localities are hosts to diverse cultural elements and heritage categories, closely related to their spatial contexts, which are likely to be indirectly referenced. To identify cultural resources within plans, HiCLIP uses a list of keywords agreed by a panel of heritage experts based on UNESCO's categories of cultural objects, artefacts or material and intangible or immaterial attributes, and *associative values* (UNESCO WHC, 2013).

2.2. Dimension 2: Climate Action Planning

Climate action refers to mitigation and adaptation in the Intergovernmental Panel on Climate Change (IPCC) structure. Therefore, in HiCLIP, this dimension explores synergies between cultural resources or elements and climate adaptation and mitigation actions. Climate *mitigation* mainly relates to goals and activities for the reduction of greenhouse gas (GHG) emissions. These are often characterised by social and technological processes that focus on behavioural change and technical measures (Gillard et al., 2016). Climate *adaptation* is concerned with moderating and avoiding harm or exploiting opportunities that result from climate change and its impacts. Thus, climate plans could identify cultural heritage among buildings vulnerable to natural hazards exacerbated by climate change, or traditional agricultural practices may transform by adapting to climatic change or becoming more environmentally friendly. Indirect synergies can also occur when culture and heritage are recognised for their potential to create resilient communities and societies and foster the societal change needed for effective climate action (ICOMOS, 2019). Understanding the *vulnerability* of systems and resources to climate change is a step before developing adaptation actions. For this reason, HiCLIP distinguishes this action (as a coding item) to reflect on how climate plans problematize cultural resources and incorporate the

expertise and knowledge needed to understand the impacts of climate change. This dimension shed light on the inclusion of culture-related sources of knowledge for understanding interactions between climate adaptation and cultural elements.

2.3.   Dimension 3: Governance and planning mechanisms

This dimension explores the norms and values stated in climate policies and plans, reflecting how solutions that integrate cultural resources are envisioned and operationalised. Dimension 3 borrows its approach from policy integration methods, with the concepts of horizontal and vertical governance having particular relevance (See fig. 4&5). Horizontal governance refers to *'the extent to which a central authority has developed a comprehensive cross-sectoral strategy, in which governance units are aware of substantive coordination and a willingness to prioritise among sectors'* (Lafferty & Hovden, 2003). Thus, horizontal integration for cultural resources refers to the coordination of climate actions among different governmental sectors considering cultural elements. Due to the broad nature of cultural resources and their components, requiring tailored management across different spatial contexts can also be integrated by diverse governmental sectors. For instance, the governmental organization of tourism, agriculture, and urban development could include cultural resources within their planning and policy objectives while not necessarily sharing responsibilities or coordinating with the cultural sector.

Moreover, cultural resources can be integrated as a key sector, minor sector or only acknowledged but not integrated significantly. At the same time, the integration of the public cultural sector refers to coordinated actions for the appropriate management of cultural resources. Climate strategies and activities that directly target cultural resources often fall under the responsibility of a specific government agency for culture.
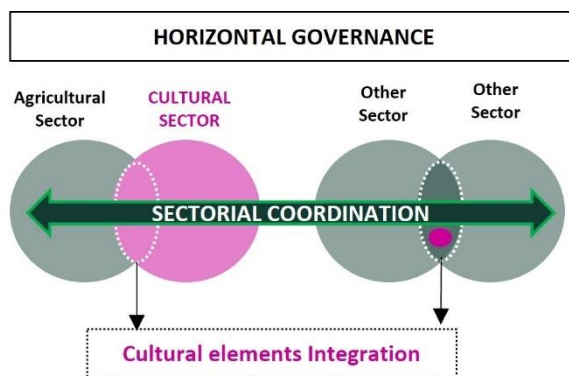
Figure 4. Example of horizontal governance integrations.
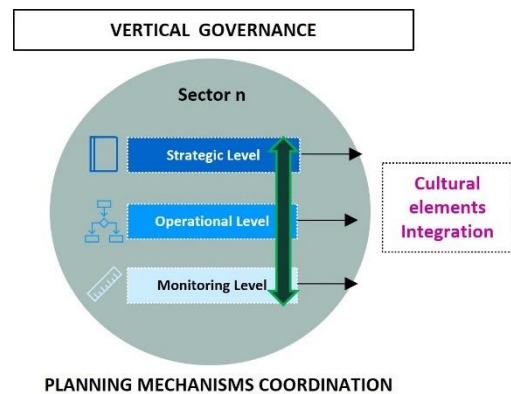
Figure 5. Vertical governance integration.

Vertical governance considers three implementation levels in planning for climate actions. These levels are strategies, operationalization in concrete steps, and monitoring and assessing goal achievements or desired impacts (Boyle et al., 2001). The interrogation of both vertical and horizontal governance helps to clarify a government's climate organization. It reveals how the inclusion of cultural resources by government sectors is organized and the planning level at which these are articulated. Furthermore, by analysing specific actions frequently found across plans on their level of governance integration, it is possible to identify state-of-practice in a systematic, robust and interdisciplinary way.

2.4. Data analysis and data collection

HiCLIP's analytical framework facilitated the development of a coding tool that aims to integrate the three concepts for policy integration of cultural resources (dimensions 1-3 above). A total of eighty-two (82) keywords for cultural resources, including heritage categories, and nine (9) cultural values commonly associated by social groups, served as a pre-coding step for climate actions integrating culture. Finally, the pilot project applied the HiCLIP coding tool to nine climate plans to validate the methodology for comparative purposes.

Dimension 1:
Cultural heritage conceptualizations

1. Type of reference
   1. Direct
   2. Indirect

2. Categories of cultural heritage in climate planning
   1. Material
   2. Immaterial
   3. Both

3. Types of associated values
   1. Symbolic
   2. Historic
   3. Artistic
   4. Aesthetic
   5. Ethnological
   6. Anthropological
   7. Scientific
   8. Social significance
   9. Religious significance
   10. Other

Dimension 2:
Climate policy context

1. Cultural heritage relation to climate planning
   1. Mitigation
   2. Adaptation
   3. Vulnerable to climate change

2. Context of focus for cultural heritage in climate planning
   1. Urban
   2. Rural

Dimension 3:
Governance treatment

1. Governance treatment
   1. Key sector
   2. Minor sector
   3. Mentioned but not in a significant way

2. Horizontal Integration
   1. Independent sector
   2. Mainstreamed
   3. Main governance sectors identified

3. Vertical Integration
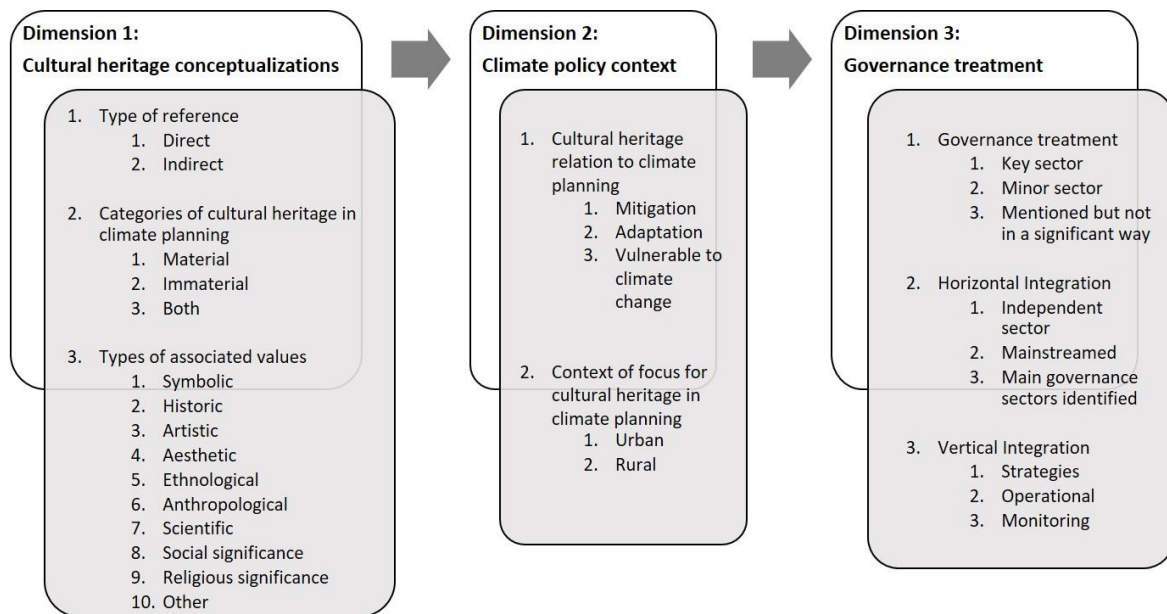   1. Strategies
   2. Operational
   3. Monitoring

Figure 6. Heritage in Climate Planning coding tool

Eighteen international volunteer members of WG4 assisted in the analysis by applying Dimension One (cultural resources) as the coding entry point. Volunteer coders then extracted the Dimension One text references to a database in Microsoft Excel for the post-coding of Dimension Two (climate actions) and Dimension Three (governance). Finally, separate volunteers were assigned to review the plan and the coding, looking for areas where intersections with culture and heritage may have been overlooked by the coding tool. Many of these 'volunteer reviewers' were assigned plans that they were already familiar with. In two cases, they had helped to write, so the level of scrutiny was high. The homogeneity and correct application of the coding tool was revised and corrected by the lead authors, particularly for Dimension 3. This systematic classification of mentions and instances in which cultural resources appear in climate plans texts allows for subsequent statistical analysis of the results, based on summative content analysis of the coding variables shown in figure 6. The primary outcome is identifying specific actions that integrate cultural resources and how these occur across climate plans. The categorization by themes and the level of governance integration of actions provides a systematic 'state-of-practice. The lead researchers carried out this last analytical step.

SECTION 3

PILOT PROJECT RESULTS

THE ROLE OF CULTURAL RESOURCES IN NINE CLIMATE PLANS

3.1. Dimension 1: Culture and heritage operationalisation in planning practices

In the pilot application of the HiCLIP coding tool, 30 keywords (35% of the possible total of 82 proposed) representing cultural resources were identified across the nine plans analysed. The analysis of text mentions (illustrated in Fig.7) showed that most climate plans directly acknowledge different cultural elements (80% of references) while indirect references represent a minority of 20%. The indirect inclusion of cultural resources mainly consists of general statements requiring all government sectors to mainstream climate action and advance national climate goals. These statements implicitly include the cultural sector, although cultural resources are not explicitly mentioned.
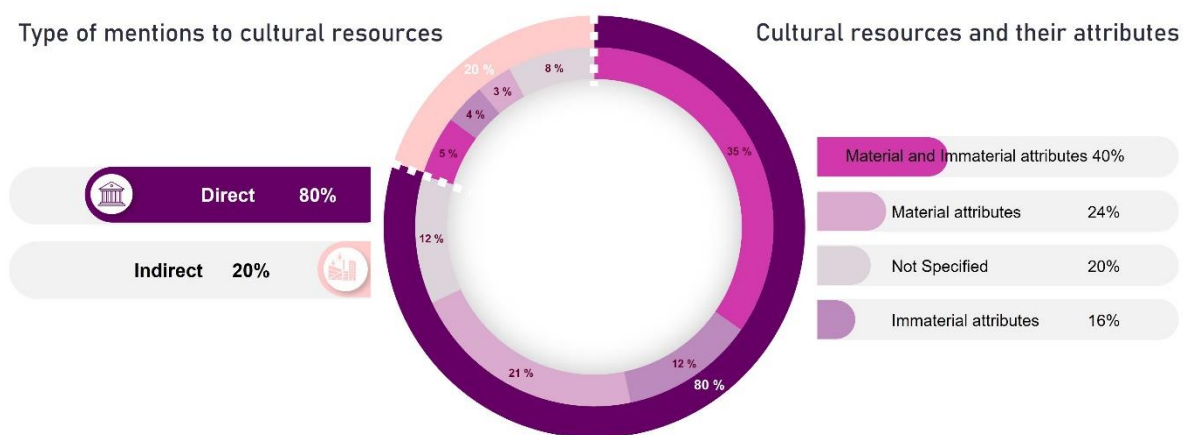

Figure 7. Analysis of cultural resources and their specificities across climate plans.

Climate policy discourses broadly acknowledge the interconnections between material and tangible attributes of cultural resources, particularly of heritage (40% of text references). In the analysis, 20% of the occurrences identified actions that would indirectly impact cultural resources. For instance, action addressed spatial contexts connected to cultural resources such as the urban fabric, agricultural landscapes, etc. However, in the plans analysed, climate strategies and actions tended to prioritize material attributes over intangible ones (24%). Immaterial or intangible attributes recognise traditional activities, traditional and Indigenous knowledge, creativity, and cultural diversity (related keywords are shown in Fig 8).

The keywords identified were categorised into six thematic clouds to understand the broad inclusion of culture and heritage (fig 8). The most prominent theme (43%) represents all keywords starting with the *cultural* + words (e.g. resources, heritage, assets, etc.). The second theme (17%) includes activities related to cultural resources or identified as one (participation, craftmanship, etc.). The third group (12%) consists of all keywords starting with the prefix *historic* + noun (buildings, environments, etc.). However, historic practices also relate to traditional activities (e.g. agricultural practices, fisheries, management of natural resources), so there is some overlap between these themes. Other keywords (11%) represent elements commonly mentioned accompanying and expanding the first theme (cultural + words) and illustrate diverse concepts such as creativity, cultural diversity, traditional knowledge and socio-cultural behaviours. The planning theme (8%) includes processes for organizing land and geographical areas where cultural resources play a role (e.g. cultural heritage management). Protect + words (8%) refer to areas with some level of protection. Among the thematic groups, heritage is mainly presented as generic, historic buildings, historic houses and craftmanship being the only tangible typologies mentioned. Climate actions targeting natural protected areas and conservation often acknowledged intangible cultural attributes (e.g., in plans from California, Colombia, New Zealand). Lastly, the plans analysed in the pilot did not return any references to cultural institutions such as museums, libraries, collections or artworks
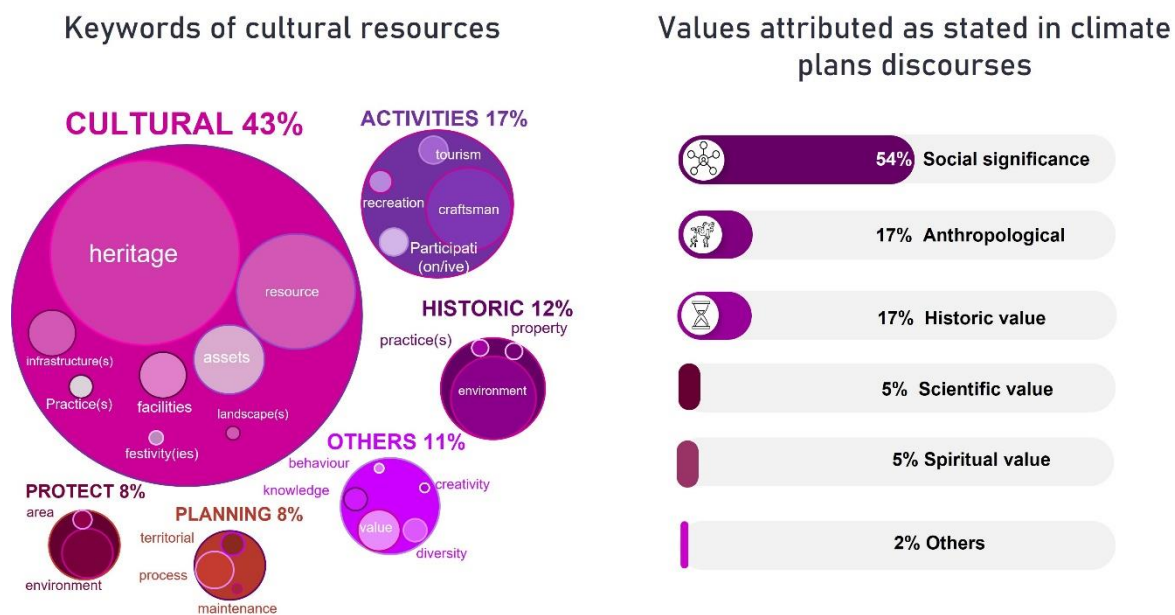

Figure 8. Keyword clouds of most frequently mentioned cultural resources and attributed values as stated in climate plans

In several instances, climate plans do not explicitly mention values associated with cultural resources. However, the cultural experts who volunteered in this project helped identify values following the shortlist in Dimension 1.3 (see fig. 6) and according to climate plan statements and descriptions. The identification of values attributed to cultural resources (represented mainly by cultural heritage) showed that climate plans recognize their *Social significance* (43%) for local communities for spatial contexts that don't have Indigenous people. In related mentions, climate plans acknowledge cultural resources as sources of identity, diversity, local and traditional knowledge. Values classified as *anthropological* refer to the socio-economic value and functions of cultural resources necessary for

society's development. These findings show an expansion of cultural values from the traditional *historical* and *aesthetic values* often associated with cultural heritage towards more socially significant ones. This is explained by the fact that many cultural resources mentioned in climate plans refer to listed or protected cultural resources of national importance and consider those cultural elements relevant to local communities where climate actions are being implemented. The last requires a bottom-up approach and do not tend to fall under the responsibility of the public cultural sector, which traditionally follows a top-down orientation. Yet, the lack of specification of cultural and social values, or the identification of social groups involved with cultural resources, may suggest the need for more expertise in this regard. Public sectors responsible for leading climate action (see sections 3.5 and 3.6) would benefit from integrating the knowledge and methodologies used in cultural resource management.

3.2. Dimension 2: Climate Actions

In this pilot project, climate change adaptation actions frequently mention cultural resources (49% of total text instances). Cultural heritage, both material and intangible attributes, tends to be acknowledged for vulnerabilities to climate change impacts (39%). However, a considerably lower proportion (8%) of cultural resources are aligned to mitigation actions or identified as contributing to climate goals, e.g., broader sustainability or social development (4%). The distribution of cultural resources referenced per climate action is shown in Fig 9.
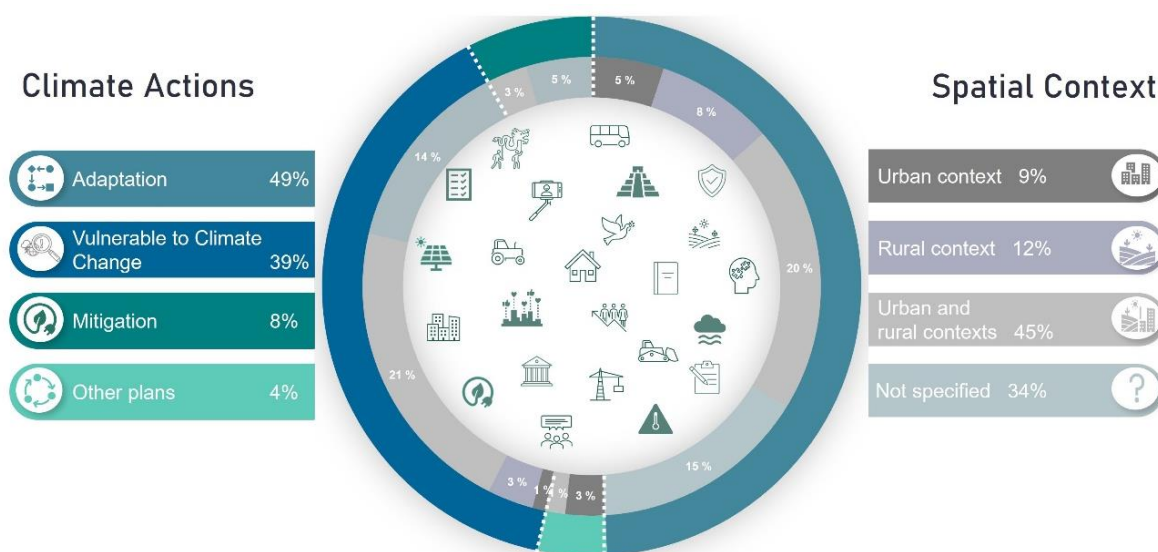

Figure 9. Trends of cultural resource alignments into climate actions and spatial policy contexts.

The analysis of the spatial context in which cultural elements support climate actions showed that these can apply to both urban and rural contexts (45%) or that the spatial contexts in which these play a role are not specified (34%). Mentions of cultural resources in either rural or urban contexts represent 21% of total text references. Although the difference between the two contexts is not significant, considerations of a rural context are slightly more predominant. Specification of both spatial contexts and categories of cultural resources could support the localization of climate action by linking to what is commonly valued and of significance for local communities. Moreover, identifying the nature of local cultural resources within spatial contexts can set the basis for active dialogues with local communities.

3.3.   Dimension 3: Governance & Planning Mechanisms

Figure 10 shows the analysis of dimension three on the governance treatment of cultural resources according to both their horizontal and vertical integration in climate plans. Beyond the public cultural sector, governmental divisions for agriculture, natural resource management, land use planning and central government entities mainly include cultural resources as factors to be considered in the nine plans analysed (72% of found references).
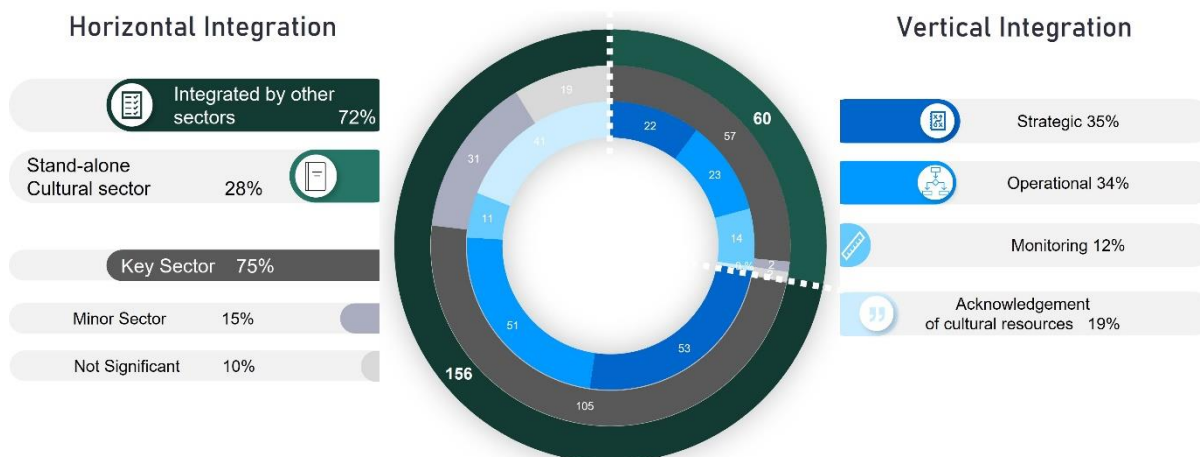

Figure 10. Governance treatment of cultural resources in climate plans.

Cultural resources acknowledged through coordinated action with the public culture sector (as a stand-alone governmental sector) accounted for 28% of plan statements (coding item *independent* sector in figure 6). However, climate plans broadly recognised cultural resources as a *key sector* (75% of found references). Plans emphasize the vulnerability of cultural resources to climate change and the need to protect them, but also that cultural resources also provide a basis for dialogue on climate actions. Therefore, their role in planning is prominent at both the *strategic level* (35% of references) and *operational level* (34% of references). The former refers to how administrations and societies will organise to undertake a particular trajectory to achieve the desired state (normative views). The latter considers taking concrete actions for enacting those strategies. The monitoring level (12%) shows the narrowest consideration of cultural resources. They are used as indicators for assessing and evaluating climate action within a given society, spatial context, or ecological system. Lastly, 20% of references *acknowledge cultural factors* but either consider these as a *minor sector* or in a non-significant way.

3.4.   Specific actions integrating cultural resources across climate plans

This study identified seventeen particular actions related to culture as common themes across plans (Figure 11). Thirteen activities align with adaptation, an additional twelve address cultural resources as vulnerable to climate change, and only four align with the mitigation of CO_2 emissions.
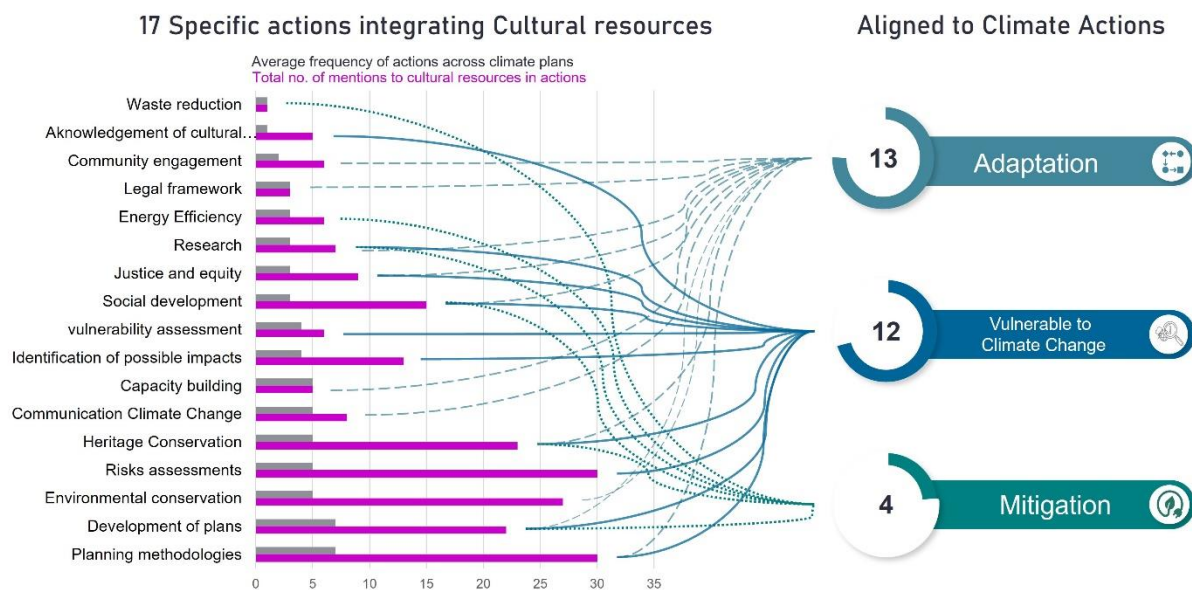
Figure 11. Seventeen thematic actions integrating cultural resources frequently found in climate plans.

The description of seventeen thematic actions below follows from most to less frequent across climate plans and relates to the governance discourse regarding strategic, operational and monitoring levels.

3.5. Description of specific actions integrating cultural resources in climate planning

How to read the headers
Plan codes: Saint Vincent and the Grenadines (SVG), Colombia (CO), Cameroon (CA), Scotland (SC), New Zealand (NZ), California (Cal), San Antonio (Sa), Yarra (Ya), Lagos (La).
Governance levels (vertical governance): ⊞ *Strategic level:* What is to be done, the plans' proposed areas of focus that will lead to desired changes to solve climate challenges (normative character). ⛓*Operational level:* How are strategies implemented, specific actions (measurable). 📏 *Monitoring level:* Measures and assessment tools (e.g. indicators) to continuously track and assess the status of implemented policies and actions.
NoM: Total number of mentions per thematic action

The following thematic actions are presented from most to less frequently found across plans and the highest number of total mentions of keywords per thematic action.

1. Planning methodologies	Plans: 7 (SVG, CO, CA, SC, NZ, Cal, Sa) ⊞ ⛓ NoM: 30
Keywords: Cultural + (assets – facilities – heritage – resource- goods – events – practices - values) – diversity – ecosystem – historic environment – participat (ory/ion) – protection (environment) – tourism – tradition(s/al) + (activities – knowledge - practices). **Associated values:** Anthropological, historical, scientific, social significance, spiritual	

Climate plans adopt existing methodological and conceptual frameworks to manage climate change and organize actions. These are often included in the introductory sections of documents. The most common frameworks are the Socio-ecological Systems (SES) and Ecosystem Services (ES) (in plans from CO). Other plans include the Food Agriculture Organization of the United Nations on climate resilience in agriculture (SVG), the UNFCCC Cancun Adaptation Framework (CA), place-based holistic approaches

(SC) and landscape-based conservation (Cal). The methodological roadmaps in seven of the plans analysed *acknowledge* cultural heritage, Indigenous people's knowledge and socio-cultural services as priority areas or thematic areas (SVG, CO, SC, NZ, Sa). Governments state that cultural resources should be taken into consideration when implementing climate actions. Thus, these policy narratives account for the *strategic level* (CO, CA, NZ, Cal). Occurrences classified as at *operational level* (SVG, CO, SC Cal, Sa) explicitly commend using a methodology to guide the development of management plans, including supportive tools such as risk assessments and/or a portfolio of thematic actions for sectors carrying primary responsibilities in climate actions and/or the provision of guidelines to include cultural resources in planning. No references matched the monitoring level for this thematic action. **Related government sectors** acknowledging cultural resources are local governance, territorial planning bodies, agriculture and environmental conservation.

2. Development of plans	Plans: 7 (SVG, CO, CA, NZ, Cal, Sa, La)	NoM.: 22
Keywords: Craft(man/ship) - cultural + (assets – heritage – resource) –ecosystem –historic environment –Indigenous people –planning + (processes – territorial) –protect (ed/ion) areas/site /environment –tourism – tradition(s/al) + (activities – knowledge/wisdom - practices). **Associated values:** Anthropological, ethnological, scientific, social significance		

Development of plans refers to central governments and agencies responsibilities (e.g. meteorology institutions, emergency response, ministries) to support and guide the development of sectoral or territorial climate plans that consider cultural resources. Related references are mostly normative statements, aiming to delegate responsibilities across governmental sectors, and establish the areas where action and sectoral coordination should occur, thus classifying them at the *strategic level* (SVG, CO, NZ Cal, Sa, La). At the *operational level* (SVG, Cal), the development of plans refers to explicit commitments between specific ministries and sectors to develop sectoral climate plans, localized management plans for natural resources, natural protected areas with considerations of cultural resources and guidelines for determining the appropriate management of cultural sites and objects. Only in one plan (CA) is a measurable heritage indicator defined, i.e. the number of new regulations in a prioritized cultural sector (crafts), classifying the use of cultural resources at the *monitoring level.* **Related government sectors** acknowledging cultural resources include local governance, territorial planning bodies and Indigenous tribal governments, civic protection bodies, natural conservation, tourism.

3. Environmental conservation	Plans: 5 (SVG, CO, CA, SC, Cal)	NoM.: 27
Keywords: Craft (man/ship) -cultural + (assets – heritage – resource) – ecosystem – historic environment- Indigenous people –planning + (processes –territorial) –protected areas/site -protection (environment) –tourism –tradition(s/al) + (activities – knowledge/wisdom - practices). **Associated values:** Anthropological, ethnological, historical, scientific, social significance, spiritual, symbolic		

Climate plans commonly highlight implemented environmental/ecological conservation policies and measures as supporting actions for their agendas. Climate discourses, for instance, *acknowledge cultural resources* (SVG) for relating environmental protection and traditional agricultural practices. The linkages between nature and society through cultural values is one reason for referencing such policy tools at the *strategic level* (CO, CA, SC, Cal). The *operational level* (SC, Cal) accounts for ongoing collaborative programs and financial schemes to reduce natural disasters supporting local land managers, forestry services, and communities linked to traditional cultural practices. Programs and funds also target restoring ownership to Indigenous communities, traditional knowledge transfer to

environmental institutions and maximizing opportunities for all local populations to access nature for recreation purposes (Cal). Only one plan (SC) proposes something at the *monitoring level,* i.e. a set of metrics related to cultural landscapes (public perceptions and values of coastal sites, visits to forests and woodlands and the ecological services for community health and quality of life). **Related government sectors** acknowledging cultural resources include environmental (ecological) conservation, local governance, agriculture, and tourism.

4. Risk assessments	Plans: 5 (CO, CA, SC, NZ, Cal)	NoM.: 29
Keywords: Craft (man/ship) -cultural (assets –heritage -landscapes –resource - values) – ecosystem – historic environment- planning processes –tradition(s/al -activities – practices). **Associated values:** Anthropological, historical, scientific, social significance, spiritual			

Plans often include a process to identify potential hazards resulting from climate change and analyse consequences and impacts if a threat occurs. Assessment methods and guidance acknowledged intangible and tangible cultural resources, including Indigenous communities (CO, NZ). National plans, in particular, stressed at the *strategic level* (SC, NZ) the need to understand the impacts on material historic assets and effects on the interconnectedness of intangible and natural heritage that are central to ways of living for Indigenous groups (NZ). The *operational level* (CO, CA, SC, NZ, Cal) covers the development of databases or documentation methods to identify cultural resources affected by climate change and assess the possible risks these may face. Vulnerability assessments often follow these steps if negative impacts are identified. Different sectors can collaborate with cultural entities (SC, Cal) to elaborate risks assessments, or a centralized entity may undertake these and include some consideration of cultural heritage as an impacted sector (CO, Cal). No occurrences matched the monitoring level for this thematic action. **Related government sectors** mentioning cultural resources include local governance, environmental (ecological) conservation, agriculture, building and construction, healthcare, demographic-population related sectors and cultural heritage management.

5. Heritage conservation	Plans: 5 (CA, SC, NZ, Cal, La)	NoM.: 23
Keywords: Craft (man/ship) -cultural (assets – heritage – resource) – ecosystem – historic environment-maintenance – protect ed areas/site -protection (environment) –tourism –tradition (s/al -activities –practices). **Associated values:** Anthropological -historic- scientific- social significance			

Plans recognize the conservation of traditional practices and the built environment, particularly material heritage, as a means for strengthening social resilience (all five plans). At the *strategic level* (SC, NZ), the good maintenance of heritage assets is among the desired spatial qualities for society. It is also a governance sector with regulations with possibilities to support adaptation and mitigation objectives. At the operational level (CA, SC, Cal), actions include registering traditional natural products at risk of climate change and inventories of activities considered intangible heritage (CA). Other efforts involve research and testing adaptation and mitigation solutions in historic buildings as pilot projects and case studies (SC) and broadening interests in natural and cultural heritage conservation by fostering participation in coastal communities in conservation actions (Cal). Finally, heritage conservation and improving the historic built environment support *monitoring* systems for the resilience of local communities (CA, SC). **Related government sectors** acknowledging cultural resources include local governance, cultural heritage management, environmental (ecological) conservation, agriculture, healthcare, tourism and transport and communications.

6. Communication of Climate Change	Plans: 5 (SVG, CA, SC, Cal, Sa)	🖾 🖧	NoM.: 8

Keywords: Cultural (infrastructure) – diversity – historic environment– tradition (s/al -practices)-behaviour (social)
Associated values: Anthropological -historical -social significance – scientific

Strategies for communicating the impacts of climate change in territories take advantage of cultural resources as entry points to engage with local communities. Plans *acknowledge* traditional knowledge and climate impacts on historic assets (SVG, CA, SC). *Strategies* to inform, educate and mobilize the local population create programs and campaigns that include specific cultural resources and practices (CA, Sa). For instance, traditional forms for dissemination such as markets, festivals, religious events, etc. and key actors needed to transmit information, e.g. bards and preachers (CA). At the operational level, concrete programs and projects involve the private sector as residents and businesses create a more resilient built environment through housing and infrastructure upgrades (Sa). Other activities include creating networks for knowledge sharing and exchanges to improve the knowledge base of custodians/owners of historic assets (SC) and creating inclusive spaces for marginalized communities (Cal). No references matched the monitoring level for this thematic action. **Related government sectors** considering cultural resources include local governance, cultural heritage management, and agriculture.

7. Capacity building	Plans: 5 (SVG, CA, Cal, Sa, La)	🖾 🖧	NoM.: 5

Keywords: Craft (man/ship) -cultural (heritage – resource) – planning (territorial) –tradition (s/al -activities –practices).
Associated values: Social significance- scientific- anthropological.

At the *strategic level*, capacity building targets the economic interrelation between natural resources and agricultural production systems (SVG) and tourism, craftsmanship and climate resilience (CA). Other innovative strategies include improving healthcare capacities by incorporating traditional/Indigenous knowledge in diagnosing and managing climate-induced diseases (La). At the *operational level,* developing climate heritage sectoral plans requires building adaptive capacities (Sa) and developing staff training in other sectors to deal with cultural resources (Cal) properly. No references matched the monitoring level for this thematic action. **Related government sectors** acknowledging cultural resources include local governance, cultural heritage management, tourism, healthcare and agriculture.

8. Identification of possible climate impacts	Plans: 5 (CO, SC, NZ, Cal, Sa)	🖾 🖧 ✎	NoM.: 13

Keywords: Cultural (facilities -infrastructure -heritage – resource -value) –tradition(s/al -activities –practices). **Associated values:** Anthropological -historical **-**social significance.

The methodologies that guide plans recommend developing comprehensive identification processes for climate change and its impacts on ecological and social systems. Climate plans acknowledge the need to consider cultural resources as part of a system (CO, SC, NZ, Cal) and local specifications highlight communities' relationships with outdoor life. For instance, climate *strategies* recognize the interconnection of sense of place, identity, and social cohesion. Such activities provide health benefits. Conversely, changes in natural environments can negatively impact traditional activities, Indigenous groups and traditional agricultural practices, fishing, etc. (Cal, NZ). To address these issues, the *operational level* of plans focuses on an inventory of cultural resources in different spatial contexts, e.g. coastal areas, forests etc. (NZ, Cal), interdisciplinary sustainability programs and inter-sectoral

collaborations (Sa). No references matched the monitoring level for this thematic action. **Related government sectors** acknowledging cultural resources include business and development, local governance, cultural heritage management, transport and communications, healthcare and agriculture, water management.

9. Vulnerability assessments	Plans: 4 (CA, SC, Cal, Sa)	NoM.: 6
Keywords: Craftsman(ship) -cultural (heritage – resource). Associated values: Historical -social significance.		

The main characteristics of this thematic area are the identification of specific climate threats affecting a given territory and the need to assess the vulnerability of local cultural resources. The difference with action No. 8 (on the identification of impacts) is that these assessments consider cultural resources managed by a public entity. For instance, monuments and built structures protected for being of national/regional/local interest. Therefore, the public culture sector is included to guide all or part of related activities to carry out such assessments. Vulnerability assessments with these characteristics are acknowledged in two plans (CA, SC). One extends these assessments to identify vulnerable populations due to cultural diversity requiring assistance to adapt and retrofit buildings (Sa). *Strategies* for building adaptation address risks from flooding, extreme precipitation (Sa) and sea-level rise (SC, Cal). At the *operational level*, one plan addresses the need to assess the vulnerability of specific categories of cultural heritage (archaeological and built heritage) (Cal). However, references classified at the *monitoring level* remained generic. These lacks either the specification of climatic risks or the category of cultural sectors affected (SC, CA), e.g. quantification of heritage assets impacted by climate change (SC); the number of campaigns or operations promoting conservation techniques (for crafts) depending on the sectors, hazards or climatic risks involved (CA). **Related government sectors** acknowledging cultural resources are local governance and cultural heritage management

10. Social development	Plans: 3 (CA, Cal, Sa)	NoM.: 15
Keywords: Craftman(ship) -cultural (facilities –infrastructure -resource) -planning (processes) -tradition(s/al -activities – practices). Associated values: Anthropological -historical -social significance.		

Few plans maximize co-benefits for social development through integrative approaches that acknowledge a role for cultural resources. Identified *strategies* include benefits for local communities where traditional activities are based in craftmanship by collaborative actions with the tourism sector for dissemination and enhancing peoples protection from climate hazards. In addition, the agricultural industry ensures the supply of raw materials for the craft sector (CA). Another strategy targets the conservation of material heritage and its benefits in material reuse and the circularity of the built environment (Sa). At *the operational level*, actions cover the development of access to craftsmanship through touristic routes (CA), retrofitting existing facilities and underutilized spaces (including heritage sites) aligned with the community's vision for areas for intervention (Sa). Lastly, *the monitoring level* was only found in one plan (CA) accounting for operations needed to develop eco-tourism sites, e.g. the number of rehabilitation and built sites for craft villages. **Related government sectors** acknowledging cultural resources include agriculture, local governance, cultural heritage management, tourism, healthcare, waste management.

11. Justice and equity	Plans: 3 (Cal, Sa, Ya)		NoM.: 9
Keywords: Cultural divers(e/ity) -Indigenous people -environment (protection) -participat (ion/ory) -tradition(s/al -activities –practices). **Associated values:** Anthropological -ethnological -historical -social significance.			

Plans *acknowledge* that frontline communities facing the worse impacts of climate change are often systematically marginalized, such as Indigenous groups, cultural minority groups, people of colour etc. (Cal, Sa, Ya). Plans' statements at the *strategic level* include partnerships with vulnerable groups to increase equity and just coverage of policies and financial schemes for climate actions (Cal). The operational level included collaborative outreach by water management entities with Indigenous people and exploring mental health impacts of climate change associated with extreme events in culturally and systemically disadvantaged communities (Cal). Additionally, screening tools that assess climate strategies by local committees aim at increasing equity by broadening the identification of benefits and unintended consequences (Sa). No references matching the monitoring level were found for this thematic action. **Related government sectors** acknowledging cultural resources are local governance, healthcare, and water management.

12. Research	Plans: 3 (SC, NZ, Cal)		NoM.: 7
Keywords: Cultural heritage - historic environment - cultural resource - behaviour (social) – ecosystem. **Associated values:** Anthropological -historical -social significance.			

Climate plans acknowledge the limited existence of research and scientific knowledge to understand cultural heritage sites' sensitivity and traditional practices. *Strategic* actions include the development of research on the relationship between social vulnerabilities from climate change and the impacts on cultural heritage. For instance, knowledge is requested on the effects on the cultural, spiritual and economic wellbeing of Indigenous people, the role of heritage in social cohesion and models to value loss and damage to cultural heritage and ecosystem services (NZ, Cal). At the *operational level*, actions include commissions for the cultural sector and related institutional entities to create the knowledge needed to improve the resilience of the historic environment. In addition, research will inform new guidance and updates to existing mechanisms, including dissemination through training and events (SC). No references matched the monitoring level for this thematic action. **Related government sectors** mentioning cultural resources include local governance, cultural heritage management, environmental conservation, research and development, and demography.

13. Energy Efficiency	Plans: 3 (SC, Sa, Ya)		NoM.: 6
Keywords: Cultural heritage - Historical environment. **Associated values:** Historical -social significance.			

Across plans, efforts for reducing energy use focus on retrofitting existing building stock, including historic buildings and structures. Plans' *strategies* address obligations for conserving, retrofitting and making historic buildings more energy-efficient by creating specific guidance and impact assessments (SC, Ya). Actions (*operational level*) mainly facilitate decision-making for historic house owners through education and training (SC) and waiving planning application fees for solar installations in heritage areas (Ya). For instance, some of the guidance covers the use of micro-renewables in gardens and designed landscapes and windows (SC), adopting a Zero Net Energy (ZNE) code for all new buildings and substantial rehabilitation of historic buildings (Sa). No references matched the monitoring level for this thematic action. **Related government sectors** acknowledging cultural resources include local governance, cultural heritage management, building and construction.

14. Legal framework	Plans: 3 (CA, Cal, Sa)	NoM.: 3

Keywords: Craftman(ship) -cultural (heritage -resource) . **Associated values:** Social significance.

Legal frameworks refer to the set of documents that include regulations, laws and contracts for the protection, development and conservation of cultural resources and how these can conflict or complement climate planning. For instance, the strategic level establishes the requirement that a climate heritage plan should focus on providing input to climate policies affecting tangible and intangible heritage resources (Sa). At the *operational level*, climate actions consult and find common ground with Indigenous people to protect Indigenous sites during drought, wildfires, and floods by including the Indigenous people law system (Ca). A supporting indicator for climate adaptation is a national policy document for artisans at the *monitoring level* according to relevant trades and organizations (CA). **Related government sectors** acknowledging cultural resources include local governance and cultural heritage management.

15. Community engagement	Plans: 2 (Cal, Sa, Ya)	NoM.: 6

Keywords: Cultural (assets -heritage) -maintenance -recreation(al -activities)- tradition(s/al -practices -activities).
Associated values: Anthropological -ethnological -social significance.

Adaptation strategies consider that engaging local communities and Indigenous cultures will facilitate the conservation and management of the natural environment and protected areas (Cal, Sa, Ya). For instance, concrete actions (*operational level)* cover the inclusion of local cultural assets such as stories, public art, cultural activities, artists, and traditions into park design cultural elements (Sa), tracking impacts of climate change with help from Indigenous communities, and engaging the recreation industry and stakeholders in outdoor restoration, stewardship, education and outreach efforts (Cal). No references matched the monitoring level for this thematic action. **Related government sectors** acknowledging cultural resources include local governments, environmental (ecological) conservation and natural resource management.

16. Acknowledgement of cultural values	Plans: 2 (CO, NZ)	NoM.: 5

Keywords: Cultural (assets) -ecosystems -tradition(s/al -practices -activities). **Associated values:** Aesthetic -spiritual -social significance.

Cultural values of natural resources are increasingly recognized (CO, NZ). For example, the concept of forests as socio-ecological systems identifies the linkages between biodiversity and Indigenous communities' spiritual and religious values (CO). However, few climate plans align the cosmological views and knowledge of Indigenous groups and traditional communities as the primary overarching *strategy* (NZ). **Related government sectors** acknowledging cultural resources include local governments and environmental (ecological) conservation.

17. Waste reduction	Plans: 1 (Sa)	NoM.: 1

Keywords: Cultural (heritage) **Associated values:** Historical

One plan (Sa) addresses pollutants and CO_2 emissions reduction at the strategic level by fostering low-waste construction projects through education, incentives and partnerships, and zero-landfill waste

practices for all construction projects. Strategies include broadening conservation practices and adapting existing building stock to new uses and functions. **Related government sectors** acknowledging cultural resources include local governance, waste management and cultural heritage management.

3.6. Overview of inclusion of cultural resources in climate plans according to themes of Vulnerability, Adaptation and Mitigation

The following tables provide an overview of climate actions, including cultural resources as *key sectors*. The tables show the classification of 17 specific activities as considered by other government sectors (top of tables) and those under the responsibility of the cultural sector. Tables 2-4 also include a quantification of total references and the frequency of actions in plans (IP).

Table 2. Overview of inclusion of cultural resources as Vulnerable to Climate Change

Cultural resources in Climate Adaptation — Key Sector overview

Culture integrated by sectors	Ref	Actions/ Governance level	12	IP	Strategies	IP	Operations	IP	Monitoring	IP	Aknw.	IP
Agriculture	2	Aknowledgment of cultural values	2	1	0	0	0		0	0	2	1
Business and development	1	Capacity building	2	2	1	1	1	1	0	0	0	0
Environmental Conservation	29	Communication Climate Change	2	2	1	1	1	1	0	0	0	0
Local government	44	Community engagement	4	2	2	1	2	1	0	0	0	0
Healthcare	1	Heritage conservation	3	2	0	0	1	1	2	1	0	0
Research	1	Development of plans	6	3	3	3	3	1	0	0	0	0
Tourism	3	Environmental conservation	19	3	6	3	5	2	8	1	0	0
		Identification of possible impacts on system elements	1	1	0	0	1	1	0	0	0	0
Water management	1	Justice and equity	2	2	0	0	2	2	0	0	0	0
Culture	1	Planning methodologies	8	6	3	3	1	1	0	0	4	2
		Research	1	1	0	0	1	1	0	0	0	0
		Social development	3	2	1	1	2	2	0	0	0	0
TOTAL	83	Total References / In Plans (IP)	53	10	17	8	20	4	10	1	6	2

(left rows labelled "by other sectors")

Culture in collaboration with sectors	Ref	Actions (all/total references)	8	IP	Strategies	IP	Operations	IP	Monitoring	IP	Aknw.	IP
Demography	1	Capacity building	1	1	1	1	0	0	0	0	0	0
Local government	8	Heritage conservation	7	2	0	0	5	2	1	1	1	1
Management	1	Development of plans	5	4	2	2	2	1	1	1	0	0
Natural resource management	2	Environmental conservation	1	1	1	1	0	0	0	0	0	0
		Identification of possible impacts on system elements	1	1	1	1	0	0	0	0	0	0
Planning	10	Legal framework	2	2	1	1	1	1	0	0	0	0
Tourism	1	Research	1	1	0	0	1	1	0	0	0	0
		Social development	2	1	0	0	0	0	2	1	0	0
TOTAL	23	Total References / In Plans (IP)	20	5	6	3	9	2	4	2	1	1

(left rows labelled "by the Culture sector")

Table 3. Overview of inclusion of cultural resources in Climate Adaptation

Cultural resources in Climate Adaptation — Key Sector overview

by other sectors

Culture integrated by sectors	Ref	Actions/ Governance level	12	IP	Strategies	IP	Operations	IP	Monitoring	IP	Aknw.	IP
Agriculture	2	Aknowledgment of cultural values	2	1	0	0	0		0	0	2	1
Business and development	1	Capacity building	2	2	1	1	1	1	0	0	0	0
Environmental Conservation	29	Communication Climate Change	2	2	1	1	1	1	0	0	0	0
Local government	44	Community engagement	4	2	2	1	2	1	0	0	0	0
Healthcare	1	Heritage conservation	3	2	0	0	1	1	2	1	0	0
Research	1	Development of plans	6	3	3	3	3	1	0	0	0	0
Tourism	3	Environmental conservation	19	3	6	3	5	2	8	1	0	0
		Identification of possible impacts on system elements	1	1	0	0	1	1	0	0	0	0
Water management	1	Justice and equity	2	2	0	0	2	2	0	0	0	0
Culture	1	Planning methodologies	8	6	3	3	1	1	0	0	4	2
		Research	1	1	0	0	1	1	0	0	0	0
		Social development	3	2	1	1	2	2	0	0	0	0
TOTAL	83	Total References / In Plans (IP)	53	10	17	8	20	4	10	1	6	2

by the Culture sector

Culture in collaboration with sectors	Ref	Actions (all/total references)	8	IP	Strategies	IP	Operations	IP	Monitoring	IP	Aknw.	IP
Demography	1	Capacity building	1	1	1	1	0	0	0	0	0	0
Local government	8	Heritage conservation	7	2	0	0	5	2	1	1	1	1
Management	1	Development of plans	5	4	2	2	2	1	1	1	0	0
Natural resource management	2	Environmental conservation	1	1	1	1	0	0	0	0	0	0
Planning	10	Identification of possible impacts on system elements	1	1	1	1	0	0	0	0	0	0
Tourism	1	Legal framework	2	2	1	1	1	1	0	0	0	0
		Research	1	1	0	0	1	1	0	0	0	0
		Social development	2	1	0	0	0	0	2	1	0	0
TOTAL	23	Total References / In Plans (IP)	20	5	6	3	9	2	4	2	1	1

Table 4. Overview of inclusion of cultural resources in Climate Mitigation

Cultural resources in Climate Mitigation — Key Sector overview

by other sectors

Culture integrated by sectors	Ref	Actions (all/total references)	3	IP	Strategies	IP	Operations	IP	Monitoring	IP	Aknw.	IP
Building construction	1	Energy efficiency	3	2	3	2	1	1	0	0	0	0
Local government	3	Social development	2	1	2	1	0	0	0	0	0	0
Waste managment	2	Waste reduction in construction projects	1	1	1	1	0	0	0	0	0	0
TOTAL	6	Total References / In Plans (IP)	6	4	6	4	1	1	0	0	0	0

by the Culture sector

Culture in collaboration with sectors	Ref	Actions (all/total references)	2	IP	Strategies	IP	Operations	IP	Monitoring	IP	Aknw.	IP
Local government	2	Energy efficiency	2	1	0	0	2	1	0	0	0	0
Planning	1	Research	1	1	1	1	0	0	0	0	0	0
TOTAL	3	Total References / In Plans (IP)	3	2	1	1	2	1	0	0	0	0

CONCLUSIONS

The Cultural Heritage in Climate Planning (HiCLIP) project was developed in response to an identified need for a greater understanding of the inclusion of heritage and cultural resources in climate plans as part of the mobilization of the Arts and Heritage sector by the Climate Heritage Network. Working Group 4 of the CHN developed the framework and applied it to nine climate plans from different regions and governance scales. The lessons learned from the application of HiCLIP cover three aspects, 1) The benefits and limitations of HiCLIP analytical tool, 2) HiCLIP pilot project results, and 3) Next steps for HiCLIP and the Climate Heritage Network.

1. HiCLIP pilot project results

HiCLIP focuses explicitly on integrating cultural resources in broader climate plans. Thus, the pilot did not examine climate action plans developed by the cultural sector (e.g. sectoral adaptation plans, cultural heritage management plans, etc.). Consequently, the nine plans analysed in this pilot project represents a limited sample for providing a global 'state-of-practice. However, it does allow the identification of trends and themes. For example, the analysis found that the cultural sector represented by museums, arts, creative industries etc., is rarely included. However, cultural resources, particularly heritage, are integrated mainly by broader governmental sectors leading climate action across national and local contexts. Such integration consists primarily of acknowledging them in normative discourses, that is, the formulation of "how things ought to be" based on recognising that cultural resources represent the materialization of human values and belief systems. The study identified seventeen thematic actions in which cultural resources play a role according to the plans analysed. Although concrete, measurable activities aimed at cultural resources may not be fully implemented yet, the themes demonstrate the transversality of culture. Therefore, these thematic areas can be utilised as a starting point to stimulate collaborations among government sectors and engage policymakers and culture and heritage practitioners in developing coherent and meaningful climate actions. Moreover, identifying which and how broader government actors conceptualize cultural resources can help the culture sector mainstream climate action and explore creative and relevant ways to impact society—for example, questioning the role of the public cultural sector and industries in unsustainable consumption patterns or widening the identification of cultural values in different contexts.

2. The benefits and limitations of the HiCLIP analytical tool

The pilot study results presented here demonstrated that the HiCLIP tool could robustly interrogate the conceptualisation of culture and heritage in climate plans, the climate policy contexts where it occurs, and the governance treatment received. The HiCLIP tool aids this process by demonstrating to policymakers and cultural professionals the possible intersections and existing synergies of cultural resources with various sectors and governance levels. Systematic identification of cultural resources, their classification into climate actions, and governance implementation level creates a standardised conceptual approach that will clarify the mainstreaming of culture in climate planning. Moreover, applying the tool in specific contexts can advance national, regional, and local policy assessment practices beyond international comparative studies. HiCLIPs highlights how concrete practices combine global and local climate goals and whether the implementation of climate action is coherent across sectors and governance mechanisms. Such benefits help HiCLIP to identify best practices based on the

governance practices that produce them. However, limitations for applying the HiCLIP methodology can result from different understandings of cultural resources and other biases that may influence a coder's expectations of the cultural sector's role in planning. Therefore, capacity-building is required to reduce biases and expand the practical application of HiCLIP by coders with different backgrounds. Although climate plans tailored for the cultural sector were not part of the scope of the HiCLIP project, their design and implementation is an integral part of the climate-heritage policy landscape and merits a separate analysis.

3. Next steps for HiCLIP and the Climate Heritage Network

The broader purpose of HiCLIP's analytical tool is to develop a methodological basis for providing relevant information that leads culture and planning experts to take action. This work sets the parameters for building a global observatory on the different ways in which culture and heritage resources are included and treated in climate governance. In addition, the cultural heritage sector needs to be vociferous in making a case for culture and heritage as tools for orienting climate policies and actions to local contexts and actively involving local communities. The next phase of development of the HiCLIP methodology will be to expand its application globally and at scale. Ultimately HiCLIP will be made available as an open-access tool for anyone interested in understanding the intersection of culture and heritage in climate plans at any level of governance. To utilise the data produced by these searches, CHN will need to ensure that those implementing the tool have been trained in its application. Future development of the HiCLIP methodology, therefore, includes the following priorities:

a) Extending the analysis to cover a more significant number and diversity of plans,
b) Revision of keywords to make the HiCLIP's application and translation to other languages less cumbersome and more efficient.
c) Developing training materials to ensure HiCLIP's correct transferability and replicability.

Considering that actions often get stacked within political systems and structures, we hope that the data extracted using HiCLIP will support the cultural sector to complement the mainstreaming of climate adaptation and mitigation in their governance mechanisms. In particular, the implementation of concrete activities and monitoring progress, the synergies achievable with other sectors, and the co-benefits demonstrated to policymakers.

Lastly, this project recognises the expertise and knowledge embedded in cultural resources. It encourages custodians, practitioners and experts to develop new societal patterns and significant climate actions based on values that matter to communities.

REFERENCES

Adger, N. W., Barnett, J. Brown, K. Marshall, N. & O'Brien, K. (2013) Cultural dimensions of climate change impacts and adaptation. *Nature Climate Change* Vol. 3, pp. 112–117

Berrang-Ford, L., Biesbroek, R., Ford, J. D., Lesnikowski, A., Tanabe, A., Wang, F. M., … Heymann, S. J. (2019). Tracking global climate change adaptation among governments. Nature Climate Change, Vol. 9, pp. 440–449. https://doi.org/10.1038/s41558-019-0490-0

Boyle, M., Kay, J., & Pond, B. (2001). Monitoring in support of policy: an adaptive ecosystem approach. Encyclopedia of Global Environmental Change, 4(14), 116–137.

Daly, C., Fatorić, S., Carmichael, B., Pittungnapoo, W., Adetunji, O., Hollesen, J., Nakhaei, M., Herrera Diaz, A. (forthcoming) Climate Change Adaptation Policy & Planning for Cultural Heritage in Low- & Middle-Income Countries, *Antiquity*. Special Issue

FAO (2018 d). Lecture Notes of the Massive Open Online Course National Adaptation Plans: Building Climate Resilience in Agriculture. Module 6: Communications, monitoring and evaluation. Retrieved from http://adaptation-undp.org/sites/default/files/uploaded-images/module_4_version2.pdf

Gillard, R., Gouldson, A., Paavola, J., & Van Alstine, J. (2016). Transformational responses to climate change: beyond a systems perspective of social change in mitigation and adaptation. Wiley Interdisciplinary Reviews: Climate Change, 7(2), 251–265. https://doi.org/10.1002/wcc.384

Heikkinen, M., Ylä-Anttila, T., & Juhola, S. (2019). Incremental, reformistic or transformational: what kind of change do C40 cities advocate to deal with climate change? Journal of Environmental Policy and Planning, 21(1), 90–103. https://doi.org/10.1080/1523908X.2018.1473151

ICOMOS. (2019). The Future of Our Pasts: Engaging cultural heritage in climate action. Paris.

Lafferty, W. M., & Hovden, E. (2003). Environmental policy integration: Towards an analytical framework. Environmental Politics, 12(3), 1–22. https://doi.org/10.1080/09644010412331308254

Lesnikowski, A., Ford, J., Biesbroek, R., Berrang-Ford, L., & Heymann, S. J. (2016). National-level progress on adaptation. Nature Climate Change, 6(3), 261–264. https://doi.org/10.1038/nclimate2863

Soini, K., & Birkeland, I. (2014). Exploring the scientific discourse on cultural sustainability. Geoforum, 51, 213–223. https://doi.org/10.1016/j.geoforum.2013.12.001

UNESCO WHC. (2013). Managing cultural world heritage. Paris: UNESCO.

PLANS ANALYSED

By number as shown in table 1.

1. Government of St. Vincent and the Grenedines. (2019). National Adaptation Plan for St. Vincent and the Grenedines.
https://www4.unfccc.int/sites/NAPC/Documents/Parties/FINAL%20NAP_SVG_Approved.pdf
2. Departamento Nacional de Planeacion Colombia. (2012). ABC: Adaptacion bases conceptuales. Marco Conceptual y linemaoientos del Plan Nacional de Adaptacion al Cambio Climatico (PNACC).
https://www.minambiente.gov.co/images/cambioclimatico/pdf/Plan_nacional_de_adaptacion/1._Plan_Nacional_de_Adaptaci%C3%B3n_al_Cambio_Clim%C3%A1tico.pdf
3. Ministere De L'environnement, De Laprotection De La Nature Et Du Developpement Durable Republique du Cameroun. (2015). Le Plan National d'Adaptation aux Changements Climatiques du Cameroun (PNACC). http://extwprlegs1.fao.org/docs/pdf/Cmr192040.pdf
4. The Scottish Government. (2019). Climate Ready Scotland: climate change adaptation programme 2019-2024. https://www.gov.scot/publications/climate-ready-scotland-second-scottish-climate-change-adaptation-programme-2019-2024/documents/
5. Ministry for the Environment. 2020. National Climate Change Risk Assessment for Aotearoa New Zealand: Main report – Arotakenga Tūraru mō te Huringa Āhuarangi o Āotearoa: Pūrongo whakatōpū. Wellington: Ministry for the Environment.
https://environment.govt.nz/publications/national-climate-change-risk-assessment-for-new-zealand-main-report/
6. California Natural Resources Agency. (2018). Safeguarding California Plan: 2018 Update California's Climate Adaptation Strategy
https://www.slc.ca.gov/sea-level-rise/safeguarding-california-plan-2018-update/
7. City of San Antonio City Council. (2019). Sa Climate Ready: A Pathway For Climate Action & Adaptation.
https://www.sanantonio.gov/Portals/0/Files/Sustainability/SAClimateReady/SACRReportOctober2019.pdf
8. Yarra City Council. (2020). Yarra Climate Emergency Plan 2020-2024.
https://hdp-au-prod-app-yrra-yoursay-files.s3.ap-southeast2.amazonaws.com/1215/9218/8856/Yarras_Climate_Emergency_Plan_2020-24.pdf
9. Lagos State Government. (2012) Lagos State Climate Change Policy 2012 – 2014.
https://silo.tips/download/lagos-state-climate-change-policy

APPENDIX

List of Keywords

adaptive reuse
aesthetic
ancestral
ancient
anthropological heritage
archaeological remains
archive
art
artwork
behaviour (social)
Buffer zone
celebrations
Center
Centre
collection(s)
Conservation plan
craftsman
creative industries
creativity
cultural heritage
cultural assets
cultural capital
cultural facilities
cultural goods
cultural infrastructure
cultural landscapes
cultural resource
cultural tourism
divers(e/ity)

ecosystem
ethnic
expressions
festival
historic centres
historic district
historic environment
historic garden
historic property
landmark
libraries
listed (site, building, property…)
local
maintenance
Management plan
mass
Morfology/Morphology
participat(ory/ion)
Planning process
practice(S)
protected area / site
Protection environment
reconstruction
recreation(al)
redevelopment
refurnish/refurbishment
regenerat(ion/e)
religious

repair
revitalization
ritual
ruins
rural
sacred
scientific heritage
significance
social (integration/interaction/behaviour/system/…)
socio-cultural
Sustainable development
Territorial planning
tolera(nce/ted)
touris(m/tic)
tradition(s/al)
underwater / maritime heritage
urban heritage
urban archaeology
Urban archeology
Urban planning
urban renewal
Urban skyline
value (s)
vernacular
wisdom