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Abstract:	Effectively addressing climate change and associated environmental challenges is now chiefly about action, implementation and social change. Global environmental research and policy frameworks have begun to emphasise the importance of culture and multi-sector partnerships for urban sustainability governance. However, there has been little explicit attention paid to religion and belief as ubiquitous urban socio-cultural phenomena. This article outlines literature on the intersection of and climate change in the context of cities, before expanding on key themes presented in the most recent IPCC reports. Religion is shown to offer both opportunities and barriers for effective urban climate adaptation and mitigation. A new model of religious-civic partnership is then offered as a framework for guiding climate policy implementation. This model presents religion as vital to shaping the 'value landscape' of cities and calls for collaborative action based on identifying, enriching and mobilising shared values.	

Engaging faith for a sustainable urban future



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1 **1. Introduction**

2 Despite rapid growth in societal recognition of the urgency of the climate crisis, it has become acutely evident that existing responses from government policy, business leadership and 3 4 technological innovation remain grossly inadequate to keep the earth from tipping into climate breakdown (Ripple et al., 2023). In response to the yawning gap between current levels of 5 ambition and necessary climate action, scholars are advancing an agenda of transformation, 6 7 which includes practical behaviours and economic patterns, but also institutional structures, social norms, cultural dynamics and worldviews (Abson et al., 2017; Otto et al., 2020; O'Brien, 8 9 2018; Vouvoulis et al., 2022). The IPCC Sixth Assessment Report emphasises the crucial role 10 cities play in mitigating and adapting to climate change, given they are home to the majority 11 of humanity and contain a critical mass of resources, investment, culture and ideas that can 12 be applied to climate justice and transition (see also Solecki et al. 2018, Revi et al. 2014).

13 However, one key dimension of culture currently under-recognised in urban climate change scholarship and policy is religion. Alternative sources of knowledge, wisdom and direction will 14 15 be essential for the move from current (unsustainable) states to desired (sustainable) states (Voulvolis and Burgman, 2019). However, religious views are often reduced or publicly 16 dismissed, thus sidelining of their unique contributions and perspectives on urban 17 sustainability (Sexton & Pincetl, 2022). This is despite projections that by 2050, 68% of the 18 19 world's population will urban, and citizens affiliating with a religious identity will grow even 20 higher than the current figure of 84% (Pew Research 2022). The invisibilisation of religion in climate governance is evident even in locations of highest levels of religious affiliation and 21 22 climate vulnerability, such as the Pacific Islands, where adaptation initiatives are justified via 23 rational scientific logic (Luetz & Nunn, 2020) rather than by locally accepted meanings of climate change shaped strongly by interpretation of Christian myths and narratives (Fair, 24 2018). Religious identities, structures, trends and dynamics vary greatly between cities as a 25 26 result of socio-political-geographical legacies: the main difference being cities in the global South, where religion is more obviously imbricated in material urban structures and 27 governance systems than the urban North (Becker et al. 2014). However, the role of religion 28 29 in shaping urban environments globally has been distorted and under-reported by a normative Western colonial and secular gaze predicated on simplistic narratives of modernity and religion 30 31 (Yountae, 2020, Ong and Roy, 2011). Whether in the Global North or the Global South, there 32 is an urgent need for urban climate change discourse and policy to attend to the voices and experiences of billions of global citizens who identify with a religious affiliation, as well as the 33 deep meanings, ontological assumptions, existential feelings and moral ideals present within 34 35 individuals, groups and broader society (Stacey, 2024).

36 Recent scholarship on the governance of urban climate change identifies the importance of 37 polycentric structures, multi-actor networks and social relations among state and non-state 38 actors (Munoz-Erickson et al., 2016; Bulkeley 2010, 2014). Accordingly, cities are imagined as complex social-ecological-technical systems (Bai et al., 2016; McPhearson et al., 2022), 39 40 yet there has been surprisingly little work to conceptualise the place of religion within these theoretical frameworks. One exception is Koehrsen (2018), who presented the actions of 41 religious actors through the lens of the multi-level perspective on sustainability transitions 42 (Geels, 2002, Geels and Schot, 2007), This conceptualises religious agency within institutions 43 44 and broader society as experimentation (e.g. eco-theology as experimentation), upscaling 45 (dissemination of pro-environmental values) and regime support (embracing sustainabilityaligned technologies, practices and worldviews). Civil society is increasingly seen as complex 46 yet crucial to urban sustainability transitions, potentially operating as a driver of positive 47 48 change, a benign influence or a sector at risk of being coopted by powerful incumbent political interests (Frantzeskaki et al., 2016). However, the features of religious organisations as 49 distinct components of civil society have received little attention. 50

The picture painted in the literature of the relationship between religion and the wider 51 52 environment is a complex one. Some scholars point to pro-environmental teachings within 53 world religions (Grimm & Tucker 2014), and the visible engagement of religious leaders in 54 environmental fora (Schaefer, 2016) as evidence of the "greening of religion" and thus the 55 latent potential for religious action (Hitzhusen & Tucker, 2013; Chaplin, 2016). Others highlight 56 religious barriers to pro-environmental action, such as apocalyptic or domination beliefs (Skrimshire, 2014), as part of a complicated milieu of religious responses to the environment 57 (Veldman et al., 2014; Koehrsen, 2023; Taylor et al., 2016). These include being shaped by 58 59 broader social and political pressures (Koehrsen & Huber, 2021) or paradoxical psychosocial responses such as a positive relationship with environmental interest alongside a negative 60 relationship with concern with environmental threats (Michaels et al., 2021). Others observe a 61 polarised response to the combination of scientific information and pro-environmental religious 62 teaching such as Pope Francis' Laudato Si (Li et al., 2016; Wilkins, 2022). Thus, rather than 63 64 sidelining religious actors from climate governance, there is a need to engage this complexity in developing shared responses to climate mitigation and adaptation challenges. 65

This article addresses this need by tracing the existing contours of the emerging nexus between religion and belief, the urban and the environment through bringing in perspectives from social theory, human geography and philosophy. Religion is contested and notoriously difficult to define. Some scholars take an inclusive approach based on function (e.g. any systems of beliefs or practices) whilst others adopt more exclusive definitions centred on precise criteria (e.g. requirements of beliefs in a supernational being or god) (Aldridge, 2007). 72 Religious affiliation is also highly complex, involving individual beliefs and identities that are 73 held within aggregated communities, denominations and affiliated organisations (Kidwell, 74 2020), along with people who identify as religious (or spiritual) but are not associated with a formal religious organisation. We therefore adopt a pragmatic definition of religion here; 75 76 namely those actors (individuals, groups, organisations) who identify as religious in any way, and typically, but not exclusively, are affiliated with a religious organisation. To advance how 77 urban climate governance may attend more explicitly to religious groups and individuals the 78 79 article then analyses two applied themes of the latest IPCC report: Working Group II (Impacts, 80 Adaptation and Vulnerability) and Working Group III (Mitigation of Climate Change) through the lens of O'Brien's (2018) three spheres of transformation. 81

82 The final section addresses the theme of implementation by means of a new conceptual framework. Religious actors differ from secular actors in many ways, not least the radically 83 alternative cosmologies, epistemologies and axiologies they often espouse (Jenkins et al., 84 85 2016). As such, rather than mapping religion onto existing urban sustainability frameworks (sensu Koehrsen 2018) our conceptual framework advanced focusses on values (c.f. lves & 86 Kidwell, 2019). Additionally, religious actors also have an important role as 'intermediaries', 87 connecting public authorities, community groups and grassroots assemblages (Hague & 88 89 Bomberg, 2022) thus making them indispensable in developing transformative partnerships 90 for urban climate action. Our framework proposes a practical way forward for both religious 91 and secular actors to advance urban climate governance, and more strategically leverage the 92 potential of religion and belief by revealing, working with and enriching shared values through multi-actor partnership. 93

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2. Conceptualising the intersection of urbanisation, religion and climate

Sustainable global urban futures will increasingly rely on the extent to which we can 96 understand what Becker et al. (2014) refer to as the 'urban-religious configuration'. Birgit Meyer 97 98 suggests this configuration prompts two key questions: 'how do new religions transform urban 99 space? And conversely how do "cities generate specific urban forms of religion"...?' (Meyer, 100 2014: 595). Rapidly expanding geographies of religion and urban sociology disciplines are 101 responding to these questions (see Kong et al., 2024). Previous understandings of urban-102 religious configurations include ideas of the postsecular city (Beaumont and Baker, 2011; Cloke et al., 2019) which highlights political, activist and ethical rapprochements between faith-103 based and secular actors actively discovering in-common values that overcome divides and 104 105 sustain shared public engagement. It is most evident in the complex religious landscapes of the global North, marked by disaffiliation from aspects of organised religion (particularly 106

107 Christianity), increasing categories of unbelief (Lee, 2015), and growth in spiritual values 108 among those 'disenchanted' with traditional religion (Woodhead and Catto, 2012).

109 A more material concept emerging from global South urbanism is 'worlding', (Roy and Ong, 2011). It describes the "heterogeneous spatialising practices" that are created when practices 110 from the world (global cultural ideas and trends) encounter the city, but then are released back 111 112 in altered form, as 'a non-ideological formulation of worlding as situated in everyday practices that shape alternative social visions and configurations' (Becker et al., 2014: 27). These 113 practices specifically include aspirations and imaginations that are religiously informed, and 114 which motivate faith groups to create alternative urban 'worlds'. They achieve this by bringing 115 116 into being new structures and experiences of living together in the city that address these aspirations via 'urban-religious forms of circulation and community building, modelling 117 practices...borrowing and appropriating...identities... or as the expansion of religious-political 118 and economic power' (Becker et al. 2014: 27-8). 119

In this context of the co-construction of religion and cities (Day & Edwards, 2021), we propose 120 four ways of conceptualising the interaction between religious and urban systems, 121 summarised as physicalities, practices, prophetic imagination and policy (Table 1). The first 122 emphasises how religion and belief shapes the physical and material structure and function of 123 124 a city (Meyer, 2014). This materiality is expressed in the visible and physical planning of 125 buildings and spaces of worship and social congregation, as well as the social capital provided via the physical presence of religious organisations. This may be, for example, in the form of 126 127 a small community food project repurposing land use around a church. The second 128 contribution of religion and belief is the public and outward-facing *practices* of religious groups within urban society, historically linked to poverty, homelessness, asylum seeker and migrant 129 130 support, health and social care, addiction services, and youth and family support. Initiatives and partnerships focused on environmental issues are now coming to the fore especially in 131 projects aimed at 'greening' religious assets such as buildings, land and financial investments. 132

The third influence is what we term prophetic imagination, present in all religious traditions 133 and which critiques existing socio-economic structures from the perspective of a perceived 134 135 divine vantage point, providing an impetus for enacting social justice. There is a clear genealogy linking for example the intersection of Black identity and religion from the Civil 136 Rights movement in the 60s to present day global activist movements such as Black Lives 137 Matter (Johnson, 2021; Gray, 2019). In a similar way, religiously-motivated environmental 138 139 activism is increasingly becoming evident. Extinction Rebellion – the first global environmental protest movement to openly acknowledge the moral power of spiritual and religious 140 dimensions of protest in its language (Joyce, 2020) - encouraged a "bubbling up" of 141

142 postsecularity (Cloke et al., 2019: 3) through welcoming practices of meditation and prayer at 143 its gatherings, and promoting high visibility of faith spaces at its events (such as Faith Bridges), 144 most notably Christian, Buddhist, Islamic and Jewish support (Skrimshire, 2022). Finally, there is a growing *policy* discourse around the importance of developing more strategic partnerships 145 146 at scale between faith-based and secular actors to deal with existential threats facing urban communities. Recent UK based research has highlighted effective partnerships across faith-147 based and local authority (i.e. secular) actors mobilised in response to the COVID-19 148 pandemic which eschewed traditional hierarchies of expertise, protocols and technocratic 149 150 language (Baker and Timms, 2020, 2022). However scholarship has also revealed the internal structures of religious groups that can stifle a 'greening' imagination at a grassroots or political 151 152 level (Koehrsen et al., 2022).

The following sections explore key findings and priorities from the IPCC's Sixth Assessment 153 Report as they pertain to climate adaptation, mitigation and implementation. The lens of the 154 155 Three Spheres of Transformation (O'Brien, 2018) is used to translate the above four models of religious interactions with cities on climate change. First, the practical sphere of 156 transformation, defined by O'Brien (2018: 155) as "specific actions, interventions, strategies 157 and behaviours" corresponds to both the materiality of religion in cities and the practices that 158 159 stem from religious beliefs, values and worldviews. Second, the political sphere, defined as 160 "systems and structures that facilitate or constrain practical responses to climate change" (p. 161 156) corresponds to the prophetic imagination that faith groups draw upon in enacting social 162 and environmental justice. Finally, the deepest and most transformative sphere - the personal - is defined by O'Brien as the "beliefs, values, worldviews and paradigms that influence how 163 people perceive, define or constitute systems and structures, as well as their behaviours and 164 practices" (O'Brien, 2018: 156). It is evident therefore that religion represents a distinctly 165 powerful contribution towards urban transformation through its role in coalescing social 166 structures and identities and drawing on them to motivate action in political and practical 167 domains. We now highlight how this framework of transformation might be applied to the 168 contribution of religious actors to the priorities of the Sixth IPCC Assessment Report. 169

170 Table 1: Typology of religious responses to climate change in urban contexts.

	Description	Application
Physicalities	Religion and belief interact tangibly with physical urban contexts. Relevant theories include New Materialism (Bennett 2010), Actor Network Theory (Latour 2005) and Assemblage thinking (Delanda, 2006, McFarlane 2011).	 Religious communities' provision of capital for disaster relief following environmental capacity (Pant et al. 2018). Anchor institutions for local resilience in context of climate disaster in terms of provision of healthcare, shelter, education and mental wellbeing (including recovery from trauma) (Lipsky, 2011, Glaab and Fuchs, 2018). Notions of sacredness enable protection of eco-sensitive urban areas (Tatay & Merino, 2023, Jaganmohan et al. 2018, Ormsbury, 2021). Carbon sequestration on land owned by FBOs (De Lacy & Shackleton, 2017; Gopal et al. 2018).
Practices	Religious individuals and organisations engage in environmentally-relevant behaviours and practices. Theoretical perspectives include sustainability transitions and environmental behaviour theory applied to religious contexts (Koehrsen, 2015, 2018; Gottlieb, 2006; Veldman 2013), as well as sociological perspectives on material practices arising from dispositions of 'faithful' citizens (Bourdieu, 1983, Baker and Power, 2018). Faiths are also effective builders of social capital, 'freighting' moral & spiritual agendas into practical forms of social action (Putnam and Campbell 2012).	 Faith communities provide networks of care and compassion to reduce food poverty & food waste (Williams and May, 2022). Low-impact lifestyles based on moral and theological motivations (lves et al., 2023). FBO-led Recycling mentoring and communal recycling projects (Mohamad et al. 2012 a) Adapting religious buildings to climate change (solar panels, community gardens on land surrounding places of worship). Religious NGOs supporting faith groups to move towards environmental sustainability (e.g. A Rocha UK: https://ecochurch.arocha.org.uk/; Islamic Foundation for Ecology and Environmental Sciences: https://www.ifees.org.uk/).

Prophetic imagination	Religious actors can provide comment and critique of social conditions or normative visions of sustainable futures. Sociology of religious environmentalism conceptualises "public campaigning" as expression of religious environmental action (Koehrsen, 2015; 2018).	 Sustainable placemaking around shared values and shared local histories (Cooper et al. 2010, Kong & Woods 2016). Prominent in environmental activism and protest. For example, Christian & Buddhist XR, Christian Climate Action (Joyce, 2020, Skrimshire 2022). Public statements and declarations e.g. joint statement on Climate Change by the Archbishop of Canterbury, Pope Francis and Ecumenical Patriarch Bartholomew (2021), or the Islamic Declaration on Climate Change (UNFCCC, 2015).
Policy	The inclusion of religious perspectives in environmental policy formulation can offer alternative voices, values, narratives and frameworks for environmental governance. Theoretical perspectives include postsecularity (Beaumont and Baker, 2011; Cloke et al., 2019) which recognises spiritual beliefs and values exist beyond formal religious contexts. Third Way policy response in US, UK, Europe and Australia (Giddens, 2013) conceptualise civil society as important antidote to State or Market control (Putnam, 2000).	 Internal shifts in policy or strategy of religious organisations can represent significant change for sustainability. This includes decarbonised investment strategies (IEMA, 2022). Integrated policy streams that incorporate both faith-based groups and secular policy actors on issues such as food poverty and environmental sustainability strategies (Baker and Timms 2022). Effective partnerships are marked by shared values across difference; co-creation rather than co-production; and kenotic (or self-emptying) leadership (Baker 2023). In religious states, religious justifications can be used to bring about policy change. For example, in Indonesia, the Ulama Council of Indonesia (MUI) established Islamic legal edicts (fatwas) against harming endangered species, destructive mining, and slash and burn farming (Harvard Divinity School, 2023).

3. Adaptation and vulnerability

The IPCC AR6 WGII (Impacts, Adaptation and Vulnerability) report emphasised the importance of practical responses to increased frequency, severity and duration of extreme events (IPCC, 2022a). The material resources of religious organisations have been widely documented to be crucial assets in the aftermath of climate disasters. For example, after Hurricane Katrina, many shelters that offered support for evacuates were run by faith-based organisations (Pant et al., 2008).

180 In addition to immediate practical responses to extreme events, the AR6 report highlights the 181 importance of building adaptive capacity within communities by implementing adaptive strategies (IPCC, 2022a). Climate change impacts the urban poor most severely due to 182 183 heightened exposure to natural hazards (e.g. flooding or heat) exacerbated by political, 184 economic and planning disparities, and reduced capacity to plan for and respond to hazards 185 due to lack of economic or political power (Leal Filho, 2019; Dodman, 2019). Yet commonly, 186 religious organisations are anchor institutions within poor and informal settlements, helping to provide social cohesion and support (Lipsky, 2011; Lunn, 2009; Glaab & Fuchs, 2018). Thus, 187 religious organisations can be vital in any activities to enhance adaptive capacity in these 188 189 settings.

Also key to the contribution of religion to the adaptive capacity of cities is the role of culture 190 and spirituality in place meanings and place-making. A large body of literature is 191 192 demonstrating the importance of shared identity and investment in place as integral to creating and sustaining urban resident localities (Grenni et al., 2020; Horlings, 2016). In many contexts, 193 194 spiritual meanings and religious histories are central to an understanding of place (Cooper et al., 2010; Kong and Woods, 2016). With the IPCC highlighting the importance of "diverse 195 forms of knowledge...in understanding and evaluating climate adaptation processes and 196 197 actions" (IPCC, 2022a: 7), the role of religious beliefs in shaping local perspectives on climate 198 change and place is vital. This includes notions of sacredness, which can protect ecologically-199 valuable areas within cities (Tatay & Merino, 2023; Jaganmohan et al., 2018; Ormsbury, 200 2021), and religiously shaped understandings of knowledge, especially religious concepts of 201 future desirable visions (e.g. justice, peace, freedom) which are critical to the effective 202 formulation of urban climate change adaptive strategies.

Finally, religion and spirituality are well known to be important factors that can help trauma victims cope with and respond to traumatic events (Peres et al., 2007) and for many, participation in religions communities can enhance personal resilience and psychological recovery (Pargament, 2001). Given the extensive evidence of the profound psychological

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207 damage of climate disasters on victims (see Ferreira, 2020 for recent comprehensive review),
208 understanding the function of religious organisations in contributing to urban adaptive capacity
209 is crucial.

Some have theorised these enabling resources of faith as "spiritual" or "religious" capital 210 211 (Baker & Miles-Watson, 2010; Haar 2011) which should be appreciated alongside built, 212 financial and natural capitals. However, any reference to social or spiritual capital needs to be offset with general criticisms, which not only critique its fuzziness and ambiguity (Inaba, 2013) 213 214 but also its separation from economic capital. This separation underestimates the ways in which cultural reproduction always favours existing power structures rather than providing 215 216 radical alternatives for the most marginalised in society (for example Bourdieu's 217 understanding of cultural capital and religious capital) (Bourdieu 1983; DeFilippis 2001).

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219 **4. Mitigation**

The IPCC AR6 WGIII report emphasised the importance of local communities in enabling the 220 221 necessary and profound transition towards a low carbon society (IPCC, 2022b). Key mitigation 222 actions that cities must pursue include the reduction of energy consumption and enhanced 223 uptake of carbon. Faith-based organisations can significantly assist in motivating these 224 transitions through engaging communities with value-based moral motivations for climate action, and *mobilising* these changes by directing practical and political resources to this 225 challenge. Examples of these are presented below using O'Brien's (2018) Three Spheres 226 227 framework as an organising tool.

Within the practical sphere, Buddhist, Muslim, Christian and Hindu communities have 228 229 mobilised recycling behaviours in Malaysia, through their implementation of a communal collection system and ability to reinforce behaviour over time (Mohamad et al., 2012a), thus 230 representing faith-based niche experiments towards urban sustainability transitions 231 (Mohamad et al., 2012b). A database of other practical faith-based practical projects on 232 climate mitigation can be found at the Forum on Religion and Ecology's database (Yale, 2023). 233 234 Urban sacred sites are also physically valuable for their urban greening, biodiversity and carbon mitigation potential (De Lacy & Shackleton, 2017; Gopal et al., 2018). 235

In line with the *political* sphere, faith communities have fostered collaboration towards reducing
carbon emissions through establishment of networks (e.g. Faith for the Climate; Green Faith,
Parliament of World Religions), lobbying for political action on climate, such as participation in
UNFCCC meetings (Glaab, 2017), issuing joint statements on the imperative for climate
action, and participating in non-violent direct action. However, many minority faith

communities can be encumbered from taking political action that they feel may compromise

their social acceptability and legal security within society, as has been observed among British
Muslim People of Colour (Tobin et al., 2023).

At a deeper level, faith-based action at the personal sphere includes interventions or initiatives 244 245 that seek to shape and activate the moral commitments and religious values that can motivate 246 and underpin climate action. Religious traditions are not homogenous and there can be significant disagreement and conflict within and between religious denominations and 247 communities (Koehrsen, 2022). However, religious rationalities for addressing climate change, 248 such as notions of sacredness, stewardship and spiritual relationality between people and 249 250 nature, have been captured by many organisations in an attempt to unify and catalyse this 251 potential(e.g. Faith for the Climate, 2023). There is also evidence that appealing to religious beliefs, values and rationalities can be a powerful approach to shifting or strengthening 252 attitudes and behaviours related to climate change among religious believers (Ives et al., 253 254 2023).

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5. Implementation

257 Given the polycentric nature of environmental governance (Jordan et al., 2018), multi-actor partnerships across formal and informal institutions and networks are key to adaptive 258 responses of cities to climate change (Boyd & Juhola, 2015). Yet, religious actors have often 259 been marginalised, invisibilised or instrumentalised in formulation of climate policy and 260 engagement in action initiatives by both state and non-state organisations (Tobin et al., 2023). 261 This narrative is changing (see 'policy' row of Table 1), but future framing of the relationship 262 between faith groups and the state or market needs to re-imagined as one of active co-263 264 creators of a common response to a common threat rather than producers of services and outcomes (Baker 2023; Osborne et al. 2016; Voorberg et al., 2015). 265

The AR6 WGII report emphasises the importance of "[e]ffective partnerships between 266 governments, civil society, and private sector organizations, [to] enhance the adaptive 267 capacity of vulnerable people" (IPCC, 2022a: 24). Similarly, the WGIII Mitigation report 268 269 emphasised that "[e]ffective and equitable climate governance builds on engagement with civil society actors" (IPCC, 2022b: 45). It is evident that partnerships between faith-based and 270 secular actors are integral to more effective climate action and implementation of climate 271 272 policy. This resonates with understandings of the 'post-secular city', which is marked by 'a 273 coming together of citizens who might previously have been divided by differences in 274 theological, political or moral principles - a willingness to work together to address crucial 275 social issues in the city, and in doing so put aside other frameworks of difference involving

276 faith and secularism' (Cloke and Beaumont, 2013: 28). There is therefore a need for a deeper 277 understanding of basis upon which effective partnerships with religious actors can be formed. 278 Within many contemporary societies, there is a growing emphasis on values as the source of real change in both individual and corporate life, based on sources of spiritual re-enchantment, 279 280 as opposed to disenchantment (Katz et al. 2021, Duffy 2021, Turner, 2022). Thus, there is a need to develop a theoretical and policy paradigm that harnesses and engages with values 281 and their intersection with religion and spirituality. Figure 1 presents a pictorial metaphor of 282 283 such a paradigm.

Values can be understood as subsurface sediments out of which vegetation (social structures, 284 285 institutions and lifestyles) grows. Just as sediments carry the marks of the depositional 286 environments within which they were laid down, values carry the marks of the socio-cultural contexts they are derived from. Across geographical and historical settings, cities have been 287 profoundly shaped by religious ideas and practices (Day & Edwards, 2021). After the 288 289 Enlightenment and following the industrial revolution, technological and cultural changes associated with modernity and industrialisation created new cultural environments that 290 'deposited' a new set of values. These have included human exceptionalism, individualism, a 291 292 belief in progress and development, an emphasis on utility and production, and consumerism. 293 Many of these values are associated with the process of secularisation, which Taylor (2007) 294 characterises not as a retreat of religion but a philosophical shift in society that legitimises 295 unbelief, embraces plurality and is grounded in a separation of nature and divinity. More 296 recently, scholars have begun to explore the entanglement of cultural meanings, values and scientific understandings of environmental change that define the Anthropocene (Hamilton et 297 al., 2015). In this context, the 'depositional environment' model proposed therefore recognises 298 299 both the importance of religion in shaping the plural sets of values present in contemporary urban settings, and rejects neat categorisation of values as religious vs. secular or 300 homogenous within religious traditions. 301

This model has profound implications for how action on urban climate change mitigation and 302 adaptation can be mobilised. The IPCC concluded that "[m]itigation options that align with 303 304 prevalent ideas, values and beliefs are more easily adopted and implemented" (IPCC, 2022b: 46). Similarly, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem 305 Services calls for actions that help "unleash existing social values of responsibility" for 306 sustainability transformations (IPBES, 2019, s.33). Horcea-Milcu (2022: 5) argued that for the 307 transformative potential of values to be unleashed, they must be "activated, negotiated, 308 consolidated, and mobilized within and across intentional individual or collaborative 309 processes". Thus, sets of "sustainability-aligned values" proposed by IPBES (2022), namely 310 311 values of care, unity, equity and justice, cannot be neatly imported from elsewhere but must

- be attended to within particular socio-cultural settings. The value stratigraphic model proposed
- 313 here emphasises the need to recognise and work with existing values laid down in cultural
- 314 sediments to plant, germinate and nurture seeds of climate transformations.



Figure 1: A schematic representation of the depositional model of values described above.
Here, sets of values can be understood as sediments, laid down under particular
environmental (socio-cultural) conditions through time, often characterised by religious belief
systems. Therefore, a complex assemblage of values are present beneath the surface. As a
farmer works with the soils and sediments within a field, the task for developing effective

321 partnerships for urban climate action is to develop partnerships across religious and secular

322 divides, grounded in shared values. This includes (1) understanding the value context, (2)

remediating toxic values, (3) mixing and aerating values, and (4) enriching values through
 collaborative processes.

325

326 An understanding of values as cultural sediments has implications for urban climate action. 327 First, just as a farmer, gardener or ecological restorationist tests the soil before deciding on 328 any action to take, sustainability practitioners must recognise and understand the religious 329 landscape and history of a community. This includes understanding key historical moments, 330 religious complexity and division, and examples of positive action and flourishing. Second, just 331 as sediments can be contaminated by toxins and pollutants, so it may be necessary to remediate toxic values, beliefs and attitudes, that lead to the generation of regressive 332 outcomes that privilege the few over the many, whether religious or secular in origin. 333

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334 Religiously derived toxins for example could include theological beliefs that see the climate 335 crisis as a welcomed-end-of times phenomenon, or as divine punishment for human sins (Koerhsen at al., 2023: 6). These beliefs can generate various forms of climate scepticism, 336 denialism, fatalism or quietism, and are expressed in bureaucratic structures and institutional 337 338 values of religious institutions that inhibit collaborative engagement with secular organisations and mutual development of coherent policy. Third, just as a horticulturalist can till and prepare 339 the soil by mixing and aerating the substrate, it is necessary to find shared values across 340 difference, by effectively 'mixing' cultural layers. This can involve establishing contexts where 341 342 religious beliefs and values can be offered freely as gifts to society rather than markers of division. Finally, as soil is enriched through addition of nutrients, climate action can be 343 enhanced through activities that draw out, support and amplify deep values and motivations 344 345 for sustainability.

Many of these activities can be seen in a recent example of how resources of UK faith-based 346 347 organisations were activated during the pandemic lock downs of 2020 and 2021, and indispensable to the overall policy responses of local authorities (Baker and Timms, 2020; 348 Baker and Timms 2022). In terms of the model outlined in Figure 1, the professionalism and 349 350 scale of response from faith communities in response to the pandemic favourably reminded 351 secular agencies of their indispensability (i.e., Action 1: a renewed awareness and 352 understanding of religious traditions and practices for the current context). Old hierarchies, 353 bureaucratic protocols and technocratic language, designed to entrench 'expert' vs. 'lay' 354 identities, were quickly eschewed as wholly inadequate for the scale of the task in hand (i.e., Action 2: the removal of toxic assumptions and practices that embed regressive as opposed 355 to progressive outcomes). Shared values quickly emerged in the context of devising effective 356 and sustainable responses to human disaster and the realisation of a common and 357 interdependent humanity (i.e., Action 3: creating the conditions for aerating the policy 358 landscape by allowing the creative mixing of religious, sacred and secular/scientific substrates 359 of values and beliefs). These values were articulated as kindness, empathy, compassion, 360 motivation, hope, friendship and social justice. Such shared values are being reflected upon 361 by some faith groups and local authorities as the basis for policy formation going forward as a 362 way of consolidating a new way of partnership working rather than ideological or economic 363 aims that are often sources of division and siloed thinking (Ramos and Hynes, 2019) (i.e., 364 Action 4 – creating an enriched and more fruitful partnership environment that will generate 365 366 enhanced communication, innovation, trust and solidarity). That shared values will more 367 effectively lead to shared outcomes is a vital lesson that has been learned from the pandemic 368 and can be applied to urban climate challenges.

369

370 6. Conclusion

There is an urgent need to attend more closely to the social and cultural origins of climate 371 change, contexts that shape how cities experience, and pathways for developing shared 372 action for climate mitigation and adaptation. As representatives of systems of belief, values 373 374 and meaning-making that differ from conventions of rational science-led decision-making (Gluckman, 2016), there is a need for religious actors to be engaged more explicitly in the 375 mutual co-creation of urban climate policy through the weaving together of multiple forms of 376 knowledge (Tengö et al., 2014; Norström et al., 2020). This article has presented a model for 377 activating partnerships across religious-secular divides through understanding religion as a 378 379 key influence on prevailing values within society and working to act from a foundation of 380 shared values. However, further research is needed into how such partnerships can be fostered in different geographical contexts and common understandings of climate responses 381 382 developed across ontological and epistemological divides.

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