

Cultural Adaptations: lessons learned evaluation report.

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2021

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CULTURAL ADAPTATIONS

LESSONS LEARNED EVALUATION REPORT

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August 2021





ClimateReadyClyde



Co-funded by the
Creative Europe Programme
of the European Union



Scottish Government
Riaghaltas na h-Alba
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Creative Carbon Scotland is a Scottish Charitable Incorporated Organisation, Registered Charity number SC042687, supported through Regular Funding from Creative Scotland and by the City of Edinburgh Council's Culture Service and Chief Executive's Strategy and Insight team.



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1. INTRODUCTION

Human cultural dimensions of climate change adaptation are increasingly being recognised as critical¹. The development of adaptation pathways requires the involvement of transnational, national, regional and local actors from public, civil society and private sectors.

Shared values are understood to be central to delivering a just and inclusive transition characterised by solidarity and intergenerational justice. Current proposals focus on the importance of testing and upscaling solutions, creating enabling conditions, societal transformations, demonstrations and deep climate resilience to address the multiple complex risks and challenges which are associated with climate change. Issues such as claims to unjust and uneven distribution of climate risks across society, as well as emotive questions associated with loss/damage and managed retreat, all illustrate the profound effects that climate change is already having. Hence, any effective response to climate change adaptation needs to account for cultural dimensions.

The transition planned in the European Green Deal requires a combination of impactful research and innovation, inclusive community engagement, green financial transition and coherent policy reforms. There is clear recognition of the need to mobilise citizen involvement and leverage local innovations in design, implementation and evaluation of initiatives (co-design, co-implementation, co-evaluation). Social contracts are at the heart of the co-design process. Co-implementation is proposed through citizen science and observatories enhancing education, awareness and communication of climate risks and solutions. Deliberative processes are critical to co-evaluation based on principles as well as objectives. Local governance is seen as critical, given that it is at the local level that many adaptation actions will be developed and put into practice through both formal (e.g. planning, social policy) and informal (e.g. social networks, community ownership) channels.

Cultural Adaptations (EUCAN) was an action-research project seeking to find creative, innovative and place-based methods to adapt to climate change. In four countries in northern Europe, cultural organisations were paired with climate change experts and city governments to explore how culture can adapt to the impacts of climate change, and how creative practices can influence and shape how cities across Europe approach transformative adaptation.

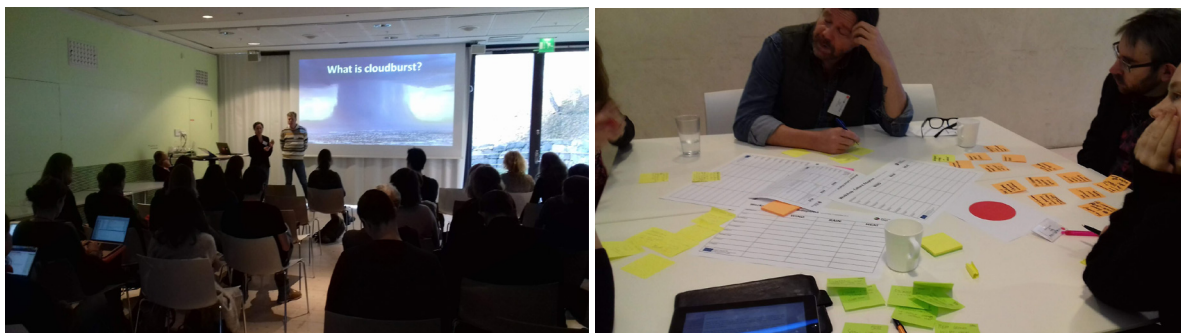
Creative Carbon Scotland, one of Creative Scotland's network of Regularly Funded Organisations, worked on the project Cultural Adaptations (EUCAN) with three partner cultural organisations: [TILLT](#) in Gothenburg, Sweden; [Greentrack](#) in Ghent, Belgium; and [axis Ballymun](#), Dublin, Ireland. Each partner worked with a local organisation ([Climate Ready Clyde](#), Glasgow; ['Rain Gothenburg'](#), [City of Gothenburg](#); [Department of Climate and Environment, City of Ghent](#); [Codema](#), Dublin's Energy Agency) focused on climate change adaptation. Each of these partnerships was responsible for delivering two strands of work focused on the cultural sector learning about adaptation and the sustainability sector understanding the contributions of artists and cultural organisations.

¹ European Commission. Directorate General for Research and Innovation., *A Climate Resilient Europe: Prepare Europe for Climate Disruptions and Accelerate the Transformation to a Climate Resilient and Just Europe by 2030*. (Luxemburg: European Commission Publications Office, 2020), <https://data.europa.eu/doi/10.2777/69766>.

There were, therefore, two main strands to Cultural Adaptations: the development of adaptation strategies as part of new business models for cultural SMEs; and the embedded artist projects which placed artists within adaptation projects run by climate or sustainability organisations. This was realised through ongoing collaborative working between a cultural organisation, a climate/sustainability organisation and an embedded artist in each of the four cities across the project span; and by four two-day transnational meetings (one in each partner city location) held across the project duration plus a final four-day international conference. Toolkits were developed as project outputs to support both cultural organisations ([Adapting Our Culture toolkit](#)) and adaptation practitioners ([Embedded Artist Projects for Adaptation toolkit](#)).

The aim of the transnational meetings was to facilitate mutual learning and sharing of progress between the project partners (combining meeting-type sessions with site visits), as well as to engage other cultural SMEs and climate/sustainability organisations working in each city in thinking about the interface between culture and climate change adaptation through half-day workshops combining talks/lectures and discussion activities (see Figure 1).

The final conference, meanwhile, sought to share the outcomes of the project through a series of keynote talks and parallel discussion sessions, as well as bringing in insights and expertise from a much wider international audience. As we explain later, each of the transnational meetings plus the final conference were originally intended to be face-to-face events. However, due to the emerging COVID-19 situation, only the Glasgow and Gothenburg transnational meetings were held in their originally planned format. The Dublin face-to-face event was significantly scaled down and partially moved online, and the Ghent transnational meeting was shifted fully online. The final conference was also held entirely virtually, having originally been planned to be held in Glasgow.



Activities at Gothenburg Transnational Meeting

This independent evaluation was commissioned by Creative Carbon Scotland as part of the project to ensure that 'lessons learned' were effectively captured and shared. Several aspects of the EUCAN project are innovative, including the placement of artists with adaptation organisations (three of the four adaptation partners had never worked with artists before), as well as engagement of cultural organisations with adaptation strategy (three of the four cultural partners had not worked with adaptation strategies). There are thus two core beneficiary groups from EUCAN: cultural practitioners and SMEs (and indeed the embedded artists themselves); and adaptation and sustainability organisations. In order to fully understand the 'lessons learned' for each of these beneficiaries given the novelty of the approach adopted in EUCAN, two evaluators were therefore engaged with significant contextual expertise in the relevant areas. One evaluator (Leslie Mabon, Open University, previously Scottish Association for Marine Science and Robert Gordon University) focused on evaluation of the outcomes and lessons learned from the project from the perspective of climate change adaptation and sustainability organisations; and the other evaluator (Chris Fremantle, Gray's School of Art, Robert Gordon University) focused on evaluation from the perspective of culture and cultural practitioners/organisations.

The purpose of this evaluation is to draw out lessons learned. The project is contextualised in relation to key literature and examples. The importance of competencies for adaptation is one key finding. The role of creative logic and precedents of artists involved in organisational innovation are another important finding. Knowledge exchange is a useful frame for adaptation projects and an evaluation approach focused by the impacts of knowledge exchange is highlighted.

As interest in the social and cultural dimensions of adaptation, and in the potential of the creative sector to support transformative modes of working within climate adaptation, is growing, the most important aspect of the evaluation was considered to be a focus on what could be learned for other organisations undertaking similar activity in future.

SUMMARY OF KEY RECOMMENDATIONS

Our evaluation draws out five key recommendations. These recommendations, which are discussed further in the final section of the report, span both cultural and climate change/sustainability organisations, and are as follows:

1. There is a need for strategic partnerships between adaptation organisations and the cultural sector.
2. There is a significant opportunity for arts and cultural organisations to engage with the adaptation agenda.
3. The creative sector has significant potential in getting societal buy-in for the adaptation agenda, especially as 'difficult conversations' or intractable problems come to the fore as climate threats intensify.
4. Building trust can be as valuable an outcome as the intervention itself, especially if there is limited history in the locality of collaboration between the cultural sector and adaptation or sustainability organisations. The significance of 'quick wins' or incremental progress should never be underestimated, even in the face of rhetoric of urgency on climate.
5. There is a need to explore the strategic implications of connecting the cultural and sustainability sectors at a European level.

2. CONTEXT

For the purposes of evaluation of the benefits to sustainability and climate organisations at least, ‘adaptation’ can be defined as “activities and strategies to reduce risk and vulnerability to climate changes, in a way that moderates harm to natural and social systems and exploits opportunities”². However, our evaluation also recognises that adaptation and resilience are linked concepts, and sees adaptation as the steps we take to get towards resilience – attaining a dynamic system in response to change³. We acknowledge that ‘resilience’ can entail transformation or ‘bouncing forwards’⁴ as opposed to staying the same. As such, resilience ought to be viewed as a more general end goal, one where the ‘end state’ will not necessarily be the same as the present. Within this, adaptation should also be viewed as transformative⁵, meaning that the goal of adaptation should not necessarily be to maintain the status quo but also to initiate societal transformation when appropriate.

Climate change adaptation is now widely recognised as a critical component of climate change actions alongside climate change mitigation (mitigation meaning actions to limit the extent of climate change, for example emissions reduction). The 2015 Paris Agreement defines a global goal on climate adaptation, namely to enhance adaptive capacity and resilience and to reduce vulnerability with a view to contributing to sustainable development⁶. The Paris Agreement also mandates all parties to engage in adaptation planning and implementation through actions such as climate change adaptation plans, and to communicate these actions through adaptation communications.

In addition to national adaptation plans produced at the national and devolved level (for example, the UK’s Second National Adaptation Programme⁷ and the Second Scottish Climate Change Adaptation Programme⁸), local-level adaptation action at the city and city-region level is critical. The reason for this is that governments and cooperating actors working at the local level have control over many policy areas that are critical to enact adaptation action, such as land use, urban planning,

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- 2 Sara Hughes, ‘A Meta-Analysis of Urban Climate Change Adaptation Planning in the U.S.’, *Urban Climate* 14 (December 2015): 17–29, <https://doi.org/10.1016/j.uclim.2015.06.003>; Leslie Mabon and Wan-Yu Shih, ‘Urban Greenspace as a Climate Change Adaptation Strategy for Subtropical Asian Cities: A Comparative Study across Cities in Three Countries’, *Global Environmental Change* 68 (May 2021): 102248, <https://doi.org/10.1016/j.gloenvcha.2021.102248>.
 - 3 Donald R. Nelson, ‘Adaptation and Resilience: Responding to a Changing Climate’, *WIREs Climate Change* 2, no. 1 (January 2011): 113–20, <https://doi.org/10.1002/wcc.91>.
 - 4 Bernard Manyena et al., ‘Disaster Resilience: A Bounce Back or Bounce Forward Ability?’, *Local Environment* 16, no. 5 (May 2011): 417–24, <https://doi.org/10.1080/13549839.2011.583049>.
 - 5 Aromar Revi et al., ‘Towards Transformative Adaptation in Cities: The IPCC’s Fifth Assessment’, *Environment and Urbanization* 26, no. 1 (April 2014): 11–28, <https://doi.org/10.1177/0956247814523539>.
 - 6 UNFCCC, ‘New Elements and Dimensions of Adaptation under the Paris Agreement (Article 7) | UNFCCC’, accessed 20 August 2021, <https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/new-elements-and-dimensions-of-adaptation-under-the-paris-agreement-article-7#:~:text=The%20Paris%20Agreement%20aims%20to,change%20and%20foster%20climate%20resilience>.
 - 7 Defra, *The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting* (London: Defra, 2018).
 - 8 Scottish Government, ‘Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019–2024’ (Edinburgh: Scottish Government, 2019), <http://www.nls.uk/scotgov/2019/205535668.23.pdf>.

and environmental education⁹. Indeed, local government networks such as [Local Governments for Sustainability \(ICLEI\)](#) and the [Global Covenant of Mayors for Climate and Energy](#) are taking on increasing prominence in global adaptation discourse.

At the science-policy-practice interface for climate change adaptation, the value of knowledge and approaches grounded in the arts, humanities and social science is becoming more prominent as a means of imagining the breadth of transformative outcomes that may be realised through adaptation, and the actions that may be taken to get there. Embedding the arts within policy and research processes is, for example, argued to help make sense of how different people understand changing institutions and environments, and to imagine ways in which people can move forwards and regain agency in the face of ambiguity¹⁰.

Creative Carbon Scotland (CCS)

Creative Carbon Scotland (CCS) has been helping cultural organisations reduce their carbon emissions since 2011 and more recently turned its focus to adaptation to the impacts of climate change: how cultural organisations need to plan for their own adaptation as the climate changes, and also how they can contribute to the wider adaptation efforts and policy in their role as social organisations. One element of this work was the conceiving of and leadership of Cultural Adaptations.

Alongside this more sector-facing work - which goes under the title Transformation of Culture - CCS developed a further strand of work from 2013, [culture/SHIFT](#). This harnesses the essential role that culture has in achieving the necessary transformation to a more environmentally sustainable, socially just society by building connections and collaborations between arts and sustainability practitioners to apply their different skills, practices and working methods to address challenging and complex climate change-related issues. Within this strand, CCS developed its Embedded Artist Project work which was further developed during Cultural Adaptations. The [culture/SHIFT methodology](#) provides more details.

Cultural Sector and Climate Change Adaptation

The cultural sector has long been broadly engaged with issues of climate change, with early examples including the map of sea level rise included in Helen Mayer Harrison and Newton Harrison's 1985 work *The Lagoon Cycle*¹¹. Adaptation has increasingly figured over the past 20 years through various exhibitions and projects including, for instance, [Eve Mosher's HighWaterLine](#) (2007) on sea level rise¹², [Symbiotica Biological Arts' Adaptation exhibition](#) (2012) on biodiversity¹³, [Ellie Harri-](#)

9 Jose Antonio Puppim de Oliveira, 'The Implementation of Climate Change Related Policies at the Subnational Level: An Analysis of Three Countries', *Habitat International* 33, no. 3 (July 2009): 253–59, <https://doi.org/10.1016/j.habitatint.2008.10.006>.

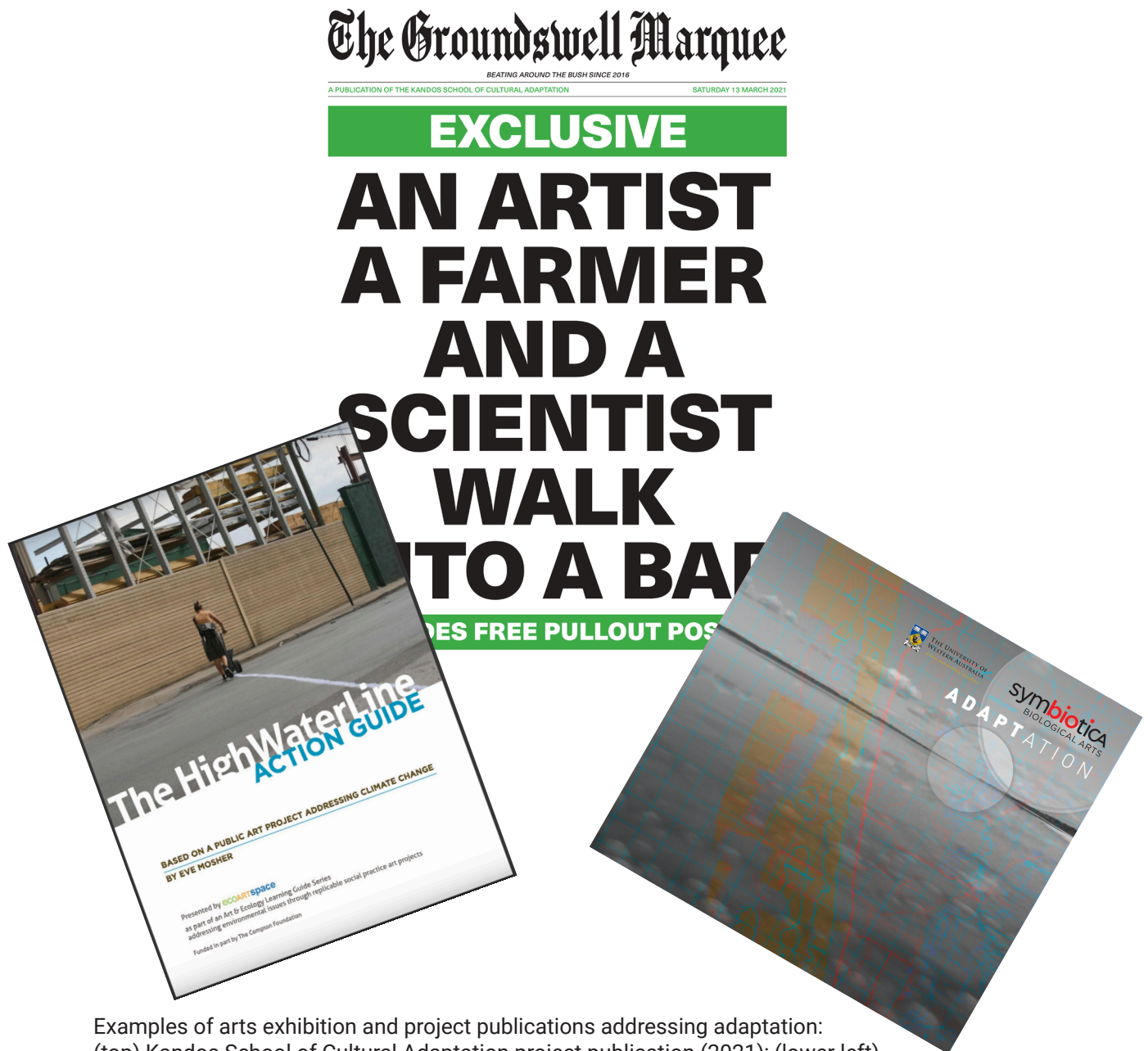
10 Jean-Paul Vanderlinden et al., 'Meaning in the Face of Changing Climate Risks: Connecting Agency, Sensemaking and Narratives of Change through Transdisciplinary Research', *Climate Risk Management* 29 (2020): 100224, <https://doi.org/10.1016/j.crm.2020.100224>.

11 Helen Mayer Harrison and Newton Harrison, 'Seventh Lagoon: The Ring of Water', *Structure and Dynamics: EJournal of Anthropological and Related Sciences*, 2006, <https://escholarship.org/uc/item/45z287n2#main>.

12 Eve Mosher, 'HighWaterLine – Visualizing Climate Change', HighWaterLine, accessed 20 August 2021, <https://highwaterline.org/>.

13 Amanda Alderson, Cecelia Cmielewski, and Michelle Francis, *Symbiotica: Adaption*. (Perth: University of Western Australia, 2013).

son's *The Glasgow Effect* (2016) project on travel, and Helen Mayer Harrison and Newton Harrison's *Greenhouse Britain: Losing Ground, Gaining Wisdom* (2008)¹⁴ which specifically addressed adaptation in strategic terms. The *Kandos School of Cultural Adaptation* project *An artist, a farmer and a scientist walk into a bar* (2017-2019)¹⁵ explores issues of adaptation in relation to farming in New South Wales in Australia, an area significantly affected by drought and wildfires.



Examples of arts exhibition and project publications addressing adaptation: (top) Kandos School of Cultural Adaptation project publication (2021); (lower left) ecoartspace HighWaterLine Action Guide for (2014); (lower right) Symbiotica Adaptation exhibition catalogue (2012).

Arts & cultural organisations have perceived themselves to be resilient and adaptable, and those with collections have risk management plans which often address aspects of climate change adaptation in addressing extreme weather events such as flooding and heatwaves. This was

- 14 Chris Fremantle, 'Greenhouse Britain: Losing Ground, Gaining Wisdom (2006-09): Case Study' (Valuing Nature Annual Conference, Cardiff, UK, 2018), <https://rgu-repository.worktribe.com/output/249255>.
- 15 Laura Fisher, Lucas Ihlein, and Vickie Zhang, 'An Artist and a Farmer and a Scientist Walk into a Bar' (Kandos School of Cultural Adaptation, 2021), <https://www.ksca.land/resources>.

highlighted during the Ghent Transnational Meeting in presentations from Bijloke Muziekcentrum in Ghent on experiencing the impacts of increased heat; and in the Scottish context from the National Galleries of Scotland's 'Disaster Kit', both Edinburgh Printmakers' and Stills Gallery's experiences of flooding, Grid Iron's experience of heatwave impacting on sited theatre work, and the Hogmanay-Festival's experience of increasing wind speeds leading to event cancellation.¹⁶

The COVID-19 pandemic has forced very significant adaptation in the arts and cultural sectors as part of the wider hospitality and tourism industries. Across all forms of arts and culture business models have been very significantly disrupted and new ways of working have been improvised. The full consequences and opportunities for learning will take some time to become fully apparent, but it is clear adaptation will in the future be a more significant feature of organisational planning.

As a concept adaptation is still being grappled with, in the general sense of adaptation to disruption such as in the case of the pandemic, and in the more technical sense as a key concept in climate policy, along with mitigation and justice (sometimes referred to in terms of compensation).

Some interpretations of climate adaptation are oriented around the idea that climate change is inevitable, and we should simply focus on adaptation. This approach contends that mitigation approaches such as energy transitions are not worth the cost or will not achieve their objective. Such approaches to adaptation are not characteristic of any of the partners or artists, all of whom see adaptation as closely interwoven with mitigation and informed by justice questions.

Very much in line with the experience of the pandemic, adaptation can be understood in terms of:

- a. 'getting back to normal', i.e. a temporary change with the assumption of returning to 'business as usual', (sometimes also described in terms of 'resilience') or
- b. 'the new normal', i.e. that adaptation either requires or provides an opportunity to develop new ways of working with specific benefits.

In the latter case adaptation is seen as an opportunity to question underlying assumptions such as success being measured by audience numbers, or economic metrics being more significant than wellbeing metrics.

The full extent to which the pandemic enables 'a new normal' remains to be seen, but the distinction between adaptation as a temporary measure versus an opportunity to shift towards more sustainable ways of working is important.

Another more radical articulation of adaptation within the arts and culture is offered by The Dark Mountain Project amongst others¹⁷. The Dark Mountain Project believes that civilisation (modern western culture) is unravelling, and is at the root of the various environmental crises. This understanding of adaptation is predicated on an assumption that the things we call civilisation, including in particular our belief in human exceptionalism as well as perhaps hyper-individualism in the arts, are the problem and that we need to first imagine and then construct a different sort of civilisation.

16 Creative Carbon Scotland's Research Report *Visual Arts and Climate Change Adaptations in Scotland 2019* highlights a number of these key issues <https://www.creativecarbonscotland.com/project/adaptation-cultural-sector/arts-climate-adaptation/visual-arts-and-adaptation-research/>.

17 Dark Mountain Project <https://dark-mountain.net/about/> Others include the Deep Adaptation project https://en.wikipedia.org/wiki/Deep_Adaptation and the work of Joanna Macy <https://workthatreconnects.org/>

These various positions (temporary adaptation, a new normal, civilisation unravelling) are useful for understanding artists' and cultural approaches to adaptation.¹⁸

What is the role of adaptation organisations?

'Adaptation organisations' is used as a broad term within this evaluation to encompass local government, national government, and/or third sector organisations working to implement climate change adaptation responses within a specific locality. In addition to this definition, we are also interested in organisations with a remit which extends beyond climate change adaptation into sustainability more widely, given the potential synergies between climate change adaptation and sustainable development that can be seen in [UN Sustainable Development Goals](#) such as SDG 11 (Sustainable Cities and Communities), SDG13 (Climate Action), and SDG15 (Life on Land).

As outlined above, organisations working at the local level (i.e. the municipal or city region level) have a particularly important role to play in putting climate change adaptation into practice through actions such as land use, planning and environmental protection enforcement. Nonetheless, whilst the significance of local-level adaptation and sustainability organisations is recognised, there is also increasing awareness that these organisations (and the individuals within them) require particular skill sets or competencies in order to put adaptation actions into practice. Within many of these, arts-based practice has a significant role to play in strengthening these competencies¹⁹.

Recent scholarship has elaborated what long-standing ideas of competencies for sustainability may mean when applied to climate change adaptation at the city level. A review of competence areas for climate change adaptation undertaken as part of the Scottish Government's TRACTION project²⁰ identified five broad competence areas:

- Setting goals, targets and outcomes through policy and leadership;
- Defining, developing and realising pathways from the present towards envisioned outcomes;
- Accessing, synthesising and using knowledge;
- Enabling civil society collaboration;
- Addressing ethical and justice issues.

These competence areas have subsequently been compared against broader literature on competencies for adaptation at the local level, and empirically refined through application across city contexts (see Mabon and Shih, 2021)²¹. Within each of these areas, extant literature indicates a number of areas in which arts-based practice may help adaptation organisations to realise their goals.

As far as *setting goals, targets and outcomes* is concerned, adaptation organisations have a vital role in crafting rich pictures of the future to galvanise adaptation action across sectors, and also in

18 Another articulation of this idea is offered by Jim Dator of the Hawaii Research Center for Futures Studies. This approach conceives that there are four generic futures: 'continued growth', continuing within constraints', 'collapse', and 'transformation'. For a full discussion of these alternatives see, Jim Dator, 'Alternative Futures at the Manoa School' in *Jim Dator: A Noticer in Time*. Anticipation Science, vol 5. (Springer, Cham, 2019) pp 37-54. https://doi.org/10.1007/978-3-030-17387-6_5.

19 See for instance Adaptation Scotland Case Study published 2017 'Engaging with the community on climate change adaptation through cultural practice' https://www.adaptationscotland.org.uk/application/files/4415/1075/5996/Case_Study_Aberdeen_Arts_Festival_FINAL.pdf

20 Leslie Mabon and SNIFFER, 'Engaging with the Community on Climate Change Adaptation through Cultural Practice' (Edinburgh: Adaptation Scotland, 2017), https://www.adaptationscotland.org.uk/application/files/4415/1075/5996/Case_Study_Aberdeen_Arts_Festival_FINAL.pdf.

21 Mabon and Shih, 'Urban Greenspace as a Climate Change Adaptation Strategy for Subtropical Asian Cities'.

acting as champions to move adaptation initiatives forwards. For *defining, developing and realising pathways*, there is a critical role for adaptation organisations (and the individuals working within them) in ‘getting things done’ in practice by bringing different sectors together to agree on – and enact – practical courses of action²². As far as *accessing, synthesising and utilising knowledge* goes, adaptation organisations may have a critical role and responsibility to act as knowledge-brokers, synthesising and translating evidence to explain the necessity of specific adaptation actions and also knowing which experts to call on and when to call on them. For *enabling civil society collaboration*, adaptation organisations may find themselves acting as boundary-spanners, that is, institutions which are able to speak to a number of sectors at the same time in the appropriate language, and thereby facilitating connections and collaboration²³. Finally, as far as *ethical and justice issues* go, adaptation organisations may be tasked with making decisions on putting ethical principles into practice through, for example, identifying vulnerable communities for priority interventions or defining the criteria on which assessments of ‘vulnerability’ are themselves based²⁴.

In sum, there is ample scholarly evidence to illustrate that adaptation organisations (and, indeed, sustainability organisations) require a much broader set of competencies, knowledges and skill sets than purely technical and scientific knowledge of the effects of climate change and the measures that may be taken in response. These competencies may be held by both individuals within organisations, or held by organisations themselves through embedding in organisational culture and working practices²⁵. In this context, the role of arts-based practice in enabling adaptation organisations to meet their goals goes far beyond visualisation of climate risks or the underpinning science. As we discuss in the next sub-section engaging with artists and arts-based practice may, for example, create new fora which allow different local government sectors or different stakeholders to collaborate in ways they have not previously, challenge existing assumptions on the range of possible outcomes and pathways to get there, and give new insights on how different knowledge systems can be synthesised.

What is the role of the cultural sector?

The cultural sector broadly encompasses performing arts, creative arts, writers, museums, libraries and other cultural attractions²⁶. The publicly funded part of the cultural sector focuses on supporting arts development and engaging diverse audiences and communities. In addition to the mainstream cultural organisations familiar to most, the cultural sector also includes organisations

- 22 Arnim Wiek, Lauren Withycombe, and Charles L. Redman, ‘Key Competencies in Sustainability: A Reference Framework for Academic Program Development’, *Sustainability Science* 6, no. 2 (July 2011): 203–18, <https://doi.org/10.1007/s11625-011-0132-6>.
- 23 Adriane MacDonald et al., ‘Sustainability Managers: The Job Roles and Competencies of Building Sustainable Cities and Communities’, *Public Performance & Management Review* 43, no. 6 (1 November 2020): 1413–44, <https://doi.org/10.1080/15309576.2020.1803091>; Francisca Perez Salgado, Dina Abbott, and Gordon Wilson, ‘Dimensions of Professional Competences for Interventions towards Sustainability’, *Sustainability Science* 13, no. 1 (January 2018): 163–77, <https://doi.org/10.1007/s11625-017-0439-z>.
- 24 Sarah Lindley et al., ‘Climate Change, Justice and Vulnerability’ (York: Joseph Rowntree Foundation, 2011), <https://www.jrf.org.uk/report/climate-change-justice-and-vulnerability>.
- 25 Hayley Leck and Debra Roberts, ‘What Lies beneath: Understanding the Invisible Aspects of Municipal Climate Change Governance’, *Current Opinion in Environmental Sustainability* 13 (April 2015): 61–67, <https://doi.org/10.1016/j.cosust.2015.02.004>.
- 26 Different nations and regions have different frames e.g. in Flanders the ‘cultural sector’ is considered more broadly: it means the arts, heritage and the ‘socio-cultural sector’ (which can be both NGOs working on raising consciousness about finance, or sustainable mobility, or divestment, or a choir for people with dementia, but also every adult education or anything that organises workshops and additional education to the traditional institutions) see <https://socius.be/over-de-sector/> and <https://socius.be/organisatie/>

focused on issues such as the environment and the role of innovation²⁷. This intersects with the Creative Industries, and design, a key part of the Creative Industries, has an important role in relation to adaptation strategy and planning as well as on the ground engagement.

In terms of understanding the broad contribution of artists and the cultural sector, Michael Eriksson of Chalmers University has proposed that 'creative logic' is distinctive from 'efficacy logic'. He compares approaches to five key issues associated with social environmental challenges: focus, uncertainty, complexity, success, decision-making.

Key challenge/issue	Efficacy Logic	Creative Logic
Focus	Minimising deviation from plan and budget	Continual experimenting and accumulating results
Uncertainty	Minimising by rigorous planning	Necessary condition for developing new concepts
Complexity	Best managed by breaking down	Best managed by generating many overall views
Success	Functional specialisation and minimising interdependence of workgroups	Combining competences and perspectives are necessary conditions
Decisions	Based on predetermined quantitative data	Based on the results of experimenting

Creative logic provides an effective framework for presenting one of the key contributions of arts & culture to the adaptation challenge, alongside the significant audiences that engage with cultural venues and programmes.

Frances Whitehead, keynote speaker at the Cultural Adaptations conference and embedded artist with the City of Chicago's Planning Department, also articulates key aspects of Creative Logic captured in her statement '[What Do Artists Know?](#)'²⁸ This text highlights several key skills and competencies including synthesising; learning/speaking many 'languages' (artspeak, funding, specific environment terminologies as well as vernaculars of localities and inhabitants); pro-active not re-active practices; creative in-process problem solving; and analysis along multi-criteria²⁹. These correlate with and reinforce our understanding of 'creative logic'.

Jens Thoms Ivarsson, Creative Director at 'Rain Gothenburg', one of the partners in Cultural Adaptations, highlighted key aspects of Design Thinking which are also relevant in this context. Design Thinking is characterised by 'focusing on the problem that we really need to solve' by:

- Transforming existing conditions into preferred ones
- Using divergent and convergent modes (the 'Double Diamond')
- Seeing the implicit and making explicit
- Reducing fear of failure
- Focusing on synthesis rather than analysis

²⁷ Creative Carbon Scotland is an example of the former, as is Greentrack and other organisations such as Julie's Bicycle <https://www.juliesbicycle.com>. TILLT is an example of the latter, as is EMC Arts <https://www.emcart.org/>.

²⁸ Frances Whitehead, 'What Do Artists Know?' (Artetal Studio, 2006), http://franceswhitehead.com/content/4-think/fwhitehead_what-do-artists-know.pdf.

²⁹ Frances Whitehead, "Embedded Artist Pts 1-3," in *Embedded Artists: Artists Outside the Art World: The World in Quest of Artists* (eds) Frederic Martel and Hartmut Wickert (Zurich: HDK, 2020).

Different ways artists are addressing climate change

The increase in arts projects and exhibitions focused by climate change highlights the contribution that the arts can make:³⁰

- *Creative imagination and serendipity*: Potential to create spaces for active experimentation and imagination, fostering creative thinking. Serendipity is an integral part of emergent and resilient responses
- *Dealing with difficult emotions and dilemmas*: Create safe spaces of disclosure and sharing
- *Engaging storytelling*: Narratives combine cognitive with emotional resources in the depiction of specific experiences, offering increased comprehension, interest and engagement of audiences
- *Science communication*: Enrich narrative, visual and experiential aspects of communication and extend its reach
- *Possibilities for political engagement*: Hybrid experiences that bring together art, science and climate change can be fertile ground for collective action by creating sites of encounter, public scrutiny, meaning negotiation and trust
- *Exploring futures imaginatively*: Develop metaphors, imagery and narratives of alternative futures
- *Pre-figuring potential futures through direct action*: Develop and perform direct intervention, experimentation and redesigning in daily situations and social systems
- *Engaging with values and beliefs*: Unveil values and beliefs behind action and perception, connecting with personal and collective drivers of action
- *As part of transdisciplinary learning processes of knowledge integration*: Artists as active participants of a transdisciplinary process integrating multiple learning and processes and involving multiple ways of knowing
- *Shifting awareness and openness to more-than-human worlds*: The arts may provide access to different sources of cognitive, emotional and sensual experience, opening up sensibilities to extended ecologies and more-than-human worlds
- *Coupling cultural systems with social–ecological change*: Art can reveal materially and directly what is happening in social–ecological systems which may lead to the attuning of human perception, value systems and worldviews to changes in the biosphere
- *Embracing social–ecological complexity*: Art embraces uncertainty and tends to trace the ways in which society and nature are intertwined. This approach may open up alternative modes of relations to nature beyond ‘command-and-control’

The subsequent Findings section provides specific commentary on which of, and the extent to which any of, these potential impacts were realised in the four pilot embedded artist initiatives within Cultural Adaptations.

Background to the Embedded Artist

The idea of the embedded artist has a range of precedents (including as noted above Frances Whitehead’s work). Creative Carbon Scotland’s [Library of Creative Sustainability](#) documents a number of these including historic and contemporary examples. TILLT (also a EUCAN partner) has been coordinating artists’ work in organisations for 20 years. TILLT focuses on the value of ‘creative logic’ to address complex problems. Artists including Frances Whitehead have adopted the specific terminology of ‘embedded’ to focus on the process-based role. Historic examples include the Artist

30 Diego Galafassi et al., ‘Raising the Temperature’: The Arts in a Warming Planet’, *Current Opinion in Environmental Sustainability* 31 (2018): 71–79.

Placement Group (1966-79), and Mierle Laderman Ukeles, Artist in Residence post with the New York City Sanitation Department (1977-ongoing).

Both TILLT and the Artist Placement Group (APG) provide a useful guide to characteristics of 'placements' and embedded artists.

TILLT	Artist Placement Group
Always balancing artistic freedom with goal (project/ programme)	The function of art is determined by the process and the levels of attention to which the work aims The status of the artist within organisations is independent, bound by invitation
Matching artist to assignment - Focusing on mindset and 'driving forces'	Context is half the work
Supporting the artist and organisation (Communications, Being someone to talk to, Coaching, Troubleshooting)	The status of the artist must necessarily be in line with other professional persons in the organisation
Creating the Project Group – cross sectoral, every department, ambassadors	The position of the artist should facilitate a form of cross-referencing between departments
<i>Summarised from presentation by Johan Lundblad and CA project blog</i> ³¹	<i>Summarised from presentation by Barbara Steveni</i> ³²

Other current work on the idea of the embedded artist includes the 2018 'Embedded Artist Conference' organised by HDK Zurich. In the publication of that conference Professor Anne Douglas draws out the connection between the embedded artist, as exemplified by Ukeles, Whitehead and the Artist Placement Group, with long term research into The Artist as Leader³³, exploring the dynamics of practice, organisational leadership and civic engagement. She highlights the role of artists, "...to create and share experiences in which as individuals we can exercise the right to one's own imagination and critical perspective, and to connect this with our need to live together as citizens"³⁴.

In summary, there are common characteristics and clearly identified ways that artists can contribute to adaptation challenges through bringing 'creative logic' to the table. Optimising the impact of artists' involvement in adaptation projects requires first and foremost openness (to outputs as well as processes) but also effective support from adaptation professionals³⁵.

31 For a more detailed description of TILLT's process see <https://www.culturaladaptations.com/resources/embedded-artist-processes-learning-from-tillt/>

32 Barbara Steveni and Emily Pringle, 'Organisation and Imagination', /Seconds. 8 (April 2008), <https://www.slashseconds.org/issues/002/004/articles/bsteveni2/index.php>.

33 Anne Douglas and Chris Fremantle, *The Artist as Leader: Research Report* (Aberdeen: Robert Gordon University, 2009), <http://hdl.handle.net/10059/405>; Jon Price, 'The Discourse of Cultural Leadership' (PhD thesis., Robert Gordon University, 2016).

34 Anne Douglas, "'...The Eye of the Stranger': A Practice Led Research Perspective on the Embedded Artist", in *Embedded Artists: Artists Outside the Art World - The World in Quest of Artists*, ed. Frédéric Martel and Hartmut Wickert (Zurich: Zurich University of the Arts, 2019), 71.

35 Anyuta Wiazemsky Snauwaert (embedded artist in Ghent) highlights these characteristics <https://www.culturaladaptations.com/resources/artist-anyuta-wiazemsky-snauwaert-interviewed-by-the-flanders-art-institute/>

3. METHODOLOGIES

SUSTAINABILITY ORGANISATIONS

Evaluation of each of the transnational meetings - and the final international conference - was structured around an evaluation grid developed and adapted from the three-part framework of urban climate change adaptation proposed by Tyler and Moench³⁶. This looks at systems (support systems, including physical infrastructure and ecosystems), agents (individuals, households, and organisations), and institutions (rules or conventions that structure human behaviour). The value of using this framework, and applying it to the benefit that sustainability organisations derive from embedded artist projects and arts-based practice, is that it enables the transformative potential of arts-based practice to be considered in terms of the outcomes for (a) the natural and physical environment; (b) the people working within sustainability and climate organisations; and (c) the cultures and practices of organisations responsible for adaptation implementation.

Element		Systems	Agents	Institutions
Embedded Artist Projects	Organisation	Potential of arts-based approaches to create space for experimentation?	Value of collaboration with arts practice in acting as a focal point for reflection and learning across organisation?	Diffusion of insights from arts collaboration across the organisation, leading to changes in practice?
	Individuals	Value of participation in arts-based collaboration to facilitate systems thinking, especially relationship between society and ecology?	Enhanced competence to reflect on practice and enact/evaluate changes to attain outcomes towards resilience?	Enhanced competence to understand ways of working within an institution towards climate resilience, e.g. through new ways of decision-making or synthesising information?
Adaptation Workshops for Cultural Organisation	Organisation	Enhanced understanding of effects of climate change (both environmental and social) on organisation's practice?	Improved organisational strategies for being able to handle shocks and disruption associated with climate events?	Integration of climate resilience – and knowledge of climate risks – into organisational decision-making?
	Individuals	Value of adaptation training/communication in fostering understanding of social and ecological systems thinking?	Enhanced ability to reflect on own practice and to understand/enact changes in practice to increase climate resilience?	Individual awareness of how to access and integrate new climate information into practices?

36 Stephen Tyler and Marcus Moench, 'A Framework for Urban Climate Resilience', *Climate and Development* 4, no. 4 (October 2012): 311–26, <https://doi.org/10.1080/17565529.2012.745389>.

CULTURAL ORGANISATIONS and EMBEDDED ARTIST (EA) PROJECTS

The cultural organisations and embedded artists evaluation used an approach derived from Knowledge Exchange Impact evaluation previously used by the evaluator which builds on work by Catherine Lyall, Laura Meagher and Sandra Nutley³⁷. They have variously used this approach in evaluations including the Scottish Government's Rural Economy and Land Use (RELU) programme, as well as Forest Research Science and Innovation Strategy.

The Lyall/Meagher/Nutley Impact Prism (LMN Impact Prism) approach looks for key characteristics of impact across five types as described in the following table.

Type of Impact	Description
Conceptual	Seeing of feeling things differently ('a-ha' moments)
Capacity building	Developing knowledge and skills of practitioners, managers, policy-makers
Instrumental	New ways of doing/making Changes in policy/regulation/standards
Attitudinal	Increased willingness to work collaboratively / across sectors
Enduring connectivity	Lasting relationships and ongoing interactions

The range of individuals who might gain benefits from the various types of impacts includes³⁸:

- Policy-makers (including regulatory bodies; local, national and international);
- Practitioners (public, private, NGO);
- Communities (of place or interest, general public);
- Researchers (within and beyond the project and institution);
- Others

This approach is particularly relevant when focusing on the impact of 'creative logic' because, in line with Knowledge Exchange, the effects can be elusive, subtle and diffuse, as well as extending over the long-term.

Previous experience has also shown that there are linkages between aspects such as between conceptual shifts, capacity building and attitudinal shifts. It is generally recognised that instrumental impacts, whilst being perceived as the most valuable, are also the most difficult to secure. One of the important indicators of impacts is enduring connectivity, i.e. individuals from different disciplines or sectors, in different organisations or departments, continuing to work together beyond an initial project.

37 Chris Fremantle et al., 'Impact by Design: Evaluating Knowledge Exchange as a Lens for Evaluating the Wider Impacts of a Design-Led Business Support Programme.', 2016.

38 David M. Edwards and Laura R. Meagher, 'A Framework to Evaluate the Impacts of Research on Policy and Practice: A Forestry Pilot Study', *Forest Policy and Economics* 114 (May 2020): 101975, <https://doi.org/10.1016/j.forpol.2019.101975>.

METHODS:

Programme of events and impacts of COVID-19:

- For the Glasgow and Gothenburg transnational meetings, evaluation was carried out in person at the face-to-face events.
- The cultural evaluator did not travel to Dublin because of the first wave of COVID-19 in spring 2020. The Sustainability evaluator did travel to Dublin, however the face-to-face workshop was cancelled while the evaluator was already in transit.
- For both the Ghent transnational meeting and the Cultural Adaptations Conference both evaluators participated fully in the fully digital events.

The two evaluators developed a common linked methodology and protocol, and held debriefing sessions after each transnational meeting to compare observations and identify areas of synergy and divergence. These debriefing sessions also allowed additional points of importance and interest, which may not have been expected or envisaged at the project outset, to be identified and incorporated into the evaluation criteria for subsequent transnational meetings.

SUSTAINABILITY AND CLIMATE ORGANISATIONS

The evaluation of the benefits to sustainability and climate organisations was undertaken through participant observation at each of the transnational meetings (Glasgow, Gothenburg, Dublin, Ghent) plus the final *Cultural Adaptations* conference. Attention was paid to two elements: the value of the embedded artist projects to the core sustainability/climate organisations in the project; and the value of the transnational meeting workshops to other adaptation and sustainability organisations in the locality who attended the transnational meeting with the aim of learning more about embedded artist projects and arts-based approaches to adaptation.

For the Glasgow and Gothenburg transnational meetings, evaluation was carried out in person at the face-to-face events. Detailed field notes were written up on the basis of observation of the proceedings of the meetings, and informal conversations with sustainability and adaptation partners as well as visiting workshop participants. For Dublin, due to the rapidly-evolving COVID-19 situation in spring 2020, the face-to-face workshop was cancelled while the evaluator was already in transit. Participant observation was therefore carried out at the disrupted Dublin transnational meeting for both the smaller-scale workshop which took place with participants already present at Axis, and also for the online discussion event which was organised by Axis later in spring 2020 in lieu of the face-to-face event. For both the Ghent transnational meeting and the final project conference, evaluation again took the form of participant observation and the writing up of field notes. The evaluator attended and participated in the virtual sessions for both events, following the same evaluation criteria as for the in-person events. Nonetheless, extra attention was paid to what could be learned from the project's 'adaptation' to one shock/stress in COVID-19, and also to how a move from physical to digital spaces affected the nature of dialogue, interaction and potential for learning.

As above, the sustainability evaluator worked in close collaboration with the embedded artists and cultural organisations evaluator across the project span.

EMBEDDED ARTISTS AND CULTURAL ORGANISATIONS

The cultural evaluation focused on identifying the benefits of the project for artists and cultural organisations using the LMN Impact Prism as a means of identifying varied impacts of interactions between different actors.

At the outset a series of key questions were identified:

- How do artists work with (cultural) and within (sustainability) organisations? What does 'embedded' mean in the case of each pilot project?
- What does success look like?
- Do the partner cultural organisations have expertise in facilitating this process? What precedents are relevant? (a key issue in this sort of cross sectoral work is the formation of the artist's brief.)
- What approaches are useful to enabling the quick entry of the artist into the sustainability organisation and their effective presence within the organisation?
- To what extent is the artist 'at the table' and what happens when they are?
- In what ways do the artists understand the sustainability organisations to 'think differently'?

The cultural evaluation involved participant observation, interviews and questionnaires:

- Questionnaire and Interviews during Project Initiation phase (Feb/Mar 2019)
- Observation documented in reports on transnational meetings (Glasgow, Gothenburg, Dublin, Ghent)
- Interviews during Project Dissemination phase (Feb/Mar 2021)
- Close co-operation with the sustainability evaluator

Recordings were made of all the interviews and notes taken during the interviews. During face-to-face and online events notes were taken and written up capturing observation and informal conversations at all the key stages with artists, cultural partners, sustainability and adaptation partners as well as visiting workshop participants.

This material was analysed using the 'LMN Impact Prism' as a means to identify key learning points in relation to the questions identified at the outset.

4. FINDINGS

The findings for the evaluation for sustainability/adaptation organisations, and thereafter embedded artists and cultural organisations, are presented in turn. As each evaluation used different criteria to reflect the key issues in the climate change adaptation and arts and climate change literature respectively, the two findings sections follow a slightly different structure. The sustainability organisations evaluation follows a more tabular approach to identify cross-cutting themes across events and categories; whereas the embedded artists and cultural organisations evaluation adopts a more narrative approach to reflect the breadth of ways in which the interventions in EUCAN created a diversity of outcomes.

SUSTAINABILITY ORGANISATIONS

The table below draws out some of the key insights from each of the main participation instances across the project span. The table shows some of the key learnings and observations under the three parts of the Tyler and Moench³⁹ framework. Nonetheless, critical insights about the value brought to the sustainability and adaptation organisations can be summarised as follows.

In terms of impacts on *systems*, a key benefit of embedded artist and arts-based approaches is that they provide sustainability and adaptation organisations with new ways of experiencing the interface between social and ecological systems, of crafting rich pictures of the future, and of understanding how different ways of knowing can interact with each other. These approaches can be especially powerful in helping to challenge assumptions in cases where there is already a very strong and set institutional vision of what adaptation 'ought' to entail. However, these benefits may be easier to realise in cases where there are already good systems thinking capabilities within the organisation, and a willingness to engage with new ways of thinking and working.

As far as impacts on *agents* is concerned, a key benefit of the embedded artist projects is that they acted as a focal point (or a 'safe space') in which individuals could reflect on their own practice and ability to enact change towards adaptation within their organisations. The embedded artist projects also helped to raise awareness of the possibility that individuals with the skill sets necessary to 'get things done' in terms of adaptation and sustainability may not at present be working directly on adaptation matters, and hence that more effective adaptation outcomes could be achieved through cross-departmental collaborative working of the kind facilitated by embedded artist projects. Again, however, challenges remained around sustaining interpersonal relations beyond the project span and engaging with adaptation and sustainability organisations who are not already 'on board' with regard to the value of arts-based approaches.

Finally, with regard to benefits for *institutions*, embedded artist projects and broader arts-based approaches were seen as flattening traditional hierarchies and power structures, as well as making links across institutional silos. These created the conditions (e.g. in Ghent) for new relationships to be formed, in a way that ran contrary to usual municipal decision-making processes. However, the projects also showed that adaptation and sustainability organisations can themselves be large and

39 Tyler and Moench, 'A Framework for Urban Climate Resilience'.

slow-moving institutions, and that it is not always easy for institutions (or indeed artists) to know where or how to best intervene in order to initiate transformative change. It is also worth noting that whilst shocks and stresses such as COVID-19 or environmental crises represent moments and opportunities for change, it is vital that institutions devote time to properly reflecting on, evaluating *and learning from* their responses to such shocks and stresses once the phase of relying on temporary fallbacks/emergency responses has passed.



SPECIFIC FINDINGS FROM TRANSNATIONAL EVENTS AND CONFERENCE

	Glasgow	Gothenburg	Dublin	Ghent	International
Systems	<p>Glasgow is an example of a city where there are very strong systems thinking competencies across key organisations (local government, universities, third sector). This extends also to a willingness to acknowledge and engage with arts-based approaches to understanding adaptation. Takeaway: useful to look at existing context as this can identify opportunities/ challenges for new embedded artist projects within a city.</p> <p>When we are embedding arts into adaptation, how far can we get before we run into financialisation and business continuity-type approaches to adaptation and to resilience? Given how dominant this rhetoric is, is there a danger of inequalities creeping back in despite good intentions towards justice and equity?</p>	<p>How do we understand extreme events in the future, and how do we think about responding to them in the present? Floods presented as inevitable, but also as something about which a lot can be done now.</p> <p>Similar to the finding from Glasgow: the way in which the initial sessions on climate change adaptation are framed is very important in setting the tone of discussion, especially with participants not so familiar with the technical aspects of climate adaptation.</p> <p>How to take transformative or creative approaches to visioning the future – especially outside of the status quo – whilst still being able to get a handle on what is possible? E.g. how to go from a creative/ transformative approach to being able to imagine something concrete and tangible?</p>	<p>Disruptions and setbacks: both the Dublin transnational meeting and also the wider organisations engaged in the learning were undergoing a period of significant uncertainty during the meeting due to an external shock (COVID-19). These unexpected events necessitated realignment of visions – given we may well see shocks/ stresses under climate change, how prepared and able are we to be able to not only set a vision, but also re-assess it in response to shocks and upsets?</p> <p>Learning from Ballymun case: challenge assumptions about where the ‘vulnerabilities’ are in the system when working with marginalised/ stigmatised communities and localities – necessity of critical scrutiny as to who is vulnerable and who is empowered in adaptation-focused embedded artist project?</p>	<p>Learning from Paul De Smet De Naeyerpark: embedded artist approaches as a means of conveying multi-sensual and embodied experience of changing climate to policy and planners. But what happens when we run up against the physical realities of green space planning implementation?</p> <p>Crafting rich pictures of the future – COVID as enabling and in fact necessitating new modes of working, with more opportunity for physical visits to sites through ‘walking meetings’.</p>	<p>Not only about different ways of knowing (e.g. natural science/ ecology; social science; arts; policy; practice), but also different systems of working and interaction.</p> <p>We are still making sense of how virtual forms of interaction inform our relations with each other. This is not just a practical point to do with technology etc, but also a more profound issue about how we undertake social learning and build/maintain trust with one another. <i>Key question: in a virtual or blended world – and in conditions where we know trust is so important for successful arts-adaptation projects – how can we build and sustain trust and sincerity in each other?</i></p>

	Glasgow	Gothenburg	Dublin	Ghent	International
Agents	<p>How do we reach beyond arts organisations (and indeed sustainability organisations) which are already on board with adaptation and with arts-based approaches? And how do we find pathways into higher levels through organisations and especially agents within them who are engaged and interested and understand 'business model' framings, and how to work within these?</p>	<p>Value of embedded artists in creating resilient 'agents' was understood through the potential to act as a focal point for reflection and learning across the organisation; and through the ability to support individuals in reflecting on their own practice and enacting change;</p> <p>How can artists intervene in 'systems', both at an organisational level and when it comes to working with individuals within the system?</p>	<p>Who are the people with the good skill sets? They might not be involved in the adaptation discussions at present, but they might have the right skills to enable us to have a good understanding of social and environmental systems. How to call upon and embed their knowledges?</p> <p>Pace and speed – longevity and not rushing are important for facilitating transformation. Building relations with non-arts organisations takes years, and is about overcoming fear. Interpersonal competencies may also differ – some partners may take a more incremental and cautious approach to collaboration between sustainability and arts, but projects can still produce transformative and valuable outcomes in the longer term.</p>	<p>Both with City of Ghent and also with other sustainability and adaptation partners, we can see the importance for success of sustainability partners both willing to engage with embedded artist initiatives, and also to then 'get things done' within their own organisations.</p>	<p>Learning from failures and challenges within success stories: sustainability and adaptation tends to focus a lot on best practices and 'success stories'. However, might candid discussions of the learnings and roadblocks in otherwise successful projects (e.g. the TILLT-Poseidon project in Gothenburg) be more valuable to those new to arts-based adaptation projects?</p> <p>Sustaining relations beyond project spans. Cultural Adaptations – and projects like it – are time- and budget- limited. Yet climate risk is only going to continue and may even intensify, and sustainability/ adaptation organisations will need to maintain relations with communities into the future. <i>Key question: how to sustain goodwill and trust beyond project span as adaptation challenges continue?</i></p>

	Glasgow	Gothenberg	Dublin	Ghent	International
Institutions	It is true that Glasgow has strong capabilities in both adaptation and arts – however, the extent to which other organisations in the city who are not so familiar with working at this interface are able to engage with spaces of dialogue on arts for adaptation is perhaps more open to question.	How can sustainability organisations – which are often themselves embedded within complex and slow-moving systems – be able to understand how and where an artist can intervene in the system to facilitate positive change?	Dealing with unexpected setbacks and disruptions, learning on the job: the Dublin transnational meeting was itself an event which was shifting on an hourly basis due to the rapidly deteriorating COVID-19 situation in Ireland. Importance of devoting time to evaluate and assess our responses to how institutions deal with unexpected setbacks – even if the actions taken at first are temporary fallbacks, we can still learn from them. How to embed evaluation of learning from crises and emergencies into institutional practices of social learning?	<p>Embedded artist projects – and also new working practices under COVID – both present opportunities to flatten power structures and remove hierarchies that may be present in decision-making in formal meeting room settings.</p> <p>Remote and virtual interaction in the COVID era: offers potential for inclusivity in dialogues at the adaptation-arts interface, but may also create new inequalities or anxieties. This is something we are all still figuring out, so important (perhaps?) to be cautious about the normative and inclusivity benefits of e-participation.</p>	Importance and value of toolkits – however as launch of toolkit often comes at the end of a project or process, how do we evaluate the success of toolkits – which are valuable for strategic competence and collaboration – when they are put into use? <i>Key question for follow-on work: how do we systematically evaluate the value of toolkits?</i>

CULTURAL ORGANISATIONS and EMBEDDED ARTIST (EA) PROJECTS

Findings are highlighted in relation to the five key areas of impact (conceptual shifts, capacity building, instrumental impacts, cultural/attitudinal shifts, enduring connectivity). The range of potential beneficiaries of impacts includes policy-makers, practitioners, communities as well as researchers are highlighted. These have been grouped around some of the key issues identified at the outset:

Cultural Organisations working with Sustainability Departments and Organisations.

There were specific Instrumental impacts:

- **The Cultural Adaptations project informed the shape of Creative Ireland's Climate Action Fund**, both at the project level through CCS Director (Ben Twist) and through input from the Dublin EA (Maeve Stone) and Sustainability Partner (Gerry Wardell) who presented at a workshop.
- **The CCS Director then assisted in the assessment of applications to the €2m fund** aimed at increasing public engagement with climate change.
- **Creative Carbon Scotland was asked by Climate Ready Clyde/Sniffer to join the EU-funded EIT Climate-KIC project Clyde Rebuilt** This built on the Cultural Adaptations project and demonstrated Enduring Connectivity - Creative Carbon Scotland continuing to work with Sniffer/Climate Ready Clyde beyond one project.
- **Greentrack took the Adaptation issues and worked with Vooruit Arts Centre** on a [new commissioned programme entitled 'Drift'](#) which focused on the experience of climate adaptation through the elements.
- **Artists and cultural partners have contributed to conferences and panel discussions** on adaptation and culture in the UK, Europe and North America with audiences of cultural practitioners, funders and policy-makers.
- **Cultural Adaptations was one of eight projects shortlisted for a NICE Award by the European Centre for Creative Economy**, demonstrating interest from non-cultural organisations in culture's contribution to addressing climate change.

There were multiple moments of realisation particularly between cultural and sustainability organisations, as well as with embedded artists (Conceptual Shifts leading to Capacity Building):

- **Sustainability professionals highlighted the urgent need to 'enlarge the support base'** for climate adaptation actions, that engagement with adaptation needs to 'step up a gear', even that there has been a 'vacuum' in adaptation planning.
- **If 'business as usual' isn't working then embedded artists can offer an important alternative** bringing creative logic to address challenges (noted by Kit England, Climate Ready Clyde)⁴⁰.
- **Both specific sites and Adaptation Policies can act as project focal points** - however 'place' is key to adaptation (Eva Naessens, City of Ghent talked about the importance of localisation) and the cultural sector has a demonstrated key role in place-making as demonstrated by Glasgow's adaptation from being an industrial city.
- **A way to engage with Policies is to ask who is 'in' the Policy and who is 'outside'** the policy - who is it written about and who might have been forgotten (Maeve Stone, Dublin Embedded Artist).
- **City scale adaptation is focused on green and blue infrastructure** (highlighted in both Gothenburg and Ghent projects). This is an area in which some artists have specialised in col-

40 "Those charged with civic innovation or those who face intractable social problems and are hungry for new ideas are often the best prospects..." Frances Whitehead, 'Embedded Artist: Double Agent', in *Embedded Artists: Artists Outside the Art World - The World in Quest of Artists*, ed. Frédéric Martel and Hartmut Wickert (Zurich: Zurich University of the Arts, 2019), 18.

laborating with landscape architects as well as developing engagement (*Pre-figuring potential futures through direct action* and *Coupling cultural systems with social–ecological change* above).

- **Cities and property managers have maintenance as a key focus** (highlighted in Ghent and Gothenburg in particular).
- **Cities are under-resourced to meet the challenges of Climate Change** according to a recent UN Adaptation Gap Report 2020⁴¹ (highlighted by Kit England).
- **From a City perspective it is rare for artists to be involved in strategic development**, and the Cultural Sector needs to be better at working together in teams (Jens Thoms Ivarsson, Rain Gothenburg).
- **Dealing with difficult emotions and dilemmas alongside working with green/blue infrastructure and strengthening organisational resilience** are all roles for artists (identified by Anna Beswick of Sniffer during the Cultural Adaptations Conference). This was also developed in the Greentrack/Vooruit Art Centre 'Drift' project noted above.
- **Adaptation is all about the next two generations** (Gerry Wardell, Codema) and needs to be understood as intergenerational. Adaptive practices, e.g. vegetable growing, were the norm in the past (highlighted by Maeve Stone, Dublin Embedded Artist).

Attitudinal Shifts noted:

- **The most significant change may be pandemic related** - there is a wider understanding of what adaptation means.
- **Slow travel was widely recognised as beneficial** even though it was not always uncomplicated. The value of time to talk and reflect, as well as the shared experience of '10 trains and a bus replacement service' was very good for team spirit. It did raise issues in terms of institutional expectations of the time allocated to travel as well as the significantly higher costs compared to air travel.
- **Sustainability organisations were already curious about the potential contribution of the arts**. Initial project development may be on the basis of trust supported by third party funding.
- **The need to develop communication is key** and anything different from 'facts and figures' is really helpful (Eva Naessens, City of Ghent).

Who learns what about each other's issues, practices and priorities, and at what stage?

These are primarily Capacity Building Impacts:

- **Case Studies are valuable to sustainability professionals**. Both Creative Carbon Scotland's Library of Creative Sustainability and TILLT's portfolio are relevant to embedded artist projects.
- **Selection processes are moments when differences between arts/culture and sustainability organisations' ways of working are apparent** (highlighted by Gerry Wardell, Codema).
- **Selection processes are also good opportunities to gain understanding of the range of artists' practices** (noted by both Eva Naessens, City of Ghent, and Gerry Wardell, Codema).
- **Artists are already engaged with adaptation**, oriented towards working with the Sustainability sector.⁴² The larger challenge may be persuading arts and cultural organisations to engage with adaptation both in organisational practice and in programming.
- **Adaptation requires trust and a willingness to understand and work with the issue of failure**.⁴³ Exploring what success might mean and embracing shared ambition are both critical

41 United Nations Environment Programme, 'Adaptation Gap Report 2020' (Nairobi: United Nations Environment Programme, 2021), <https://www.unep.org/resources/adaptation-gap-report-2020>.

42 There are multiple examples highlighted in the Creative Carbon Scotland Library of Creative Sustainability <https://www.creativecarbonscotland.com/resources/library/>

43 The theme of failure is further developed in this project blog <https://www.culturaladaptations.com/resources/learning-from-failure-in-experimental-projects/>

parts of learning from different expertise. Criteria for success in adaptation are difficult because success is resilience - the avoidance of disruption and collapse.

- **Projects can put the onus onto artists to 'discover value'** and as a result let other partners 'off the hook'.

To what extent is the artist 'at the table' and what happens when they are?

Instrumental impacts include:

- **Futures scenarios articulated through stories and the role of creative practices are highlighted in Climate Ready Clyde's Draft Adaptation Strategy** (*Engaging Storytelling* and also *Exploring futures imaginatively* above).
- **Proposals for rain water harvesting and management were developed and incorporated into plans in two projects** (Ghent and Gothenburg).
- **Proposals for Board Development using a 'performative structure' drawing on therapy and narratives of change** were disrupted by the pandemic, but offer ways to develop Board level capacity and engagement with regional issues (Lesley Anne Rose, Glasgow Embedded Artist with Climate Ready Clyde).
- **Embedded artists means at the outset commissioning a 'thought process'** (Gerry Wardell, Codema), a 'question-led' approach (Anyuta Wiazemsky Snauwaert, Ghent Embedded Artist), that 'asking questions' was the most significant contribution (Kit England, Climate Ready Clyde) in the expectation that it will develop significant impacts.

Capacity building examples include:

- **TILLT's method and in particular the focus on process** (rather than project) management is a useful model.
- **Artists' place-based ways of working including walking, deep listening, memory mapping bring creative logic to bear on adaptation challenges** (all four artists used or proposed using walking to bring together different professionals and inhabitants, two projects used deep listening approaches). These address *Shifting awareness and openness to more-than-human worlds* (above).
- **Meetings always take the same format and often have the same people speaking** (Eva Naessens, City of Ghent). Taking meetings to new locations including site visits disrupts entrenched patterns (both Ulrika Jansson, Gothenburg Embedded Artist and Anyuta Wiazemsky Snauwaert, Ghent Embedded Artist used these approaches for place-based projects, and Lesley Anne Rose, Glasgow Embedded Artist, proposed to use them for Board development). These approaches are about (temporarily) shifting power relations.

Conceptual shifts include:

- **"Artists can act as 'problem finders' and the problems they find are gold"** (Mark O'Brien, axis Ballymun). Frances Whitehead also says this ⁴⁴, and it relates to Jens Thoms Ivarsson's point about identifying 'what the problem really is'. It was reiterated by Iain Munro, CEO Creative Scotland, during the conference in terms of trusting artists to lead the way. The other side of this was the way Ulrika Jansson, Gothenburg Embedded Artist, slowed down the process, stopping the project Engineer moving straight to the obvious solution.
- **Creative approaches to critical feedback could be helpful in consultation processes** eg Liz Lerman's Critical Feedback Process (highlighted by Anyuta Wiazemsky Snauwaert, Ghent Embedded Artist).
- **Artists can reorganise processes to create new opportunities** (highlighted by Anyuta Wiazemsky Snauwaert, Ghent Embedded Artist). City of Ghent accepted the Embedded Artist proposal that the Landscape architects for the project should be initially briefed by residents as part of a wider set of proposals to focus on participation and communications.
- **Design Thinking methods were highlighted as highly relevant to adaptation** (highlighted by Jens Thoms Ivarsson, Director of Rain Gothenburg).

44 Whitehead, 'Embedded Artist: Double Agent', 17.

5. REFLECTIONS & RECOMMENDATIONS

1. Recommendation: There is a need for Strategic partnerships between adaptation organisations and the cultural sector

- a. Both sectors have distinct terminologies and priorities - to fully realise the benefits of partnerships, regular contact and 'translation' of policies for the different audiences will be critical. Memorandums of Understanding (MOUs) offer a useful way to structure regular interaction including:
 - i. Highlighting innovation and good practice
 - ii. Summarising policy initiatives for the other sector,
 - iii. Ensuring case studies are relevant to different needs and interests
- b. Shared evaluation criteria need to be developed which meet the requirements of both sectors recognising the complexity and duration of adaptation work
- c. Creative logic offers an organising rationale for partnership working, but it requires additional research to fully unpack the values and modalities.
- d. Case studies are critical to the scaling up of partnership working. These need to be structured to meet the needs of both sectors and widely disseminated
- e. Funders need to recognise the benefits as well as the challenges of cross sectoral process-based work
 - i. The success criteria of both sectors need to be recognised
 - ii. Funders in both sectors need to work together. Creative Scotland, Creative Europe or equivalent funding organisations can fund innovative artists' practice, and the sustainability sector can fund long term creative engagement in adaptation processes.
 - iii. Funders can act as knowledge exchange intermediaries, drawing attention to the benefits and expectations of cross-sectoral working

The Cultural Adaptations project demonstrated that there is significant complementarity between the Cultural and Sustainability sectors particularly in relation to adaptation. There are also significant differences and both sectors need to understand each others' priorities and ways of working. The selection process for artists provided an important point where differences between the two sectors became apparent. Another point where this difference was highlighted was in the policy documents which formed the initial focus for two projects. Here the Cultural sector and artists' concern with who is included and excluded demonstrated the benefits of innovative approaches to the adaptation agenda.

Strategic partnerships between the cultural and sustainability sectors will be well placed to address the short term deliverables and the longer term impacts.

2. Recommendation: There is a significant opportunity for arts and cultural organisations to engage with the adaptation agenda

- a. Creative logic is an important way of understanding and articulating the role of arts & cultural organisations and artists
- b. Creative logic offers an important alternative when 'business as usual' isn't working
- c. The 'embedded artist' offers a specific model for bringing creative logic to bear on the challenges of adaptation
- d. Creative approaches require a commitment to an openness and access to the right people that enables the artist to scope out the issues and develop an appropriate proposal.
- e. Embedded artists are different to and complementary with commissions where the output is defined in advance. Embedded artist projects start with a definition of the issue and/or context but not the output. This can be seen in the Artist Placement Group approach (noted above).
- f. Embedded artists can be positioned with sustainability organisations as in the Cultural Adaptations pilots, and can be positioned with communities and settlements
- g. Timescales and success criteria are both challenges with in particular green/blue infrastructure projects very often having timescales measured in years. Adaptation projects can also be difficult to evaluate as success in many instances is the avoidance of disruptions
- h. There is a requirement for capacity building in both the cultural sector and the sustainability sector to realise this opportunity. TILLT's focus on process management is key and is also articulated in Creative Carbon Scotland's culture/SHIFT Methodology.

The Cultural Adaptations project demonstrated the contribution of the cultural sector and the role of the embedded artist through the four pilot projects. These engaged with a range of specific adaptation challenges and highlighted the different forms of input that the cultural sector and artists can make. This ranged from working with property developers on rainwater harvesting to supporting the board of a city region adaptation initiative to think differently; from working with the City to innovate on engaging inhabitants in the process of adapting public greenspaces to be more resilient to stormwater through to refocusing adaptation strategy to 'see' the older population as key stakeholders.

Cultural Adaptations confirmed that involving the cultural sector and arts with adaptation challenges requires specific approaches demonstrated by specialist organisations such as TILLT who have been working on cross sectoral projects for many years. Key characteristics of work led by specialist organisations are identified above, and include openness to doing things differently, working across departments and having access to key personnel, a focus on process and not on 'making art'.

Some adaptation challenges, particularly relating to green/blue infrastructures, are addressed by approaches in public art where the embedded artist is equivalent to the 'lead artist'. However the range of adaptation challenges including addressing difficult conversations around managed retreat, as well as supporting regional scale cross sectoral developments, mean that different arts practices (performance, creative writing, visual arts and design) will be appropriate in different contexts. The cultural sector needs to develop a cross-artform approach.

3. Recommendation: The creative sector has significant potential in getting societal buy-in for the adaptation agenda, especially as 'difficult conversations' or intractable problems come to the fore as climate threats intensify.

It is broadly acknowledged that there is a need for more support among the public for the climate change adaptation agenda, and it is increasingly recognised by adaptation and sustainability organisations that the cultural sector has a role to play in building such support. The scholarly literature on climate change adaptation has in recent years paid more attention to the idea of climate adaptation as a transformative activity, where 'adapting' to climate change does not mean simply reducing exposure to intensifying risks, but rather adopting new forms of societal organisation and decision-making⁴⁵. It is also the case that increasing policy attention is being turned towards 'difficult conversations' such as loss and damage⁴⁶ and managed retreat⁴⁷, which may previously have been seen as being too ethically or politically contentious to be discussed openly within policy and planning. What is perhaps challenging in this regard is that whereas climate change mitigation discussions can often be reduced to energy production and electricity consumption, thinking about climate change adaptation may require fuller consideration of complexity, systems and ethics.

What was apparent from the *Cultural Adaptations* cases was that the adaptation and sustainability organisations involved all recognised the value of the cultural sector in facilitating these more 'difficult conversations' or enabling thinking on how adaptation may transform society. This was apparent in the case of Gothenburg, for example, where the embedding of design thinking into stormwater management becomes a starting point for considering different ways of organising cultural activities in an unpredictable future; and in Glasgow, where Creative Carbon Scotland has become established as a critical core partner in realising the city region's adaptation vision. For localities where there is not such a long-established tradition of cultural- and sustainability organisations collaborating on climate issues, project-based collaboration of the kind initiated in *Cultural Adaptations* can be a useful way to demonstrate the potential of the cultural sector to enable new and more optimal ways of working. In Ghent, for instance (and also Gothenburg), having embedded artists use their expertise to lead activities 'on site' enabled new ways of thinking through and making sense of green-blue infrastructure that have the potential to transcend competing demands that may not so easily be resolved through traditional planning processes.

Alongside the blue-green infrastructure agenda that was visible across a number of the *Cultural Adaptations* projects, future activity may wish to explore how the cultural sector can help to tackle some of the more ethically contentious adaptation decisions in a locality head-on.

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- 45 Vanesa Castán Broto, 'Climate Change Politics and the Urban Contexts of Messy Governmentalities', *Territory, Politics, Governance* 8, no. 2 (14 March 2020): 241–58, <https://doi.org/10.1080/21622671.2019.1632220>; Revi et al., 'Towards Transformative Adaptation in Cities'.
- 46 Lisa Vanhala, Michai Robertson, and Elisa Calliari, 'The Knowledge Politics of Climate Change Loss and Damage across Scales of Governance', *Environmental Politics* 30, no. 1–2 (23 February 2021): 141–60, <https://doi.org/10.1080/09644016.2020.1840227>.
- 47 R. Dean Hardy, Richard A. Milligan, and Nik Heynen, 'Racial Coastal Formation: The Environmental Injustice of Colorblind Adaptation Planning for Sea-Level Rise', *Geoforum* 87 (December 2017): 62–72, <https://doi.org/10.1016/j.geoforum.2017.10.005>.

4. Recommendation: Building trust can be as valuable an outcome as the intervention itself, especially if there is limited history in the locality of collaboration between the cultural sector and adaptation or sustainability organisations. The significance of 'quick wins' or incremental progress should never be underestimated, even in the face of rhetoric of urgency on climate.

Not all adaptation and sustainability organisations will be open from the outset to more experimental ways of working, and in some cases aiming for 'quick wins' may be an important part of trust-building for longer-term transformative collaborations. It is often organisations working at the local/regional level, especially local governments, that are tasked with putting adaptation into practice via processes such as land use, urban planning, and environmental protection. However, such organisations often work in siloed and hierarchical ways, which can constrain opportunities for those working outside of environmental sectors to engage with new approaches to working⁴⁸. There also remains a tendency in adaptation and resilience practice to focus on learning from exemplar cases, to the detriment of understanding the challenges faced by smaller and/or more peripheral city regions⁴⁹. In other words, whilst the need for public support for the adaptation agenda is well recognised, not all adaptation or sustainability organisations may have the flexibility or the institutional appetite to adopt ways of working perceived as more experimental.

In this regard, *Cultural Adaptations* illustrated that incremental progress and aiming for 'quick wins' can go a long way to building the relations of trust between cultural practitioners and adaptation- or sustainability organisations. This reflects the idea that trust can be built and maintained by demonstrating competence and trustworthiness⁵⁰; and hence that quick-wins may be valuable ways of demonstrating trustworthiness in practice and creating the conditions of trust required for further collaborative working. This was evident in the blue-green infrastructure activities undertaken in both Ghent and Gothenburg. The final physical interventions within the blue-green infrastructure as the result of embedded artist activity were, in both cities, still constrained by the need to manage stormwater appropriately. However, the activities undertaken along the way by the embedded artists in both cities arguably showed the adaptation organisations and developers in each city a new way to handle feedback, and a more discursive way to solve urban adaptation 'problems' than planning processes grounded in a rigid process of negotiating comments, objections and recommendations. Moreover, the example of Dublin shows that for a context where there is perhaps less history of direct collaboration between the cultural sector and sustainability organisations on climate adaptation per se, the process of working together, facilitating dialogues among practitioners and establishing conditions of trust for future collaboration is in itself a meaningful and valuable outcome.

It is of course vital that the role of the cultural sector in adaptation is not reduced to visualising 'the science' or to facilitating public engagement once the key technical decisions have been made. However, it is also true that incremental progress and 'quick wins' can be important in demonstrating the value of the cultural sector to adaptation, and crucially to establishing the conditions of trust for longer-term and more transformative practice.

48 Alister Scott et al., 'Mainstreaming Ecosystem Science in Spatial Planning Practice: Exploiting a Hybrid Opportunity Space', *Land Use Policy* 70 (January 2018): 232–46, <https://doi.org/10.1016/j.landuse-pol.2017.10.002>.

49 Dave Kendal et al., 'City-Size Bias in Knowledge on the Effects of Urban Nature on People and Biodiversity', *Environmental Research Letters* 15, no. 12 (5 December 2020): 124035, <https://doi.org/10.1088/1748-9326/abc5e4>.

50 Russell Hardin, *Trust* (Cambridge, UK: Polity, 2006).

5. Recommendation: Explore the strategic implications of connecting the cultural and sustainability sectors at a European level.

The increased focus on social cultural dimensions highlighted in *A Climate Resilient Europe* and the engagement of national agencies (Irish Government Departments of Energy, Climate & Transport and Arts & Culture, Creative Ireland, Creative Scotland), as well as regional/city authorities (Climate Ready Clyde, Dublin, Ghent and Gothenburg) indicates that there is a need to convene a wider policy focused discussion on the role of culture in climate change adaptation.

A workshop hosted by Creative Europe could bring together national, regional and city parties to discuss how the outcomes and learnings from Cultural Adaptations may be linked into activity at the interface between the cultural sector and the adaptation sector across Europe more widely. As is outlined above, Cultural Adaptations has shown that adaptation and sustainability organisations broadly recognise the need for public support for the adaptation agenda, especially as the impacts of climate change become more profound. The four Cultural Adaptations cities have also demonstrated the value that embedded artists can bring in imagining and enacting new business models for the cultural sector in ways that are adaptive to climate change. However, a key question is how to encourage this kind of transformative working across the cultural and adaptation sectors more widely. We are aware that the cases we have here are to an extent self-selecting and in some cases pioneers of collaboration between cultural and adaptation organisations, but also believe the partners represent a breadth of organisational characteristics who have much to share with Europe. We would therefore welcome an opportunity to discuss with Creative Europe, perhaps in workshop or roundtable format, how we may take forward the learnings from Cultural Adaptations. Within this process, we would be especially enthusiastic to engage with agenda-setting organisations working at the European level, in both the cultural and adaptation spheres, who may be able to initiate a step-change in the adoption of the modes of working which have been demonstrated in Cultural Adaptations.

Key agenda items at such an event could include:

- the wider role of the arts and cultural sector in climate change mitigation, adaptation and justice challenges
- Learning, knowledge sharing and rollout beyond pioneer or exemplar cities and regions;
- Approaches for engagement with climate and sustainability organisations working at the science-policy-practice interface;
- Slow travel and the implications for cultural sector programming and funding⁵¹
- Role of specialist arts & cultural organisations and the potential for growing skills and capacities in the mainstream cultural sector...

51 See CCS Director blog on the challenges and benefits of slow travel <https://www.culturaladaptations.com/resources/project-blog-the-pain-and-pleasure-of-long-distance-train-travel/>

6. BIBLIOGRAPHY

- Alderson, Amanda, Cecelia Cmielewski, and Michelle Francis. *SymbioticA: Adaption*. Perth: University of Western Australia, 2013.
- Castán Broto, Vanesa. 'Climate Change Politics and the Urban Contexts of Messy Governmentalities'. *Territory, Politics, Governance* 8, no. 2 (14 March 2020): 241–58. <https://doi.org/10.1080/21622671.2019.1632220>.
- Dator J. 'Alternative Futures at the Manoa School'. In: *Jim Dator: A Noticer in Time*. Anticipation Science, vol 5. Springer: Cham, 2019. https://doi.org/10.1007/978-3-030-17387-6_5.
- Defra. *The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting*. London: Defra, 2018.
- Douglas, Anne. "'...The Eye of the Stranger": A Practice Led Research Perspective on the Embedded Artist'. In *Embedded Artists: Artists Outside the Art World - The World in Quest of Artists*, edited by Frédéric Martel and Hartmut Wickert. Zurich: Zurich University of the Arts, 2019.
- Douglas, Anne, and Chris Fremantle. *The Artist as Leader: Research Report*. Aberdeen: Robert Gordon University, 2009. <http://hdl.handle.net/10059/405>.
- Edwards, David M., and Laura R. Meagher. 'A Framework to Evaluate the Impacts of Research on Policy and Practice: A Forestry Pilot Study'. *Forest Policy and Economics* 114 (May 2020): 101975. <https://doi.org/10.1016/j.forpol.2019.101975>.
- European Commission. Directorate General for Research and Innovation. *A Climate Resilient Europe: Prepare Europe for Climate Disruptions and Accelerate the Transformation to a Climate Resilient and Just Europe by 2030*. Luxembourg: European Commission Publications Office, 2020. <https://data.europa.eu/doi/10.2777/69766>.
- Fisher, Laura, Lucas Ihlein, and Vickie Zhang. 'An Artist, a Farmer and a Scientist Walk into a Bar'. Kandos School of Cultural Adaptation, 2021. <https://www.ksca.land/resources>.
- Fremantle, Chris. 'Greenhouse Britain: Losing Ground, Gaining Wisdom (2006-09): Case Study'. Cardiff, UK, 2018. <https://rgu-repository.worktribe.com/output/249255>.
- Fremantle, Chris, Melehat Nil Gulari, Susan Marie Fairburn, Leigh-Anne Hepburn, Gail Valentine, and Laura Meagher. 'Impact by Design: Evaluating Knowledge Exchange as a Lens for Evaluating the Wider Impacts of a Design-Led Business Support Programme.', *Proceedings of the 20th Design Management Institute(DMI): academic design management conference (DMI:ADMC): inflection point: design research meets design practice* (2016): 405-430.
- Galafassi, Diego, Sacha Kagan, Manjana Milkoreit, Maria Heras, Chantal Bilodeau, Sadhbh Juarez Bourke, Andrew Merrie, Leonie Guerrero, Guðrún Pétursdóttir, and Joan David Tàbara. 'Raising the Temperature': The Arts in a Warming Planet'. *Current Opinion in Environmental Sustainability* 31 (2018): 71–79.
- Hardin, Russell. *Trust*. Cambridge, UK: Polity, 2006.
- Hardy, R. Dean, Richard A. Milligan, and Nik Heynen. 'Racial Coastal Formation: The Environmental Injustice of Colorblind Adaptation Planning for Sea-Level Rise'. *Geoforum* 87 (December

2017): 62–72. <https://doi.org/10.1016/j.geoforum.2017.10.005>.

Harrison, Helen Mayer, and Newton Harrison. 'Seventh Lagoon: The Ring of Water'. *Structure and Dynamics: EJournal of Anthropological and Related Sciences*, 2006. <https://escholarship.org/uc/item/45z287n2#main>.

Hughes, Sara. 'A Meta-Analysis of Urban Climate Change Adaptation Planning in the U.S.' *Urban Climate* 14 (December 2015): 17–29. <https://doi.org/10.1016/j.uclim.2015.06.003>.

Kendal, Dave, Monika Egerer, Jason A Byrne, Penelope J Jones, Pauline Marsh, Caragh G Threlfall, Gabriella Allegretto, et al. 'City-Size Bias in Knowledge on the Effects of Urban Nature on People and Biodiversity'. *Environmental Research Letters* 15, no. 12 (5 December 2020): 124035. <https://doi.org/10.1088/1748-9326/abc5e4>.

Leck, Hayley, and Debra Roberts. 'What Lies beneath: Understanding the Invisible Aspects of Municipal Climate Change Governance'. *Current Opinion in Environmental Sustainability* 13 (April 2015): 61–67. <https://doi.org/10.1016/j.cosust.2015.02.004>.

Lindley, Sarah, John O'Neill, Joseph Kandeh, Nigel Lawson, Richard Christian, and Martin O'Neill. 'Climate Change, Justice and Vulnerability'. York: Joseph Rowntree Foundation, 2011. <https://www.jrf.org.uk/report/climate-change-justice-and-vulnerability>.

Mabon, Leslie, and Wan-Yu Shih. 'Urban Greenspace as a Climate Change Adaptation Strategy for Subtropical Asian Cities: A Comparative Study across Cities in Three Countries'. *Global Environmental Change* 68 (May 2021): 102248. <https://doi.org/10.1016/j.gloenvcha.2021.102248>.

Mabon, Leslie, and SNIFFER. 'Engaging with the Community on Climate Change Adaptation through Cultural Practice'. Edinburgh: Adaptation Scotland, 2017. https://www.adaptationscotland.org.uk/application/files/4415/1075/5996/Case_Study_Aberdeen_Arts_Festival_FINAL.pdf.

MacDonald, Adriane, Amelia Clarke, Eduardo Ordonez-Ponce, Ziqi Chai, and Jordan Andreasen. 'Sustainability Managers: The Job Roles and Competencies of Building Sustainable Cities and Communities'. *Public Performance & Management Review* 43, no. 6 (1 November 2020): 1413–44. <https://doi.org/10.1080/15309576.2020.1803091>.

Manyena, Bernard, Geoff O'Brien, Phil O'Keefe, and Joanne Rose. 'Disaster Resilience: A Bounce Back or Bounce Forward Ability?' *Local Environment* 16, no. 5 (May 2011): 417–24. <https://doi.org/10.1080/13549839.2011.583049>.

Mosher, Eve. 'HighWaterLine – Visualizing Climate Change'. HighWaterLine. Accessed 20 August 2021. <https://highwaterline.org/>.

Nelson, Donald R. 'Adaptation and Resilience: Responding to a Changing Climate'. *WIREs Climate Change* 2, no. 1 (January 2011): 113–20. <https://doi.org/10.1002/wcc.91>.

Perez Salgado, Francisca, Dina Abbott, and Gordon Wilson. 'Dimensions of Professional Competences for Interventions towards Sustainability'. *Sustainability Science* 13, no. 1 (January 2018): 163–77. <https://doi.org/10.1007/s11625-017-0439-z>.

Price, Jon. 'The Discourse of Cultural Leadership'. PhD thesis., Robert Gordon University, 2016.

Puppim de Oliveira, Jose Antonio. 'The Implementation of Climate Change Related Policies at the Subnational Level: An Analysis of Three Countries'. *Habitat International* 33, no. 3 (July 2009): 253–59. <https://doi.org/10.1016/j.habitatint.2008.10.006>.

Revi, Aromar, David Satterthwaite, Fernando Aragón-Durand, Jan Corfee-Morlot, Robert B R Kiunsi, Mark Pelling, Debra Roberts, William Solecki, Sumetee Pahwa Gajjar, and Alice Sverdlík. 'Towards Transformative Adaptation in Cities: The IPCC's Fifth Assessment'. *Environment and Urbanization* 26, no. 1 (April 2014): 11–28. <https://doi.org/10.1177/0956247814523539>.

- Scott, Alister, Claudia Carter, Michael Hardman, Nick Grayson, and Tim Slaney. 'Mainstreaming Ecosystem Science in Spatial Planning Practice: Exploiting a Hybrid Opportunity Space'. *Land Use Policy* 70 (January 2018): 232–46. <https://doi.org/10.1016/j.landusepol.2017.10.002>.
- Scottish Government. 'Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024'. Edinburgh: Scottish Government, 2019. <http://www.nls.uk/scotgov/2019/205535668.23.pdf>.
- Steveni, Barbara, and Emily Pringle. 'Organisation and Imagination'. /Seconds. 8 (April 2008). <https://www.slashseconds.org/issues/002/004/articles/bsteveni2/index.php>.
- Tyler, Stephen, and Marcus Moench. 'A Framework for Urban Climate Resilience'. *Climate and Development* 4, no. 4 (October 2012): 311–26. <https://doi.org/10.1080/17565529.2012.745389>.
- UNFCCC. 'New Elements and Dimensions of Adaptation under the Paris Agreement (Article 7) | UNFCCC'. Accessed 20 August 2021. <https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/new-elements-and-dimensions-of-adaptation-under-the-paris-agreement-article-7#:~:text=The%20Paris%20Agreement%20aims%20to,change%20and%20foster%20climate%20resilience>.
- United Nations Environment Programme. 'Adaptation Gap Report 2020'. Nairobi: United Nations Environment Programme, 2021. <https://www.unep.org/resources/adaptation-gap-report-2020>.
- Vanderlinden, Jean-Paul, Juan Baztan, Omer Chouinard, Mateo Cordier, Charlotte Da Cunha, Jean-Michel Huctin, Alioune Kane, et al. 'Meaning in the Face of Changing Climate Risks: Connecting Agency, Sensemaking and Narratives of Change through Transdisciplinary Research'. *Climate Risk Management* 29 (2020): 100224. <https://doi.org/10.1016/j.crm.2020.100224>.
- Vanhala, Lisa, Michai Robertson, and Elisa Calliari. 'The Knowledge Politics of Climate Change Loss and Damage across Scales of Governance'. *Environmental Politics* 30, no. 1–2 (23 February 2021): 141–60. <https://doi.org/10.1080/09644016.2020.1840227>.
- Whitehead, Frances. 'Embedded Artist: Double Agent'. In *Embedded Artists: Artists Outside the Art World - The World in Quest of Artists*, edited by Frédéric Martel and Hartmut Wickert. Zurich: Zurich University of the Arts, 2019.
- . 'What Do Artists Know?' Artetal Studio, 2006. http://franceswhitehead.com/content/4-think/fwhitehead_what-do-artists-know.pdf.
- Wiek, Arnim, Lauren Withycombe, and Charles L. Redman. 'Key Competencies in Sustainability: A Reference Framework for Academic Program Development'. *Sustainability Science* 6, no. 2 (July 2011): 203–18. <https://doi.org/10.1007/s11625-011-0132-6>.



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Co-funded by the
Creative Europe Programme
of the European Union



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