Sustainable building arenas: Constructing a governance framework for a sustainability transition in Cambodia’s urban built environment

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Abstract. Transition governance approaches for the building sector have been discussed for more than a decade. Very little work has however moved beyond the socio-political contexts of the Global North to scrutinize the spatial-institutional challenges of sustainability transitions in the Global South, or more illiberal contexts. Consequently, this paper introduces a transition governance framework, a Sustainable Building Arena (SBA), that addresses the contextual particularities of the urban building regime and its de/stabilizing factors in the case of Cambodia to inform transformational change. The design of the SBA draws on the literature on urban transition management, transition management in the Global South, as well as transdisciplinary transition management arenas, and extends these concepts to Cambodia’s urban built environment. It furthermore builds upon the results of an extensive analysis of the socio-technical system and an evaluation of residential buildings in Phnom Penh, including indoor environmental conditions. The SBA is conceptualized as an informal institution and as a protected and co-creative space at the science-policy-business-civil society interface. It allows sustainability-minded but often marginalized actors to co-produce and pluralize knowledge - including the co-development of problem framings, visions and transition strategies – and facilitates cooperation, as well as the creation of alternative discourse coalitions and networks of social capital. Overall, the paper argues that such scientifically grounded and participatory processes, that are attentive to and designed for the particular spatial-institutional context, can indeed support the development of actionable knowledge, the empowerment of marginalized actors and support collective action for transformative change in the built environment sectors in contexts outside the Western liberal norm of transition studies.

Keywords: Urban sustainability transitions, Global South; transdisciplinary research; transition management, Cambodia
1. Introduction

Transition governance approaches for the urban built environment sector have been discussed for more than a decade. Little work has however moved beyond the socio-political contexts of the Global North to scrutinize the spatial-institutional challenges of sustainability transitions in the Global South, or illiberal contexts [1,2]. While most transition knowledge and concepts stem from the Global North, many sustainability challenges are however located in the Global South [3,4]. As their spatial-institutional and particularly their socio-political contexts differ starkly, it requires meaningful understanding of heterogeneous contexts and urban sustainability transition processes, i.e. “processes of non-linear change for sustainability that profoundly transform cities and the systems they form part of” [5] and furthermore adequate transition governance frameworks [6–8]. This is pertinent as transition challenges are just as much related to politics, institutions and governance as they are to technology [7,9].

Consequently, this paper introduces a transition governance framework, a Sustainable Building Arena (SBA), that addresses the contextual particularities of Cambodia’s urban built environment regime and its de/stabilizing factors to support transformational change. We argue that the context-sensitive SBA framework and its key principles, including a differentiated inclusion of actor types and changing actor constellations throughout the SBA process, as well as the breaking of hierarchical relations in the SBA context are also useful for applications in other heterogeneous transition contexts. The paper therefore aims to add to the literature on sustainability transitions, particularly those in cities of the Global South and seeks to contribute to the global challenge of delivering sustainability in cities and the urban built environment. This framework brings together the literature strands on urban transition management (2.1), transition governance frameworks for the Global South and illiberal contexts (2.2), and research on Cambodia’s transition context (3). These will be briefly discussed in the next part, before the SBA is subsequently outlined (4).

2. Review of Relevant Literature

2.1. Urban Transition Management

Transition Management (TM) is a theory of societal change management that builds on complexity science and governance theories. It is both an analytical and an operational tool. As an operational governance approach, it aims to support large-scale structural change of socio-technical regimes towards sustainability by mobilizing selection pressures against the dominant socio-technical formation of the regime through stakeholder engagement and the support of niche activity [10–13]. TM applications aim to change institutional structures, practices and cultures, and therefore “work at the fringes of existing institutions” [14]. Key principles of TM involve long-term thinking, radical incrementalism, and a focus on systemic insights, social and institutional learning and co-creation. The operational framework of TM distinguishes four levels of governance activities, namely a strategic, tactical, operational, and a reflexive level. Governance activities on the strategic level involve long-term and system-level aspects, including the development of a shared understanding of current challenges and a desirable long term vision for the system. This involves the establishment of co-creative fora where selected actors engage cooperatively. On the tactical level, participants of the transition arena shift the focus to the mid- and short term and to sub-elements of the system to break down the vision into a set of achievable steps (Transition Agenda). The operational level then involves the actual planning and implementation of specific projects or experiments in the short-term, while the reflexive level finally deals with monitoring and evaluation activities [14,15]. The literature on transdisciplinary research highlights that such fora offer promising possibilities for the co-production of knowledge at the interface of policy, science, business and civil society [16].

After an initial focus on societal systems (as sectors), transition scholars, recently, increasingly applied TM to spatial units such as cities. Different concepts, such as urban living or transition labs, were developed for its operationalization on the city level [11,17–19]. Key aspects of applying TM in cities involve geographic, personal and institutional proximity and interactions between scales and
domains. In urban TM, participants are considered to take part not only as professionals, but equally as inhabitants who might identify more with the city and can hereby connect more through a shared purpose [14]. TM has however been criticized for being Euro-centric, lacking contextual considerations, or being “devoid of the sense of place and space” [6,20]. We will therefore move forward to discuss approaches that attempt to contextualize (urban) TM to heterogeneous settings of the Global South.

2.2. Transition Management in the Global South

Only in recent years have scholars begun discussing transitions outside of the Western European heartland of transition studies. In the Global South, characteristics of socio-technical regimes, their spatial-institutional contexts and processes of regime de/stabilization processes arguably differ significantly from those in the North [21–23]. Scholars have identified a number of tendencies that can characterize transition processes and transition contexts in the Global South. Some, such as [21] and [24] argue that the instability and diversity of regimes are generally higher and connect this to instable political and economic conditions. Here, institutional differences are frequently highlighted, including weak or illegitimate states, low regulatory enforcement and mixtures of partially functioning informal and formal institutions [25,26]. These are contrasted by the implicit assumption of the conventional transitions literature of liberal democracies with strong institutions and markets [27]. Furthermore, stark inequalities, histories of resource extraction, and mismatches between post-colonial political structures and previously existing institutions and practices are raised as relevant influences on transition contexts in the Global South [3]. Therefore, discourses on just transitions stress the relevance of approaches aiming at systemic change leading to increased levels of both sustainability and human well-being [28]. With these different regime and transition characteristics, euro-centric [20,27,29] and culturally biased [30] TM approaches must be contextualized to or designed for heterogeneous transition contexts of the Global South [31]. Some studies have initiated first attempts to do so, by applying transition management context-sensitively or with conceptual adjustments [29,32].

Having adapted transition management methodologies for the application in the water infrastructures in urban Sub-Saharan Africa, [27] recommend the consideration of the plurality of practices within a socio-technical system in the GS, (land) ownership, traditional forms of decision making, and a participant selection sensitive of local interpretation of power dynamics, tensions and conflicts of interest. To address the effects of illiberal political contexts in the Global South, – i.e. contexts where democracy is institutionalised but repressed through weak states, state capture or other forms of authoritarian influences – [6,7] have built on transition management and transdisciplinary research to design “Transdisciplinary Transition Management Arenas” [33]. Hereby, the authors aim to create informal fora, where stakeholders build coalitions, co-develop knowledge and capabilities, to prepare policy options in anticipation of the opening up of policy windows in illiberal democracies – however without scrutinizing the actors involved and the selection process of participating stakeholders. Still, they highlight that in illiberal contexts, incumbents can address emerging and potentially threatening processes “with a severe response” [6]. The creation of “safe” spaces is therefore crucial for urban transitions in such contexts in the Global South. This is also highlighted in the concept of “safe enough” or “transformative spaces”, which emphasizes that these transformational fora remain political and conflictual, despite guiding principles of collaboration, dialogue and reflexivity [3]. These spaces or fora shall not only allow for the co-production of knowledge, but shall crucially also empower participating actors [34,35]. This empowerment can be understood as “the process through which actors gain the capacity to mobilize resources and institutions to achieve a goal” [36]. A variety of transformative capacities or capabilities are discussed that are required for urban actors to “purposefully initiate and perform” urban sustainability transitions [5]. Avelino highlights that the empowerment involves not only the access to resources and institutions and the adequate strategies for their mobilization, but importantly also the willingness for these endeavors. This intrinsic motivation of actors can be connected to their perceived level of impact, competence, meaning and choice [36]. We will now move forward to discuss the spatial-institutional context of our case study, Phnom Penh, Cambodia.
3. Spatial-institutional Transition Context: Phnom Penh, Cambodia

Cambodia’s recent past has seen various societal change processes. To grasp this multiplicity, scholars employed the term of Cambodia’s “triple-transition”, considering the more or less realized transitions “from armed conflict to peace, from political authoritarianism to liberal democracy, and from a socialist economic system to a market-driven capitalist one” [37]. The United Nations Transitional Authority of Cambodia was tasked to guide this process and is one of many governance interventions, targeting Cambodia’s political economic setup. Studies show that their effects are usually not as planned [38], often leading to hybridizations of intended – mostly Western-based – ideas and local norms, notions and interpretations [39], or its rearticulation, and transformation by local elites [40]. This includes the resistance to the donor-driven institutionalization of Western principles of transparent processes in order to preserve a “discretionary arena within a shadow state for political horse-trading amongst former adversaries” [41].

Cambodia has thus proved to be a difficult context for such interventions, especially those pushing for liberal democratic principles [38]. The resulting political-economic system is therefore discussed as “Neoliberalism with Cambodian characteristics”, i.e. a patronage system where local elites have been able to transform, and rearticulate neoliberal reforms focusing on rent seeking and the stripping of public resources [40]. It is commonly argued that the Cambodian society is characterized by hierarchical structures and a high power distance, patron-client relations, passivity, low levels of trust and cohesion, and being disinclined to change and participatory decision-making. [38,42,43]. At the same time, it is acknowledged, that socio-political structures in Cambodia are in a “continual state of flux”, requiring a constant critical re-evaluation of such conventional characterizations [42]. Still, social structures are discussed as multifaceted, with “rhizomic” interpersonal relations extending beyond the public-private dichotomy, including kinship, patron-clients, clans, families, and other socio-economic organizations. [44,45]. Civil society and civil society organizations are observed to be weak, often suffering from state suppression [46,47], with emancipatory spaces under “state crack down” [48] and therefore few remaining “public arenas of exchange” [49]. In this climate, the participation in civic activities, particularly those aimed at the empowerment of citizens and advocacy is aggravated – especially when potentially upsetting prevalent power relations [42]. The donor-driven decentralization process meanwhile has been patchy, with still limited power and resources on the subnational level as well as unclear functions, resulting in a lack of local capacity to respond to citizens’ needs – thus lowering the interest of communities in local planning processes [50].

Regarding the rapidly changing urban built environment in Cambodia, particularly in Phnom Penh, scholars critically discuss the poor implementation of plans, forced evictions, unsustainable city development, socio-economic inequality, social segregation, accumulation by patronage, and challenges related to institutional capacity, basic service provision, and a lack of clarity in roles and responsibilities, etc. [40,51,52]. In this context, urban development is dominated by private- and project-led planning and visioning practices and individually negotiated relationships between developer and state [47]. This also encompasses the increase of real estate development where many land areas, including seasonally flooded catchment zones were (re)filled and transformed [53]. Previous studies found that current socio-technical regime practices and incumbencies are stabilized amongst others by (neo-)patrimonial structures [23]. It was shown that it is therefore primarily these social and normative commitments that must be overcome for a transition rather than economic or technological ones – as primarily discussed in the Global North. It has also been shown that stabilizing effects of (neo-)patrimonial structures are particularly strong in the built environment sector because it offers one of the highest rent-seeking possibilities [54]. Initiatives (and policies) that circumvent or destabilize (neo-)patrimonial networks are therefore regularly blocked by incumbents [40]. Still, the Cambodian Government has initiated first steps towards ‘Green Building’ policies. Furthermore, a number of sustainability-oriented actors and sustainability-themed marketing practices has appeared – joined by the emergence of a group of educated, young, globally-connected urbanites with relatively high incomes and changing values and demands – and thus potentially offering transformational potential [23].
4. Conceptualizing a Sustainable Building Arena

Overall, the SBA shall provide the framework for the constitution of a co-creative and ‘safe enough’ space where knowledge and transformative approaches for the urban built environment are co-developed. As a multi-actor dialogue and co-creation platform, the SBA aims to support the co-development of transformative capacities and knowledge, alternative discourses, as well as processes of coalition building and networking. It aims to empower change agents by facilitating interaction, coalition building, and the co-production and communication of knowledge while “protecting” the interactive space from dominant positions with interests in the status quo. It thus aims to support the participants’ capacities to initiate and drive transformative change towards urban sustainability. It is conceptualized as a reflexive space, where the co-creation of knowledge is realized through deep interaction of different stakeholders during two cycles of TM workshops, to allow for transformative learning. We will now discuss general considerations of the SBA, before moving to the different phases of the process.

4.1. General design considerations of the SBA

The SBA is conceptualized as an institutional site that aims to support social innovation for transformational change towards sustainability in Cambodia’s built environment sector. Here, we want to stress a number of points that are partially discussed in the literature and that are of particular significance for the specific context of the Cambodian urban built environment and add a few conceptual contributions. These relate to the establishment of a ‘safe enough’ space, the involvement of actor groups and the temporal curtailing of hierarchical relations in a Southern transition context characterized by (neo-)patrimonialism.

A fundamental task is the design of the SBA as a safe or ‘safe enough space’ [3] that shields away selection pressures and allows participants to co-produce knowledge and collaborate on ideas, problems, strategies and actions (relatively) freely. While the protection and creation of “safe” or “safe enough spaces” is generally relevant, it is of utmost importance in illiberal cases like Cambodia, as change-oriented fora are repressed and crushed. To this aim, it is crucial to minimize the control of incumbents that exercise reinforce power aimed at the reproduction of the status quo. The SBA is therefore designed as a closed space where access is rigorously restricted to selected participants and internal communication is – at least initially – forwarded to the outside in a very controlled way. This active shielding [55] shall support the free communication and exchange of ideas and builds on – and supposedly builds itself– trust amongst the participants. Considering the five dimensions of “safe spaces” of [49], it is thus the emancipatory and empowering dimension that is a key focus of the SBA by means of shielding and hereby supporting free expression. The degree of shielding the safe space is set to diminish over time, as knowledge co-production, narratives, network formation, trust-building, etc. are advanced. Moving from a strongly shielded site, the platform is broadened for the second workshop cycle to increase its momentum, systemic effects and reach out to a wider set of actors. It becomes clear that the safety or protection of the governance niche is highly contingent on the critical selection of its participants, and that as the involvement of different types of actors increases, the level of shielding sinks.

Therefore, the SBA framework pays particular attention to the selective inclusion of and focus on participants during the SBA process. Generally, participants are ‘visionary people’, that are able to think out of the box, and that are intrinsically motivated. They are innovators or have shown their interest in themes of urban built environment sustainability in some way. Importantly, they become part of the SBA process as individuals, rather than as representatives of affiliated institutions. This is repeatedly highlighted during the events to limit institutional influence and to create a common good mind-set beyond institutional roles [13,56]. The SBA moves beyond other TM frameworks and considers not only actors that are affiliated with relevant state institutions, firms, NGOs, civil society groups or academia, but also frontrunner youths as current and future urbanites and building users. This also allows to better account for the plurality of transformative agency in cities of the Global South, as postulated by transdisciplinary development researchers [1]. As brought forward by others, “frontrunners” are key
actors for the SBA and the focus of the first SBA cycle is on this group of solution-driven actors from the building and urban development sector that innovate and that primarily exercise innovative power [36,57]. Applying the framework of [57], we however argue, that in an illiberal context like Cambodia, this group should be joined by a substantial share of actors that might be considered as ‘connectors’: That is, actors that have far reaching networks within and beyond the sector, and who are able to navigate through the rhizomic social structure, incl. (in)formal interpersonal relations, the networks of patrons, clients, of kinship, etc.; they can support coalition building, negotiate relationships with patrons and can potentially link innovations from niches to socio-technical systems, and support institutionalisation processes in the mid- to long-term - i.e. they can exercise transformative power [36,57]. Their stronger involvement in the SBA addresses the contextual primacy of the need of overcoming social commitments instead of economic or technological ones and the heightened relevance of the politics of alliance building [58]. Further actors involved in the SBA are system-oriented topplers, i.e. actors that can support the change and phase out of existing institutions, and supporters, whose endorsement can provide legitimacy and increase momentum [57]. For a setting with restricted access to information and information politics, we add an additional actor role to the actor typology of [57]: the ‘informant’, i.e. actors that can access information due to their position or networks and that are willing to share it with other change agents.

Within our framework, the primacy of different actor groups shifts throughout the SBA process. While all these types of actors are generally required for the SBA process, the focus lies on frontrunners (and to a lesser degree on informants) in the first cycle and moves to the more diverse group of change agents in the second (including connectors). This goes along with a general broadening of actor groups from workshop cycle to workshop cycle, to develop innovative solutions and more progressive or radical documents and narratives which are then later on discussed with a broader, more system-oriented and potentially less sustainability-driven actor group.

Another critical design feature addresses the breaking down of hierarchical relations. Collaboration is thus organised by facilitators in small, informal and heterogeneous groups to overcome regular interaction patterns and engage participants actively. These groups are useful for initiating lively discussions, support the building of relationships and collective learning and knowledge generation processes. In our setting, it is applied to (temporarily) limit the effects of the hierarchical relations that are characteristic for the Cambodian context [59–61].

4.2. **Phases of the SBA**

4.2.1. **Contextualization.**

Based on a literature review of transition management concepts for urban areas, the Global South and illiberal democracies, and an analysis of the socio-technical system in Phnom Penh, the transition researchers developed a contextualized concept for the SBA process. A key step then is the selection of the members for the “Transition Team” (TT). The TT members are chosen based on their role in the urban built environment sector, and their intrinsic motivation and dedication to urban sustainability. They are drawn on from existing relationships, snowball sampling and the extensive field work of the initial system analysis [23]. To start the arena process, the TT meets for an Actor Mapping Workshop and maps stakeholders from the urban built environment sector according to a framework that considers their exercised power, actor types, and their relevance for a regime transition [36]. This mapping informs the inclusion of actors in the SBA. In a subsequent workshop, the draft SBA concept is discussed and reified collaboratively with the TT. The two SBA workshop cycles thus build on the preceded actor mapping workshop (AM) (who?) and the co-design workshop (CD) (how?) (See Figure 1, where the grey scale indicates decreasing levels of shielding).
4.2.2. Framing of the Transition Challenge.
The first phase of the SBA aims at the co-development of a participatory framing of the transition challenge. It starts with an inspiring TT input based on the system analysis. Participants can furthermore optionally draw on additional input in the form of “Challenge Cards” that highlight individual transition challenges from the system analysis. This input is combined with the knowledge held by the participating stakeholders in a transdisciplinary dialogue process [6]. This involves the identification, articulation, hierarchization and integration of problems in small groups. The collaborative framing of the transition challenge arguably supports participants to familiarize themselves with the different positions and values in the group and to overcome institutional perspectives [10].

4.2.3. Vision Development.
In the second phase, the participants co-develop and express their key priorities and principles for their envisioned futures of the local building and urban development system as well as images and narratives of desirable futures in a common vision. To get participants into future mode and move beyond conventional ideas, facilitators can highlight the dramatic changes of the recent past.

4.2.4. Strategy Development.
In the third phase, back-casting methodologies are used to connect the future scenarios and narratives to the present in order to develop concrete transition pathways and strategies. Hereby, a first draft version of a “Transition Agenda” is established. To define, prioritize and further elaborate transition pathways, groups work on individual transition pathways to further operationalize the vision(s). Participants then identify short-term actions, i.e. transition experiments and “spin-off activities”, and possibly a technical roadmap that align with these pathways. The transition agenda thus involves visionary images, pathways, and ideas for short-term action, with the actors seeing themselves and their networks as an essential part of both the future and the pathways towards the envisioned future [10].

4.2.5. Evaluation and monitoring.
The evaluation is undertaken during and after the workshop cycle with silent observers and ex-post questionnaires. A key focus here is the evaluation of (dis)empowering effects of the workshop as perceived by the participants with their individual interpretative styles regarding the four dimensions impact, competence, meaning and choice [36]. Another aspect that is evaluated is the degree to which the SBA can support transformational capacities and the co-creation of actionable knowledge.

4.2.6. Second Cycle and Beyond.
Having moved through the three levels of challenge framing, vision and strategy development, a second round of the SBA is implemented at a later stage. Based on the results and the reflexive process of the first cycle, the design of the second cycle is adapted; a larger group of participants then
updates and expands the challenge framing and the vision and develops a “final” transition agenda. The second cycle therefore has a stronger focus on the subsequent operationalization of the transition agenda in local experiments and in connecting the innovations, narratives, etc. to the existing socio-technical system. As argued above, the shift of focus involves a shift in the composition of the participant groups in the second SBA and decreased levels of protection: Participants of the first cycle continue to play a key role, yet they will be joined by additional participants, primarily those that can be considered ‘connectors’, and also ‘topplers’, and ’supporters’; this equally involves a shift of focus from innovative power to transformative power.

5. Conclusion
If the battle for sustainability will be won or lost in cities, the development of urban transition governance approaches for heterogeneous contexts is of significant relevance. This paper has sought to contribute to this challenge by conceptualizing a transition governance framework that is well-adapted to the spatial-institutional context of Cambodia’s urban building regime. Based on a literature review and a system analysis, the SBA has been conceptualized as an informal institution and as a protected and co-creative space at the science-policy-business-civil society interface. It allows sustainability-minded actors to co-produce and pluralize knowledge - including the co-development of problem framings, visions and transition strategies – and facilitates cooperation, social innovation, as well as the creation of alternative discourse coalitions. Hereby the SBA seeks to empower transformative change agents to increase pressure on the current building & urban development regime and support the emergence of niche innovations while destabilizing and disrupting current pathways within the built environment. The SBA thus aims to support a transition towards a sustainable built environment through niche-level urban and building policy development, and empowered change agents with expanded transformative capacities that apply co-created knowledge and strategies, leverage newly created coalitions in order to develop and experiment with material, regulatory, normative, and discursive practices that lead to the reconfiguration of the dominant built environment regime and towards a more sustainable built environment.

Key contributions of the paper are the increased actor-sensitivity and temporality concerns in the TM process: The SBA framework distinguishes two workshop cycles and differentiates the degree of shielding (decreasing), and the actor composition of the Arena. The group of participants is broadened from particular transformative actors (focus on frontrunners) to a diverse group of transformative actors, while moving from more sustainability-driven individuals to a potentially less sustainability-driven group over time. This shall support the initial development of innovative solutions and more progressive or radical documents and narratives that are then further developed with the broader group. We argue that, generally, the role of ‘connectors’ is of increased relevance in illiberal contexts of the Global South, since it is primarily the social commitments, rather than technological or economic ones, that must be overcome here, when pursuing a sustainability transition. Consequently, questions of coalition building, networking, etc. are of increased importance. Connectors should therefore play an increasing role in the SBA. We furthermore add a new actor role, the informant, which has a significant role in an environment of information politics and hoarding. Contrary to other adaptations of TM to illiberal contexts, we furthermore include frontrunner youth in the SBA process as current and future urbanites and building users to account for the diverse transformative agency. Overall, the paper argues that scientifically grounded and participatory processes, that are attentive to and designed for the particular spatial-institutional context, can indeed support the development of actionable knowledge, the empowerment of marginalized actors and support collective action for transformative change in the built environment sectors in contexts outside the Western liberal norm of transition studies. At the same time, we are well aware of the significant challenges to the governing of socio-technical transition processes, and do not aim to propagate the idea of “cockpit-ism” where transition managers steer systems with their frameworks [62,63]. Instead we see transition researchers in a modest role as policy entrepreneurs, and boundary makers, that set the stage and collaboratively work with other stakeholders to co-produce knowledge, and support the building of coalitions. As the SBA is currently being implemented,
subsequent studies are planned that offer empirical evidence and a critical evaluation of the application of the SBA in Phnom Penh and relate the insights to other contexts. This evaluation will scrutinize the empowerment effects of the SBA, and how a transition governance intervention like the SBA could support the expansion of the transformative capacities of change agents [5,64]. We generally argue however that the SBA framework can already be applied and expanded in other contexts of the Global South, particularly illiberal contexts with scarce public information.

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