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What factors enable or limit the role of intermediaries in strengthening transformative capacities? Case studies of intermediaries in two Cambodian cities

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Abstract

Urban transformative capacities can be strengthened through the role of intermediaries, who are individuals or organisations that work between agencies and identify ways to form coalitions and broker knowledge, drive reforms across scales, and address power disparities. There is limited research to date to understand the factors that enable or limit the role of intermediaries in urban sustainability transformations. Through comparing the roles of intermediaries and their evolution in two case studies cities of urban Cambodia – Battambang and Sihanoukville – through the lens of the urban transformative capacities' framework of Wolfram (Cities 51: 121–130, 2016), we have identified key factors that impact the effectiveness of these intermediaries. Through qualitative interviews and focus groups, we have found that long-term, place-based, and networked engagement, with political trust and support, is important, alongside the need to demonstrate results and build momentum for transformation through pilots and collaboration. Underpinning these factors are the local power dynamics and structural conditions, as well as the capabilities and attributes of the intermediary actors.

Science highlights

- A socio-political enabling environment is needed for intermediaries to play an active and trusted role in strengthening transformative capacities through knowledge brokering, forming coalitions, driving reforms and addressing power disparities.
- The effectiveness of intermediaries in strengthening transformative capacities depends on their independent and long-term engagement, as well as their place-based knowledge and networks that enable them to build trust and relationships.
- Once intermediaries are established in a city, their successful delivery of capacity-strengthening projects can build momentum and sustain transformations.

Keywords: Transformative capacities, Intermediaries, Sustainability transformations, Cambodia, Urban governance, Secondary cities



Policy and practice recommendations

- Intermediaries that are seeking to strengthen the transformative capacities of urban stakeholders should carefully consider the urban context – structural conditions, politics and place-based factors – in planning their engagement.
- Intermediaries can enhance their effectiveness through evaluating and strengthening their own attributes and capabilities in intermediation (e.g., diplomacy, adaptability, political-cultural nous, and stakeholder facilitation skills).
- Understanding the actor landscape and the power dynamics between urban stakeholders is a necessary initial step for intermediaries in planning their engagement to strengthen the transformative capacities of urban stakeholders.

Introduction

Cities are a central reference point for global sustainability and have become a focus for sustainability transformations research and practice, especially in emerging in South-east Asian countries with rapid urbanisation (Lord 2020). Sustainability transformations involve large-scale societal changes to address major societal and ecological challenges, including fundamental changes in structural, functional, relational and cognitive aspects of social-technical-ecological systems (Scoones et al. 2020). In cities, urban stakeholders are rerouting the development pathways of cities towards sustainability goals by enabling urban transformations (Webb et al. 2023).

Urban transformative capacities and transformative urban governance underpin transformations of cities to sustainability (Hölscher et al. 2019a; Wolfram 2016; Wolfram et al. 2019). Transformative capacities are the social attributes and capacities that empower individuals and communities to take action and have agency in enabling sustainability transformations (Ziervogel et al. 2016). Transformative urban governance is a part of the broader transformative capacities framework, and according to Wolfram (2016) involves the transformative capacities of “inclusive and multi-form governance”, “transformative leadership”, and “transformative communities of practice”. Transformative urban governance also requires the alignment of visions and values, urban governance institutions and governance practices towards sustainability transformation goals (Lord and Prior 2024).

Intermediaries – organisations, networks and individuals – have played a role in strengthening transformative capacities and governance in cities and sustainability transformations or transition processes more broadly. Intermediaries perform a range of functions including: aggregating knowledge and facilitating learning, forming coalitions, networking and building partnerships, brokering and resolving conflicts, addressing power disparities, facilitating innovation and diffusion, envisioning and articulating change, coordinating activities, advocating for change and mobilising support, and providing institutional support and infrastructure (Sovacool et al. 2020; Wolfram 2016; Ehnert 2023). Intermediary actors have helped to trigger transformation processes through empowering communities and leaders (Wolfram 2019). They can provide trustworthy translations of knowledge between urban actors (such as businesses and government) and facilitate awareness of an issue into implementation (Argyriou 2020).

While there is increasing evidence that these intermediary actors have played a significant role in urban sustainability transformations, and research on their roles and functions, there remains a lack of empirical research into how these intermediaries have strengthened transformative capacities, and what makes them effective in this capacity strengthening role. Addressing this gap in current research, we have studied the role of intermediaries in two second-tier cities of Cambodia (in Southeast Asia) – Battambang and Sihanoukville – through qualitative coding analysis of documents and semi-structured interviews. Cambodia is currently in an early phase of urbanisation, but it has experienced rapid urban growth over the last three decades (UN-DESA 2022), and faces many urban sustainability challenges, such as increased traffic congestion, pollution, flooding, and increased spatial inequality (World Bank 2018).

This paper first discusses the theoretical framework for our research – unpacking the literature on urban transformative capacities and the role and functions of intermediaries – and our methodology. We then provide the results of how intermediary actors in the two case study cities of Cambodia were perceived to be stimulating sustainability transformation processes, and what made them effective or limited their role. We conclude by discussing the implications of our research for knowledge and practice related to intentional co-designed and co-produced capacity-strengthening processes delivered by cities in partnership with intermediary organisations (e.g., research or programmatic) to support urban sustainability transformations.

Theoretical framework – urban transformative capacities and the role of intermediaries in strengthening transformative capacities and governance

Urban transformative capacities enable urban stakeholders to reshape the development trajectories of cities towards their desired urban future (Wolfram 2016; Asadzadeh et al. 2023; Webb et al. 2023; Hölscher et al. 2019b; Shahani, Pineda-Pinto and Frantzeskaki 2021; Glaas et al. 2019). Transformative capacity is “*the capacity of individuals and organizations to be able to both transform themselves and their societies in a deliberate and conscious way*”, according to Ziervogel et al. (2016, 955). In an urban context, Wolfram (2016, 126) has defined urban transformative capacity as “*the collective ability of stakeholders involved in urban development to conceive of, prepare for, initiate and perform path-deviant change toward sustainability within and across multiple complex systems that constitute the cities they relate to*”.

Scholars have developed and applied a range of conceptual frameworks to understand and support the strengthening of urban transformative capacities and enable urban sustainability transformations (Wolfram 2016; Asadzadeh et al. 2023; Webb et al. 2023; Hölscher et al. 2019b; Shahani et al. 2021; Glaas et al. 2019). We used Wolfram’s framework to frame our research, which outlines the ten main capacity development factors for transformation and 18 sub-components (see Table 1). Wolfram’s comprehensive framework provided practical guidance for evaluating the extent of transformative capacities across different urban contexts (Castán Broto et al. 2018).

Transformative governance is a key enabler for urban sustainability transformations and is highlighted in the transformative capacity frameworks of several scholars (Wolfram 2016; Webb et al. 2023; Hölscher et al. 2019b; Glaas et al. 2019). Ziervogel et al. (2016) emphasise that governance should create a strong sense of social cohesion (i.e.,

Table 1 Conceptual framework for urban transformative capacity components (source: Wolfram 2016)

Component/ Capacity development factors	Subcomponents (where applicable)
C1 Inclusive and multiform urban governance	C1.1 Participation and inclusiveness C1.2 Diverse governance modes and network forms C1.3 Sustained intermediaries and hybridization
C2 Transformative leadership (in the public, private and civil society sectors)	
C3 Empowered and autonomous communities of practice (place-based and/or issue-driven)	C3.1 Addressing social needs and motives C3.2 Community empowerment and autonomy
C4 System(s) awareness and memory	C4.1 Baseline analysis and system(s) awareness C4.2 Recognition of path dependencies
C5 Urban sustainability foresight	C5.1 Diversity and transdisciplinary co-production of knowledge C5.2 Collective vision for radical sustainability changes C5.3 Alternative scenarios and future pathways
C6 Diverse community-based experimentation with disruptive solutions	
C7 Innovation embedding and coupling	C7.1 Access to resources for capacity development C7.2 Planning and mainstreaming transformative action C7.3 Reflexive and supportive regulatory frameworks
C8 Reflexivity and social learning	
C9 Working across human agency levels	
C10 Working across political-administrative levels and geographical scales	

through bonds, community ties and wider social networks), while Wolfram (2016) focuses on the need for “inclusive and multi-form governance (C1)”, with “transformative leadership” (C2) and “empowered communities of practice (C3)”. For Hölscher et al. (2019a, 188), transformative governance is focused on “orchestrating – the ability to coordinate multi-actor governance processes and foster synergies and minimise trade-offs and conflicts across scales, sectors and time”. Webb et al. (2023) highlights the importance of “aligned institutions and governance”, whereas Glaas et al. (2019) emphasises the need for “diverse governance modes” (like Wolfram), and a “balance of top-down and bottom-up processes”. Whereas, Asadzadeh et al. (2023) focus on transformative capacities being integrated into governance and planning systems, through their discourses, structures, tools, and practices.

Scholars have highlighted the role of intermediaries in developing the transformative capacities of urban stakeholders and transforming urban governance systems, including intermediary organisations, networks and individuals (Wolfram et al. 2019; Wolfram 2016; Webb et al. 2023). A range of organisations can perform intermediary functions and may do so without being aware of their intermediation (Kivimaa et al. 2019; Sundqvist and Tuominen 2024). Intermediaries range from individual civil servants to civil society organisations, to consultants and national expert organisations, and are generally all intrinsically aiming to create conditions for urban sustainability transformations and are highly networked (Sundqvist and Tuominen 2024).

Intermediaries have a range of different roles and functions in transformative governance and strengthening transformative capacities. In the context of strengthening urban transformative capacities, Wolfram (2016) outlines that intermediaries have a role in strengthening urban transformative capacities by: (a) forming coalitions and

brokering knowledge, (b) driving reforms across scales and decision-making arenas, and (c) addressing power disparities. Framed by sustainability transitions theory and the multi-level perspective, Kivimaa et al. (2019) classifies intermediaries as working in the following ways:

- (1) systemically (across niche, regime and landscape levels),
- (2) within regimes (within a mandate from the dominant regime actor),
- (3) within niches (between local projects),
- (4) across processes within experimental projects, or
- (5) as a user intermediary intermediating between dominant and niche technologies.

Other scholars have systematically studied the different functions of intermediaries, including Sovacool et al. (2020), Ehnert et al. (2022) and Ehnert (2023), as summarised in Table 2 below, drawing from a broad literature on transition intermediaries and innovation studies (van Lente et al. 2003; van Lente et al. 2020; Hargreaves et al. 2013; Hodson et al. 2013; Kundurpi et al. 2021).

Some case studies on the roles of intermediaries in transitions/transformations have also highlighted key attributes and capabilities of effective intermediaries, including:

- Ability to provide trustful ‘translation’ of information between stakeholders (Argyriou 2020)

Table 2 Functions and activities of intermediary actors in strengthening transformative capacities and governance for sustainability transformation (adapted from Sovacool et al. (2020), and Ehnert (2023))

Function of intermediaries	Activities
F1. Envisioning and articulating needs and expectations for change	• Articulation of expectations, requirements and visions
F2. Aggregating knowledge and facilitating learning processes	<ul style="list-style-type: none"> • Knowledge gathering, processing, generation and combination • Facilitating experimentation • Aggregation and circulation of knowledge • Providing advice and support
F3. Creating a shared institutional infrastructure	<ul style="list-style-type: none"> • Policy implementation • Legitimizing institutional change • Developing standards
F4. Innovation and diffusion	<ul style="list-style-type: none"> • Innovation process management • Technology transfer • Connecting new technology to users
F5. Framing and coordinating local-level activities	<ul style="list-style-type: none"> • Identifying common challenges found encountered across local projects • Coordinating and framing action by sharing this knowledge
F6. Networking and building partnerships, aligning interests and resolving conflicts	<ul style="list-style-type: none"> • Creating and managing networks • Translating between actors and interests • Trust building and conflict resolution • Brokering by representing organisations and negotiation on their behalf • Brokering between actors and interests
F7. Advocating change and mobilising support	<ul style="list-style-type: none"> • Policy advocacy and lobbying • Financial brokering by raising monetary support

- Providing creative approaches to ambiguity and conflict, which enables deliberation and collaboration between stakeholders (Hamann and April 2013)
- Ability to empower communities and local leaders (Wolfram 2019)
- Adaptability to local contexts and tailoring approaches to the groups and actors' competencies and capability requirements (Novalia et al. 2020)
- Skills in navigating and shifting opportunity contexts and exercising different forms of power in different relational contexts (Novalia et al. 2020).

Expanding on this literature on the roles and functions of intermediaries, as well as some examples in the literature of the attributes and capabilities of effective intermediaries, our study aims to explore in further depth the key features that enable or limit the effectiveness of intermediaries in the urban sustainability transformation. Furthermore, given many of the existing studies on intermediary actors in urban transformations are from advance economic contexts, there is an opportunity to advance empirical research on this topic into lower and lower-middle income settings. Our research therefore seeks to investigate these factors in the context of two secondary cities of Cambodia, with the following questions:

- How have intermediaries worked to strengthen the transformative capacities of urban stakeholders in Battambang and Sihanoukville?
- What factors made the intermediaries effective or limited in their roles?
- What are the lessons learned for other actors seeking to strengthen transformative capacities?

Research methods

Through a case study approach, we have investigated how intermediary actors sought to strengthen the transformative capacities of urban stakeholders in two Cambodian cities, Battambang and Sihanoukville, and what made them effective or limited their effectiveness. A case study approach enables the investigation of a contemporary phenomenon within its real-life context (Yin 2009) and supports the case study researcher in interpreting the case study through case study assertions and developing key lessons related to their area of investigation (Creswell and Poth 2018). Our case study research was implemented through qualitative methods, including semi-structured interviews, focus groups and document analysis. Our research methodology applied an adaptive theory approach, enabling the development of new concepts and insights by adapting existing theories and conceptual frameworks (Layder 1998).

Case study context

The two secondary cities in Cambodia were selected to provide a city-level comparison of urban sustainability transformation processes and the roles of intermediaries in capacity strengthening. Cambodia's national government has prioritised both cities as "sustainable cities", under *Cambodia's Sustainable City Strategic Plan for Seven Secondary Cities (2020–2030)* (Chan 2020). Battambang is perceived as more advanced with its urban sustainability agenda, as it was the first Cambodian city to develop and publish an urban land-use masterplan (Han and Lim 2019). Sihanoukville is within a Special

Economic Zone and is an industrial port city with significant international investment in industry and construction, whereas Battambang is an agricultural trading centre (see Table 3). The capital city of Phnom Penh was not selected as a case study, as it was the focus of other significant and complementary sustainability transformation-focused research projects (Jayaweera et al. 2023).

Urban sanitation reforms have become the primary focus of both cities’ urban sustainability transformation processes. Battambang has implemented waste separation and recycling systems (for organic waste and plastics), employed informal waste pickers as part of its informal waste collection systems, invested in a new sanitary landfill, designed a smartphone application to support waste management, introduced penalties and an enforcement mechanism for illegal waste dumping, and undertaken strategic planning for the cities’ waste sector. Sihanoukville has focused primarily on new waste sector infrastructure (e.g., upgrading of the landfill site, new wastewater treatment plants and solid waste pollution traps installed in catchments), has trialled waste separation and recycling systems in tourism zones, has a network of informal waste recycling operators and one formal plastics recycling company (Ton-to-Ton), and has started to implement a new penalty system for illegal waste dumping.

Battambang’s sustainability transformation processes have been led by its municipality in partnership with a local organisation called Cambodian Education and Waste Management Organisation (‘Comped’), which is both a composting business and a Non-Government Organisation (NGO). The progress made by the municipal-Comped partnership on urban sanitation sustainability has attracted the support of the provincial and national governments, international donors, local universities, and local civil society organisations. Battambang now has a complex network of stakeholders involved in the sustainability transformation of its sanitation sector (UN-ESCAP 2021, Michaels 2019). Through municipal leadership and multi-stakeholder partnerships, Battambang has incrementally built up its urban transformative capacities in reforming its waste sector (Lord et al. 2024). Battambang became the first city to directly administer its budget from the national government for urban sanitation when responsibilities were legally devolved to municipalities in 2015. Battambang also became the first city to develop its own local regulatory instrument for waste management, which became a template for other cities (IGES 2018).

Table 3 Case study cities in Cambodia

Case study 1: Battambang	Case Study 2: Sihanoukville
<ul style="list-style-type: none"> • Population: around 150,000 (2024)^a • Trade and economic hub, culturally significant, agricultural center • First city in Cambodia that has an approved <i>Urban Land-Use Master Plan</i> in 2015 • Rapid urbanisation, with new infrastructure investments (roads and sanitary landfill) • Solid waste management improvements underway, under a new <i>Masterplan for Solid Waste Management</i> (2022) • Vulnerable to climate change • Awarded by Association of Southeast Asian Nations (ASEAN) as one of the first Eco-Sustainable Cities 	<ul style="list-style-type: none"> • Population: around 156,000 (2024)^a • Port city important for trade and tourism, and located within the Sihanoukville Provincial Special Economic Zone • Rapid urbanisation, with major foreign investment in construction, tourism, and manufacturing • New infrastructure investments (roads, wastewater treatment plant and landfill) • High vulnerability to climate change • Strategically important to Cambodia as an Association of ASEAN pilot Smart City • Politically sensitive due to land tenure issues, environmental impacts

^a World population review statistics (2024): <https://worldpopulationreview.com/cities/cambodia>

Key enabling factors that supported the strengthening of transformative capacities in Battambang included a culture of innovation and relatively stable population and political-economy, and local recognition and award processes (Lord et al. 2024; Han and Lim 2019). On the other hand, previous research highlighted that Battambang had a complex political history of conflict over informal land use, and has historically excluded of disadvantaged groups from decision-making due to political control of the city by its elite (Thuon and Cai 2019). Developing inclusive governance visions, institutions and practices – whereby the traditionally excluded populations have a role, and power-dynamics can be shifted – has been a critical component of developing Battambang’s urban transformative capacities (Lord and Prior 2024).

Sihanoukville’s sanitation sector reforms are primarily internally driven by the national and authorities, with some limited involvement of international development agencies in their planning and implementation. Many initiatives to improve sanitation services in Sihanoukville have been motivated by a focus on reducing marine plastic pollution, especially as studies have shown that plastic accounted for 80 percent of coastal pollution (Flora & Fauna International 2020).

The Asian Development Bank (ADB) was initially involved in designing Sihanoukville’s new landfill infrastructure, however, the Cambodian government decided to take over the project through its national budget for infrastructure reforms in 2021. Sihanoukville has received some technical assistance from three United Nations agencies and one bilateral donor since 2020 to support smart city planning and pilot smart innovation projects in the sanitation sector.

Sihanoukville’s sanitation sector reforms are underpinned by wider socio-economic and land-use planning reforms. Historically, Sihanoukville’s local economic development has been driven by foreign investment in the gambling sector, construction and tourism, with limited oversight and planning (Luo 2023; Chen et al. 2020; Franceschini 2020). A rapid increase in Chinese investment in Sihanoukville between 2015 and 2019 was perceived as having significant negative impacts on the city, across political, social-cultural, environmental and socio-economic domains (Po and Heng 2019). With the outbreak of the Covid-19 pandemic, the Cambodian Government closed its international borders and halted foreign construction projects, which also allowed for the publication of the cities’ *Land Use Masterplan* in 2021. Furthermore, in 2021, the Cambodia’s Prime Minister established a special committee to support planning for Sihanoukville, which published a *Land Management and Land Use Policy for Developing Preah Sihanouk Province as a Multi-Purpose Special Economic Zone 2022 – 2038* and allocated an additional USD 394 million in budget for urban infrastructure in Sihanoukville allocated from the national government.

Data collection

Following theories of urban governance being an interactive social-political process between urban stakeholders from government, business and civil society (Kooiman 1999; Wolfram 2016) our interviewees came from various organizational backgrounds (see Table 4). All participants provided prior informed consent to participate in the research project. The participants were selected based on the following criteria:

Table 4 Interview participants—organisational category and city focus

Organisation category	National government	Provincial government	Municipality	International development agency	NGO	Private sector	Local university	TOTAL
Battambang		3	14	1	2		1	21
Sihanoukville		5	7	8		4		24
National role (multi-city)	14			5	1	4	1	25
TOTAL	14	8	21	14	3	8	2	70

- They represented a relevant local government institution (e.g., municipality)
- They were directly involved in governmental decision-making or policy related to urban development in the city (e.g., national or provincial government)
- They had an advocacy role or interest in urban administration, services and/or infrastructure delivery in the city (e.g., non-government organisations, local universities, local businesses, and/or international development agencies).

We partnered with two key local institutions to implement our research project, and these organisations enabled us to gain access to key urban stakeholders in the two cities: Cambodia's National Council for Sustainable Development (NCSD) (a multi-agency national governmental institution) and the Cambodian Institute for Urban Studies (CIUS), Paññasastra University of Cambodia. NCSD provided a research assistant for the project and facilitated the logistical arrangements for the interviews with the officials from national and provincial authorities. We held 55 semi-structured interviews between July 2021 and February 2024, including 70 participants, and 3 focus groups in February 2024 that included 18 participants (6 in each group).

The semi-structured interview approach allowed the participants to focus on their experiences and interests in more depth and direct the discussions if desired (Brinkmann 2018). The interviewees could ask questions and contribute ideas, generating a two-way flow of dialogue. We explained the broad concepts of sustainability transformations and transformative capacities and used conceptual frameworks on urban transformative capacities to frame the interview discussion (see Table 1). We asked participants to share their perspectives on the cities' transformation processes, strengths, and capacity needs for sustainability transformation.

Most interviews were held online (47 of the 55) due to COVID-19-related travel restrictions, with the remaining 8 interviews held face-to-face. In a workshop setting, the three focus groups were held face-to-face with participants in Sihanoukville. The focus groups were self-facilitated by the members of the focus groups using a questionnaire, with assistance from workshop facilitators as required. A Khmer-English translator supported the interviews and focus groups as needed. We involved the translators in interview preparation and reflection processes, recognising that the translation process involves a complex cross-cultural interpretation of concepts, drawing on the guidance of Björk Brämberg and Dahlberg (2013).

Most interviews were audio-recorded, except for some interviews with government officials due to the sensitivity of the data. Each focus group reported on their discussions to the wider workshop, and their presentations were audio-recorded. The audio

recordings of the interviews and focus group reports were manually transcribed. For the interviews that were not audio-recorded, our research assistant supported the interviewer in simultaneously transcribing the interview, and the notes taken by the interviewer and research assistant were combined and then reviewed by the translator.

Data analysis

We deidentified the interview transcripts (for confidentiality reasons) and categorised the interviewees into groups based on their organisational type and city focus (see Table 4). The written notes from the focus groups were also translated from Khmer to English.

We used NVivo to analyse the transcripts and the written notes provided by the focus groups, using both emergent and theory-based coding (aligned to the themes of Wolfram's urban transformative capacities framework). Our document analysis reviewed various programs, policies, legal documents, media reports, and relevant websites to understand the local urban sustainability context.

We applied an adaptive theory approach in the analysis of our qualitative data (Layder 1998). An adaptive theory approach enables the analysis of empirical data with a view to adapting existing theories or hypotheses through the collection and analysis of empirical data and the generation of new theories, concepts and insights (Layder 1998). Our adaptive approach was embedded in the theories of urban transformative capacities, focusing on generating new insights related to the role of intermediaries in strengthening transformative capacities through our two empirical case studies. By focusing on the role of intermediaries, we have sought to expand existing theories and develop new concepts to understand the factors that make intermediaries effective in their capacity-strengthening role, using empirical evidence from our case studies.

Results

In the following section, we outline how the intermediaries worked to strengthen urban transformative capacities in each city and then compare the two case studies to gain insights into the key features of their effectiveness and their limitations.

Case study 1. Battambang's transformative intermediation by two key actors: Battambang Municipality and a composting business/NGO ('Comped')

Battambang's municipality-Comped partnership triggered the city's sustainability transformation processes in the sanitation sector and attracted a network of other supporting organisations to strengthen transformative capacities. This partnership was enabled through a mutual partnership objective of transforming the cities' sanitation sector, while each partner was also driven by their objectives. The municipality's objectives were to maintain its national and international reputation as an exemplar 'green/eco-city', gain political support, and achieve long-term improvements in the sanitation sector. Comped's objectives were to generate profit by enabling a pipeline of organic waste for recycling, contribute to urban sustainability agendas, and enhance its reputation with the local community, Cambodian government, and donors. Comped became a technical facilitator for several waste sector projects in Battambang, financed by international development agencies, including projects

of United Nations Industrial Development Organisation (UNIDO), the Institute for Global Environmental Strategies (IGES), and United Nations Economic and Social Commission of the Asia–Pacific (UNESCAP) (IGES 2018, UN-ESCAP 2021, Michaels 2019). The municipality provided Comped with space to run its composting operations and, in return, received in-kind support from Comped to organise waste separation and recycling initiatives.

The Comped-municipality partnership evolved through pilot projects and issue-driven community facilitation events into a multi-stakeholder partnership involving the local university, international development agencies, NGOs, local businesses, and residents to facilitate waste sector reforms (see Fig. 1). This partnership co-generated the cities' *Waste Management Masterplan* published in 2022 outlining a vision and pathway for transformation.

Case study 2. Emerging roles of intermediaries in Sihanoukville, facing several barriers

Sihanoukville's municipality recently partnered with local entrepreneurs and international development agencies to advance its urban sanitation reforms. For example, the municipality supported a plastics recycling company, by facilitating access to communities where it sourced its plastic. The company noted, *"We need interventions from the local authorities, to expand to new communities; we need to go through the municipality to access the communities...; they know the area better than us, and we need their support."* The municipality also had a few partnerships with international development agencies seeking to develop innovative sanitation projects. One of these partnerships supported a start-up technology company to pilot data-tracking software for waste separation and recycling, through the United Nations Economic and Social Commission (UNESCAP) Smart City Innovation Lab (see Fig. 2). These businesses and international development agencies also collaborated in their advocacy and generation of knowledge to support the municipal authorities with sanitation sector transformation.

However, entrepreneurs, NGOs and international development agencies seeking to act as intermediaries in Sihanoukville faced several constraints in partnering with local authorities and in seeking to develop capacities. The municipality was less autonomous due to the political focus of the Cambodian government being on the city's transformation (discussed above), resulting in bureaucratic control by national and provincial authorities. With limited autonomy, the municipality had a limited focus on strategic planning for sanitation and primarily responded to day-to-day issues, while seeking to implement top-down directives.

As a result, Sihanoukville's urban transformation was primarily infrastructure-led, with significant investments in its roads, wastewater treatment facilities, and landfill site. However, the systems of operations and maintenance of these facilities, locally, were under-developed, and the engagement of the local communities and businesses in systemic reform of its sanitation sector towards sustainability was not perceived as a priority by the authorities. Sihanoukville municipality did not have a vision or plan for waste separation at source or implementing municipal recycling systems, and had gaps in its capacity to initiate and sustain the sustainability transformation of the sector.

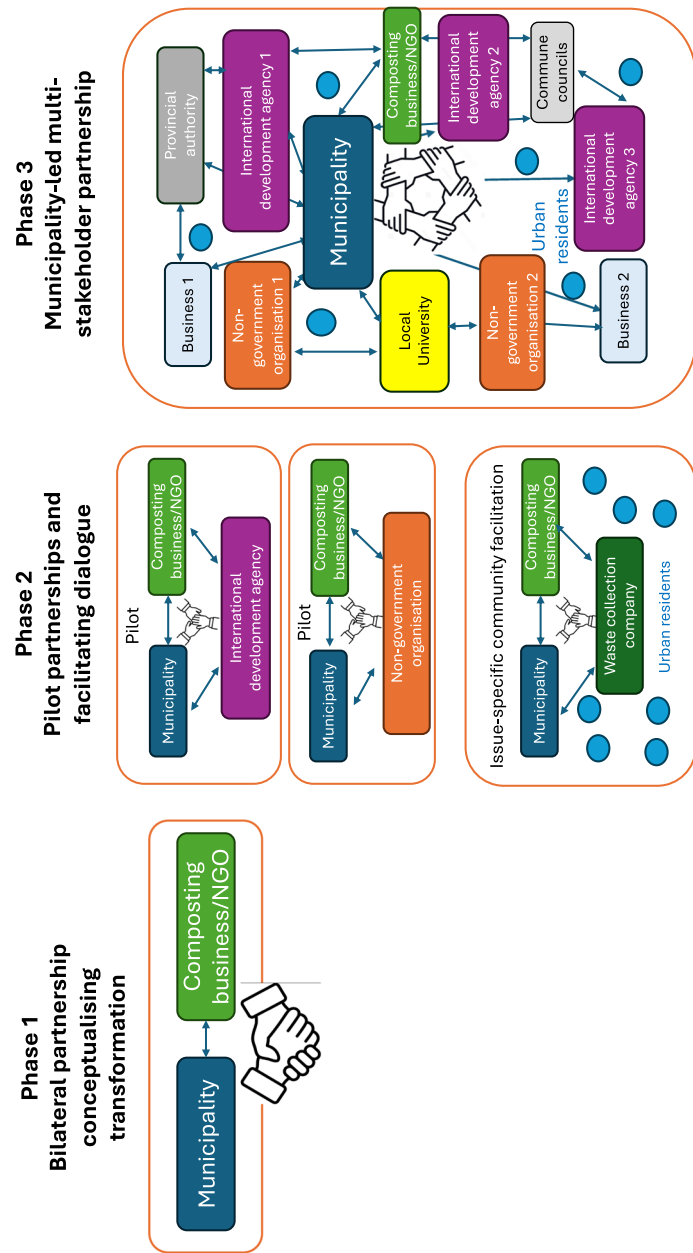


Fig. 1 Evolution of the role of intermediaries in Battambang's sanitation sector transformation (source authors)

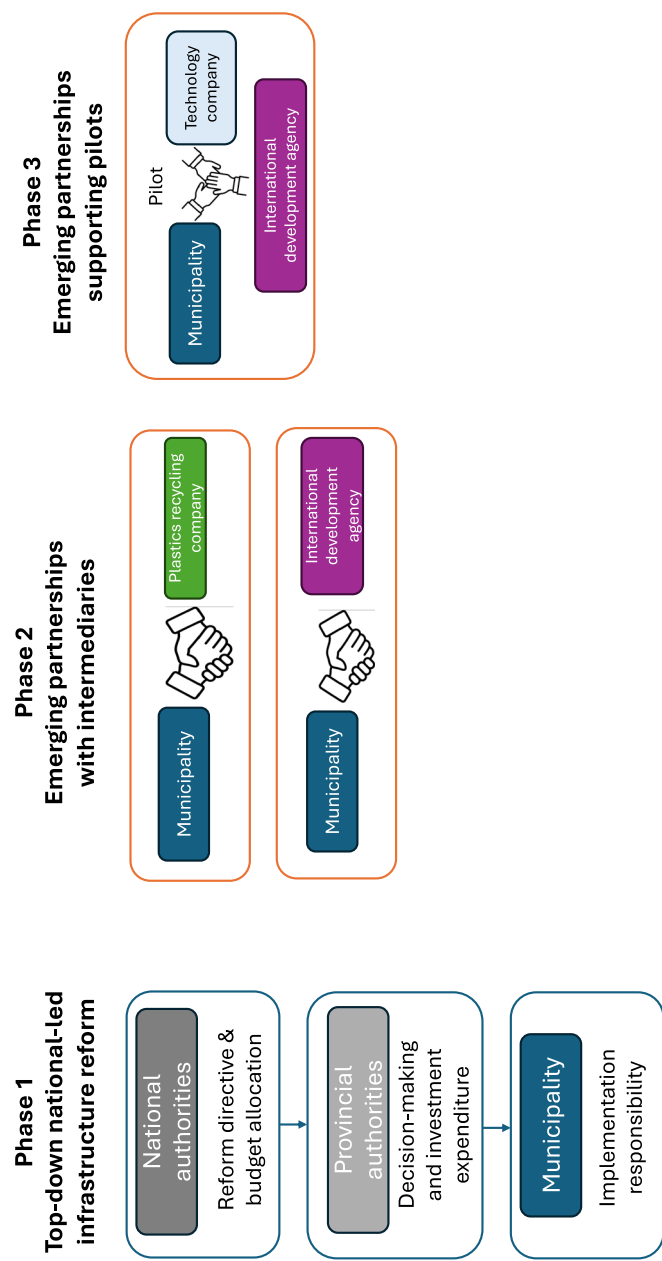


Fig. 2 Emerging roles of intermediaries supporting sanitation reforms in Sihanoukville (source: authors)

Comparison of capacity strengthening roles and functions of intermediaries

Intermediaries in Battambang (Comped and the Municipality) had a more systemic role (working across niche, regime and landscape levels) and had facilitated a wider range of sanitation reforms in through the intermediary functions of knowledge transfer (F2), coordination (F5), facilitation of open dialogue between actors (F6), matchmaking and policy influencing (F7) (see Table 5). In Sihanoukville, the over-all urban governance constraints had prevented intermediaries from having a sustained and hybridized role (aligned to Wolfram's capacity C1.3), and the emerging intermediaries (businesses and international development agencies) were constrained to working within niches. Sihanoukville's municipality provided intermediation within the current regime only (within its mandate from the National and Provincial authorities).

Comparison of the attributes and capabilities that contributed to intermediaries' roles

Key attributes and capabilities that enabled intermediaries to expand their roles and functions in the two case studies, included:

- *Ability to effectively translate and communicate*

In Battambang, one of Comped's intermediary functions was to create space for translating and communicating ideas and resolving the identified waste management problems. Many stakeholders interviewed highlighted that Comped was effective at facilitating communication, and Comped itself described their approach to this:

"We have a public forum, so the residents can talk about their feedback and their perspectives on the waste management... How the collection company is performing and how the authority is performing, and how their neighbourhood is performing on waste management. So, we bring this issue together and talk between the key actors, the resident, the company, and the authority, and we find the solution. It works. And we can develop more effective ways to hit the right issue."

- *Long-term trust and respect*

In Battambang, Comped had often been involved in early discussions with the municipality and international development agencies and in forming multi-stakeholder partnerships with other knowledge providers, such as the University of Battambang. Comped was perceived by interviewees as having the institutional knowledge of the local context and as a trusted partner.

On the other hand, in Sihanoukville, we found there was a lack of trust between different partners. International development agencies perceived that establishing a partnership with the city of Sihanoukville could be difficult and sensitive. The time taken to build trust and cooperation with the city officials could also only trigger reforms if there were multi-level interactions with the higher levels of government to ensure all levels were coordinated and aligned with the strategic direction and proposed actions. One international development agency highlighted how this lack of trust altered their relationship and interactions with the local authorities in Sihanoukville, as follows:

Table 5 Roles and functions of intermediaries in strengthening urban transformative capacities in Battambang and Sihanoukville, referencing the functions of intermediaries and their activities listed in Table 2 (above)

Transformative capacity component		Intermediary roles and functions in capacity strengthening in Battambang	Intermediary roles and functions in capacity strengthening in Sihanoukville
C1 Inclusive and multiform urban governance		As a facilitator between urban residents and key stakeholders (waste company and municipality). Comped addressed power disparities and helped to resolve sustainability problems through creating a coordination platform (F5 and F6 demonstrated)	International development agencies and businesses had found it difficult to establish intermediary partnerships with authorities at local levels. Emerging partnerships facilitated by international (United Nations) agencies had initiated participation and inclusiveness (F6 initiated), although overall the city lacked a diversity in governance modes and networks
C2 Transformative leadership (in the public, private and civil society sectors)		Through knowledge transfer and policy influencing on organic waste recycling, Comped strengthened the municipality's leadership (F2 and F7 demonstrated)	Top-down leadership on urban transformation in the public sector had limited the conditions for emerging leadership in local authorities, private sector, and NGOs
C3 Empowered and autonomous communities of practice (place-based and/or issue-driven)		Comped's community facilitation with the urban residents of Battambang enabled the city to identify and act on their social needs and empower community members through increasing their access to waste services and employment opportunities (F5 and F6 demonstrated)	Place-based solutions to key waste sector challenges had started to emerge, with local authorities facilitating access to waste resources for recycling to a local network of informal recycling businesses (F4 and F5 initiated), although community empowerment was limited, given the overall top-down governance structures
C4 System(s) awareness and memory		Comped's long-term institutional knowledge of and engagement in the sanitation sector provided knowledge continuity for urban sanitation reforms, sustaining local policy reforms and supporting matchmaking between agencies (F2 and F7 demonstrated)	Public sector intermediaries lacked strategic planning and knowledge partnerships to support systems awareness and memory. International development agencies had initiated baseline studies to support systems awareness and identify opportunities for sustainability transformation (F2 initiated)
C5 Urban sustainability foresight		Comped supported the Municipality-led multi-stakeholder partnership for sanitation planning that created a collective vision and roadmap for sustainability transformation in the city's <i>Waste Management Masterplan</i> (2022) (F1, F3 and F5 demonstrated)	Existing public-sector planning structures had not supported the development of collective visions for sustainability or the envisioning of future pathways in sanitation; however, private sector entrepreneurs and international development agencies were generating knowledge to support alternative scenarios (F2 initiated)
C6 Diverse community-based experimentation with disruptive solutions		Comped supported the municipality and other partners in experimenting with waste separation and recycling systems for schools, markets, and households, disrupting existing waste management practices (F3 and F4 demonstrated)	Through knowledge transfer, matchmaking and coordination, international development agencies supported initial small scale pilots for waste separation and recycling using smart technologies creating initial disruptions (F2 and F4 initiated). Also, a waste recycling business had piloted a new financial model for plastics recycling (F4 and F7 demonstrated)

Table 5 (continued)

Transformative capacity component	Intermediary roles and functions in capacity strengthening in Battambang	Intermediary roles and functions in capacity strengthening in Sihanoukville
C7 Innovation embedding and coupling	Lessons learned through recycling experiments supported the city authorities to facilitate behaviour changes, supporting waste separation at source and increasing organic waste recycling (F3 and F4 demonstrated)	Small scale pilots were yet to be taken to scale and embedded within local practices and institutions and were limited by a lack of intermediation support to scale pilots from a niche to the regime level within the city
C8 Reflexivity and social learning	Multi-stakeholder partnerships provided an opportunity for open dialogue between stakeholders with diverse interests, and knowledge transfer that facilitated social learning and problem solving (F2 and F5 demonstrated)	Top-down leadership directing the urban transformation processes limited the opportunity for local-scale reflexivity and social learning
C9 Working across human agency levels	Multi-stakeholder partnerships enabled coordination of behaviour change in waste management practices from individuals, households, businesses, organisations, and institutions; this was facilitated through knowledge transfer and capacity strengthening of local officials and households (F2 and F3 demonstrated)	Provincial authorities coordinated the engagement of international development agencies, businesses and NGOs in the city, and supported knowledge transfer between organisations (F2 demonstrated). The Municipality had a limited role in coordination across agency levels
C10 Working across political-administrative levels and geographical scales	The Municipality intermediated across political-administrative levels, facilitating waste reforms within the directives of, and resources provided by, national and provincial authorities, while guiding village-scale reforms (F6 and F7 demonstrated)	Provincial authorities were an intermediary between national and municipal authorities, facilitating knowledge transfer through top-down policy directives and guidance

“We leave any kind of sensitivities behind the scenes because confrontation with the government does not make any productive outcome at all. So, we want to use softer advocacy, within the government, and then do something to show the government that this could be the way to solve the problem.”

- *Flexibility in navigating different relationships*

In Battambang, Comped presented itself flexibly to different organisations – i.e., for international development agencies, it provided *“community development and education support”* and presented as both a composting business and technical assistance provider for the municipality. This enabled Comped to creatively interact with different stakeholders and match their needs, facilitating capacity strengthening.

- *Inclusive leadership and municipal autonomy*

Battambang municipality’s transformative leadership skills and autonomy were important factors enabling it to be an intermediary across political-administrative levels and geographical scales. The municipality’s track record of success with sustainable city reforms resulted in the national and provincial authorities seeking to delegate more responsibilities and budget to the local authority. With this autonomy, the municipality became relatively more open to dialogue directly with technical assistance providers (e.g. international development agencies and local universities) and consultative with its residents and stakeholders in planning and program delivery. On interviewee highlighted Battambang municipality’s consultative leadership approach:

“Strong leadership is a key factor... [Battambang municipality] put everything on the table and did not really have a bureaucratic system in place, so that everyone is happy to work and coordinate with them. In the meantime, they also understand the overall challenges at the ground on behalf of the people, on behalf of the community, and they also provide both leadership and technical experience in the city to bring different experts to visit the city, also people’s participation to the city development.”

On the other hand, Sihanoukville municipality’s limited autonomy resulted in a general sense of inertia with the existing sanitation systems, and a focus for the municipality only on day-to-day operations. This led to intermediary actors (within the municipality and any potential partners to the municipality) having limited success in stimulating sustainability transformations. One interviewee highlighted, for example, how this top-down governance approach limited their project implementation:

“The [project] was something that was largely at the behest of the [Provincial] governor. Despite us attempting to do a reasonable degree of stakeholder engagement and community engagement to inform this, the ultimate decision was certainly made from the top. That is also a reflection of how decisions are made within government.”

Overall factors that impacted the effectiveness of intermediaries

Therefore, while Battambang and Sihanoukville were two similar-sized cities in Cambodia, our research illustrated that the different local social-political conditions in

Table 6 Differences in governance and intermediaries’ roles

Intermediaries in Battambang	Intermediaries in Sihanoukville
<ul style="list-style-type: none">• City had a positive national profile and reputation because of its “sustainable city” awards (from ASEAN)• Local administration (municipality) empowered and relatively autonomous• Increasing number of active intermediaries brokering solutions• Key governance actors were open and more receptive to intermediaries	<ul style="list-style-type: none">• Politically sensitive city due to high level of foreign investment and reputational concerns with the ‘over run’ of investment• Top-down governance from the national level with decision-making control• Intermediaries have found it difficult to become trusted partners• Recent shift in enabling environment• Some intermediaries were starting to broker knowledge and form coalitions

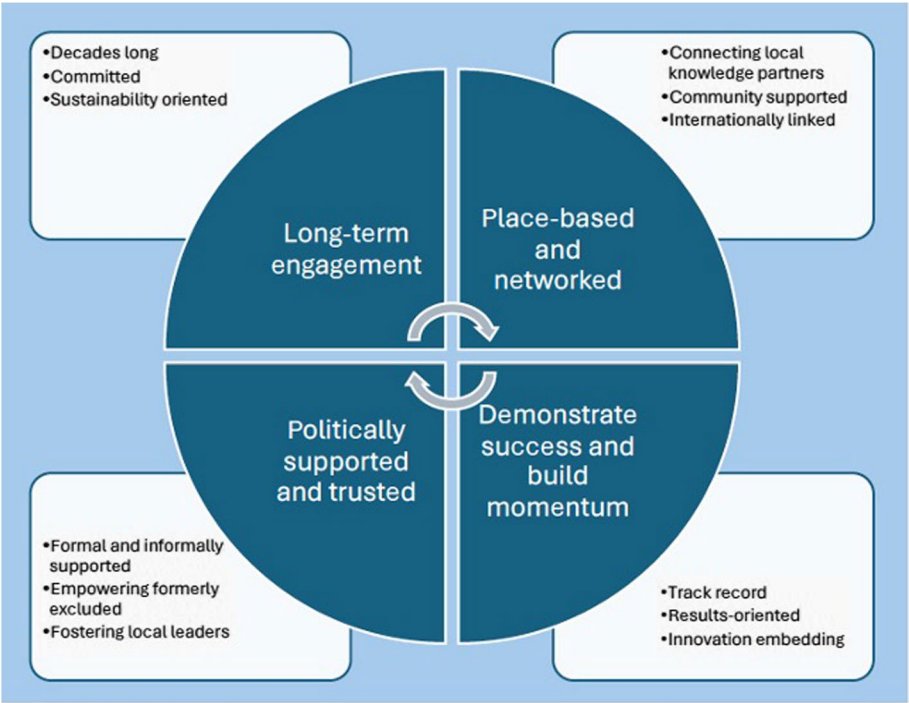


Fig. 3 Key factors that impact the effective intermediaries (source: authors)

each of the cities led to different governance arrangements, which, in turn, resulted in different roles for intermediaries, and difficulties for some intermediaries to establish trusted partnerships, and support knowledge brokering and collaboration (see Table 6).

Our research showed that intermediaries facilitating urban partnerships in Cambodia could have a catalytic role in strengthening urban transformative capacities, but their effectiveness depended on the following key contextual factors (see also Fig. 3):

1. *Independent and long-term engagement of the intermediary is needed to build trust and cooperation over time.* For example, Comped had more than two decades of collaboration with Battambang municipality, as a foundation for its trusted partnership. Intermediaries – such as international development agencies and sustainability

entrepreneurs – in Sihanoukville had a shorter-term (less than 5 years) partnership with the municipality and were still gaining trust within the partnership. In Cambodia and other lower- and middle-income countries, intermediaries are often international development agencies (e.g., United Nations agencies, multilateral development banks, and bilateral donors) with power and resources but can face challenges in gaining traction locally. Our case study research shows that these types of organisations need to establish local trusted relationships (i.e. effective local partners) and have a long-term presence to be effective.

2. *Placed-based knowledge and networks enabled the intermediaries to build trust and relationships.* Locally-based intermediaries with a strong local understanding of the unique context and conditions within the city had a comparative advantage in providing context-specific knowledge development and relationship brokering. At the same time, the ability of the intermediary to connect to knowledge networks and resources outside of the local settings – for example, through global funds and platforms – enabled greater access for the city to a diversity of knowledge and financing sources for transformative capacity strengthening. Comped in Battambang had deep local contextual knowledge and international networks, attracting partnerships through global sustainability funds, bilateral donors, and carbon finance. On the other hand, Sihanoukville was yet to develop an ecosystem of place-based and networked actors supporting the sanitation reforms; most reforms were top-down and infrastructure-led, and did not involve local communities, businesses or local NGOs in their evolution or maintenance.
3. *A supportive socio-political enabling environment was needed for intermediaries to play an active and trusted role.* In the two cases, different governance settings either enabled or limited the role of intermediaries in transformative capacity strengthening. While Sihanoukville's top-down governance structures had made it difficult for intermediary organisations to establish partnerships, in Battambang, the decentralisation of responsibility and local autonomy of the municipality supported the local authorities to establish sustained and effective partnerships. Once Comped became a trusted intermediary partner for Battambang City, it was able to help facilitate sanitation reforms through both formal and informal channels, actively work to connect and empower formerly excluded urban stakeholders and foster the transformative leadership capacities of municipal officials.
4. *Once intermediaries were established in a city, their delivery of successful capacity-strengthening projects could build momentum and sustain transformations.* In Battambang, the main intermediary, Comped, delivered various technical assistance programs funded by different agencies over two decades that cemented its role in capacity strengthening. The partnership's early successes had helped build momentum and attract additional support for the city. In Sihanoukville, short-term pilot projects associated with smart technology had limited sustainability, and a wider range of capacity-strengthening projects were needed to build momentum.

In the following section we discuss how these case study findings in Battambang and Sihanoukville relate to the broader literature around the factors that impact the effectiveness of intermediaries in transformative capacity strengthening.

Discussion

These case studies provide some lessons for other actors seeking to act as intermediaries and strengthen urban transformative capacities, especially in other lower-middle income countries (where there may be resourcing and technical constraints within government agencies) and whereby intermediary actors outside of government can have a significant role in transformations. We highlight the following key factors as necessary for actors seeking to co-design or co-produce capacity strengthening as intermediaries to support urban sustainability transformations.

Structural conditions, politics, and place-based factors matter

Our research aligns with earlier studies that show that the effectiveness of intermediaries is impacted by local structural conditions and priorities (Ehnert et al. 2022), and place-based factors (Peris-Blanes et al. 2022). We found that each intermediary needed to be trusted and politically supported by the most powerful actors within the urban contexts of the two transformation case studies. For one city, this meant the local authority (Sihanoukville municipality) needed to gain political support and trust from the higher-level authorities (national and provincial governments) before opening itself out to broader intermediation partners.

Macro-level factors of financial security and political support for sustainability transformations can impact the willingness of key actors to prioritise transformative capacity strengthening (Ehnert et al. 2022). Previous research has shown that even within the same city, the different historical and cultural trajectories of the sectors/systems being transformed, have impacted the effectiveness of intermediaries in capacity strengthening. For example, Peris-Blanes et al. (2022) compared transformation of agri-food and energy systems in Valencia (Spain), and found there was much greater social-political support for sustainability transformation in the city's agri-food system, as it is perceived as central to the city's history, heritage and identity.

In our research, we also found that the place-based factors of reputation and identity in Battambang (where the city is being shaped as an internationally recognised sustainable city) underpinned its high level of support for urban sustainability transformation and the willingness of key actors to collaborate with intermediaries. On the other hand, Sihanoukville's sensitive geopolitical context created perceptions of overly high levels of foreign investment, which meant there was limited macro-level support for actors external to the government to intermediate an urban sustainability transformation.

Skills and capabilities of intermediaries can play an important role

Building trust and establishing a long-term partnership with key decision-making authorities to shape urban transformations requires various attributes and capabilities, including diplomacy, credibility, adaptability, political-cultural nous, and the ability to facilitate effectively. In Battambang, both Comped and the municipality demonstrated these attributes and capabilities, and this attracted the support and participation of a wide range of other key actors, evolving into the city's multi-stakeholder partnership. Our research aligns with prior studies highlighting key

intermediary capabilities: the ability to provide trustful ‘translation’ (Argyriou 2020), facilitate creatively (Hamann and April 2013), ability to empower (Wolfram 2019), and adaptability (Novalia et al. 2020).

These attributes and capabilities are also reflected in the broader urban transformative capacity of “transformative leadership” (Wolfram 2016; Webb et al. 2023; Glaas et al. 2019). Webb et al. (2023) emphasise that transformative leadership should be both “formal and informal”. Wolfram (2016) highlights that transformative leadership can be conceived in terms of polycentric relationships among change agents, from political elites and place-based and/or issues-driven communities in society. Asadzadeh et al. (2023) emphasise that collaboration and leadership go hand in hand, and include the transformative processes of cooperation, coordination, and harmonisation.

Positionality and the level of influence of intermediaries should be understood

Our research aligns with other studies that highlight the importance of understanding the actor landscape and the local power dynamics for interventions of intermediary actors aimed at strengthening transformative capacities (Abson et al. 2017, Sierhuis, Bertolini and Van Winden 2023). Intermediaries are likely to only strengthen transformative capacities with informal and formal political support and through having established a network with a cross-sector of society, from the most disempowered to the political leaders (Novalia et al. 2020). Intermediaries’ understanding of the local power relations, including ‘transformative power’ and ‘reinforcing power’ (building on the framework of Avelino (2017)) is important for determining and prioritising the level of intermediary engagement with different local actors for capacity strengthening.

On the other hand, our research shows that an intermediary does not need to initially have a high degree of political clout or decision-making power to be effective. In Battambang, Comped initially had limited power, but became increasingly influential over time through its relationships with authorities and international development agencies, and it was able to expand its role through collaboration and successful capacity development projects. Comped’s intermediation occurred initially within niches, then expanded within the regime, and then more systematically over time (across niche, regime and landscape levels), drawing on the categorisation of Kivimaa et al. (2019). On the other hand, the top-down structures of authority in Sihanoukville initially prevented the emergence of partnerships and the embedding of intermediaries in the local governance structures, limiting the role of intermediaries within niches.

Limitations and opportunities for further research

While we have gained some key insights from our case studies that is relevant to actors to the design of intermediation, our study is limited by its comparative case study design (focusing only on two cities). Further empirical research could be undertaken on a wider range of cities and contexts to ascertain any similarities or differences. Further research could also investigate and distinguish which of the factors enabling or limiting the role of intermediaries in transformations are external (i.e., driven by environmental, political, social, and economic conditions) and which factors are internal (i.e., based on their personal or organisational attributes and capabilities of intermediary actors), and how these can be navigated and shaped to support their role in strengthening of transformative

capacities. Further research could expand on key characteristics (including capabilities) of urban leaders, as intermediaries facilitating transformations.

Conclusion

A wide range of organisations and/or individuals can act as intermediaries and strengthen urban transformative capacities. Our research adapts Wolfram's urban transformative capacities framework, providing insights into how these intermediary actors can position themselves and best develop their capabilities and awareness of when the conditions are appropriate for capacity strengthening. It also deepens our understanding of how to structure these capacity-strengthening partnerships for success and provides examples of how these intermediary arrangements have evolved from the two case studies. Using these case studies and expanding on the existing literature, we have identified key factors that impact the effectiveness of intermediaries:

- (1) their level of independence and long-term engagement (to build trust and cooperation over time),
- (2) the degree to which they are place-based and networked,
- (3) the extent to which there is a socio-political enabling environment that supports the role of intermediary actors, and
- (4) the extent to which intermediaries have demonstrated successful capacity strengthening that builds momentum and sustains transformation processes.

In establishing and sustaining intermediary partnerships aimed at supporting transformative capacity strengthening, it is important to consider these factors and adapt interventions by intermediaries, to drive transformative changes and avoid the misallocation of scarce resources (e.g., of governments and donors).

Abbreviations

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
CIUS	Cambodian Institute for Urban Studies
COMPED	Cambodian Education and Waste Management Organisation
IGES	Institute for Global Environmental Strategies
NCSD	National Council for Sustainable Development
NGO	Non-Government Organisation
UN-DESA	United Nations Department of Economic and Social Affairs
UNESCAP	United Nations Economic and Social Commission
UNIDO	United Nations Industrial Development Organisation
USD	United States Dollars

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Authors' contributions

FL: Conceptualization, Investigation, Methodology, Data curation, Writing – original draft, Formal analysis, Writing – review & editing. JP: Conceptualization, Supervision, Writing – review & editing. MR: Conceptualization, Supervision, Writing – review & editing.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

All research participants provided written and/or verbal consent to participate in the research project, as required by the project's approved Human Ethics Application.

Competing interests

The authors declare no competing interests.

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