

Strategy Framework on Inter-Institutional Transborder Adaptation in Subnational Border-Communities: A Conceptual and Practical Adoption of the Subaltern Climate Change Adaptation Theoretical Model



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ABSTRACT: This paper offers a conceptual adoption of the subaltern climate change adaptation theoretical model—an attempt at an aspirational blueprint for the governance of community-managed and –driven climate change resilience. While it follows the model’s pluralist and critical theoretical frames, it also introduces a practical guide in developing, implementing, and evaluating community-level resilience facilitated and mediated by local institutions through inter-institutional transborder collaboration. It frames adaptation along the almost invisible and unexplored issues of vulnerability and adaptive capacities shared and experienced by different institutions across and beyond state-defined administrative borders, such as the border-*barangays* in the Philippines, or other countries’ small administrative subdivisions that border each other. The strategy framework proposes a method of transformation for local institutions, being vulnerable to climate risks, into becoming decision-makers in policy and practice—a grounded, political, and radical process of local climate change adaptation governance.

KEYWORDS: Subaltern Climate Change Adaptation, Subnational Border-communities, Strategic Transborder Resilience

I. INTRODUCTION

...if there are uniquely ‘adaptive’ elements to [adaptation] efforts, they are those involved in defining problems, selecting strategies, and setting priorities, not in implementing solutions (McGray et al., 2007, p.15).

Day-to-day news from various media platforms informs the common knowledge that humanity is under grave threats—mostly from global epidemic, trade wars, social and technological divide and alienation, armed conflict, and climate change. While one may not cause the other, these threats combined, which unfortunately are happening all at once in some countries, can exacerbate humanity’s capacity to address them holistically and separately. Among the many grave threats facing humanity, climate change and its impacts stands as the most challenging as it can worsen all other threats (BBC News, 2025; UNEP, 2024; NASA, 2024; IPCC, 2021).

While other challenges may possibly be halted in the short term, climate change remains to be the most enduring challenge humanity faces in this century and, probably, the next (WMO, 2025; NASA, 2024; UN, 2024; WHO, 2023). It is reassuring, however, that with both its predicted and uncertain progression and impact, climate change—being a key theoretical and practical challenge—is one issue on which much of humanity’s efforts and plans have been heavily focused.

Climate change has invariably exposed humans to increasing hazards and made them more markedly vulnerable to risks in the future. Institutions, both global and local, public, civic and private, have been into serious scientific analysis and planning, independently and integratively, for effective adaptation strategies (UNDP, 2024; Global Commission on Adaptation, 2019). However, results and evaluations of research and development programs and projects point to one glaring gap in both analysis and action—the need to generate more relevant and context-specific climate adaptation knowledge from the ground. While international and local agencies are not completely lost or overwhelmed in the complexity and uncertainty of climate change,

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they need to seriously endeavor to consider every social scope and context, especially the local community, as source of relevant information for adaptation strategy and policy formulation and decision (UNEP, 2024; Tye, S., and I. Suarez, 2021). It is upon this dire and necessary context that this paper is conceptualized.

With the aim of providing a conceptual illustration and practical adoption of the subaltern climate change adaptation theoretical model (Dascil, R. M., 2025), this paper offers a strategy framework that guides the development, implementation, and evaluation of community-managed and -driven transborder climate change. The said theoretical model posits climate change governance that necessitates an adaptation strategy that considers the nexus between climate change and local institutions into which issues of social dynamics, power structures, and environmental flux congregate.

Guided by said theoretical model, the strategy framework herein offered is a response to two limiting issues of current adaptation analysis and practice. One, climate change-related policies are mostly subsumed within comprehensive and broad policies created from the perspective of international and national decision-making bodies (Haque et al 2018; Keohane 2015; Ahmad 2009; Dascil, R. M., 2025). Such perspective results in large-scale models prescribed for national governments and implemented from the top. Two, while there are sporadic attempts to consider community-level adaptation options, which are recently made visible in national policies, these are strictly bounded by and within state-centric platforms like the local government units (province, municipality, and *barangay*) (Dascil, R. M., 2025). These are indeed necessary and commendable, but they also create policy and practical gaps since vulnerability to climate change impact naturally transgresses state-defined administrative boundaries. Also, while adaptation is addressed at the community-level, the idea of 'community' is politically framed within the bounds of the *barangay*, which is assumed as basis and unit for measuring local vulnerability. In light of the weight of the challenges of climate change, and as argued above, this approach fails to consider the fact that the causes and features of vulnerability, e.g., ecological and social, may extend beyond centralized local jurisdictional boundaries, in such a way that two or three *barangays* (or villages, districts, barrios, communes, and other small administrative subdivisions in other countries) bordering each other may share similar vulnerability and therefore require integrated, coordinated, and/or unified transborder adaptation strategies (Dascil, R. M., 2025).

The said issues are made more problematic in the case of a border-community belonging to two or three different municipalities that differ in administrative and financial capacity and strategic priorities to implement adaptation programs that result in adaptation divide (Dascil, R. M., 2025). Hence, the framework proposes that adaptation strategy formulation and implementation must also be guided by the 'border-community' construct, which helps provide an alternative, albeit a subaltern, roadmap in adaptation strategy formulation and implementation. With this, the paper ultimately hopes to contribute to the understanding and redirecting of adaptation processes—especially adaptive capacity assessment and enhancement that intrinsically empowers local institutions towards transborder climate change governance.

The strategy framework goes beyond the usual *climate change-local institution* dynamics that are common in recent literature. It contextualizes adaptation in the vulnerability and adaptive capacity shared by different institutions across and beyond subnational or intra-state state-defined administrative borders. While it focuses on the adaptive capacity of local institutions (civic, private, public) situated in different ecological zones (upland, lowland, coastal), it also illustrates how inter-institutional transborder adaptation may come in various access and benefit forms, such as learning opportunity, co-management of adaptation projects, technical, regulatory, and financial support, and as conduit to other external institutions. Such may apply to cases of securing shared peripheral development pathways, rehabilitation and protection of shared natural and socio-cultural systems, collaborative ecological monitoring, coordinated monitoring of vector-borne diseases, finding common grounds for learning, and finding solutions to shared risks.

Epistemological construct. Framed along the assumption that climate change governance is a function and fusion of institutional strategy, inter-institutional partnership, and linked ecological and demographic realities, the framework is built around the following epistemological constructs (Dascil, R. M., 2025, p. 361):

- *re-imagining* the 'community' as a *spatio-temporal* (historical space) and *spatio-social* (anthropological space) unit within a particular ecological and topographical zone, instead of the usual state-centric scale (e.g., the *barangay* as community), as locus for dealing with local climate change issues. Hence, the term 'border-community', which herein refers to two or three bordering administrative subdivisions that belong to different municipal or city local government units (LGUs), but share similar geographical features and experience the same climate-related hazards;
- *rethinking* of adaptation in community-managed context, in such a way that the adaptation issues and concerns of one *barangay* (or its equivalent in other countries) are also the issues and concerns of the adjacent *barangay* in the same

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ecological zone; this reveals the potential and necessity of trans-border, horizontal adaptation program integration among local institutions in the border-community; and,

- *refocusing* the adaptation lens on local institutions (both formal and informal) as they are the actual facilitators of climate adaptation on the ground and mediators of intervention programs; this construct can fill the gaps in mainstream adaptation literature and practice with information that can help frame policy debates on local or subnational climate change adaptation.

New Locus, scope and context. Taking on the subaltern climate change adaptation theoretical model, the strategy framework proposes a full consideration of subnational border-communities and the necessity of horizontal adaptation integration across local borders through local institutions, which brings the climate change adaptation strategy debate to a new locus, scope, and context. It considers the uncertain and cross-cutting nature of climate change impacts, and how this theoretically and practically contests or augments state-centric adaptation strategies. With the border-community as locus, and the local institutions as facilitators, the framework re-contextualizes adaptation based on the border-community's (1) shared experience of climate variability and hazard, (2) common geo-spatial realities, and (3) perennial socio-demographic features, resulting from shared social, economic and political structures, and institutional structures and arrangements that shape said features. The framework argues that shared vulnerability in the border-community requires integrated, unified or coordinated transborder adaptation strategy (Dascil, R. M., 2025, p. 360).

Review of the subaltern climate change adaptation theoretical model. Challenged by the limiting essentialism of state-centric, top-down, and centralist adaptation paradigm, and the unexplored potential of the border-community as an alternative locus and scale for, and local institutions as key to, climate change adaptation, the theoretical model that this strategy framework adopts is generally framed along critical social theories and revolutionary paradigms. It engages theories that problematize local borders and promote transborder and cross-scalar adaptation (Dascil, R. M., 2025, pp. 357-360), as follows:

- state-centric political or jurisdictional borders exist for the purpose of restriction, but with climate events and their associated risks increasingly transgressing these spaces, the current border framework becomes increasingly problematic. While available literature dwells on inter-state borders, this framework seeks to identify how local or intra-state border policies interplay with risks and adaptation policies and practices. This necessitates the reframing of current border concepts to advance, rather than restrict, local climate governance by improving connections between local institutions and enhancing inter-institutional capacity to respond to climate change. It assumes that a strategy framework is necessary to encourage border-communities to, for instance, cooperatively manage resources and allow border synergy for enhanced climate change resilience. This form of border thinking calls for a more productive ethic that re-frames the discourses in terms of the impact that borders have on people in an unpredictably changing climate. This way, it seriously recognizes the necessary roles of borders and the barriers to adaptation that they create;
- a democratic form of inter-institutional governance, where information for decision-making productively flows among local institutions can be made possible through transborder and cross-scalar synergistic collaborations that engage multiple institution-actors. While knowledge, information, and other resources play key roles in adaptation and in building and strengthening the capacity of multiple stakeholders, inter-institutional transborder adaptive collaboration can provide exceptional opportunities for the creation, management, exchange and application of relevant climate change information and knowledge. This can greatly contribute to the important dimensions of adaptation—*informed decision-making, stakeholder engagement, adaptation delivery, feedback and learning, and institutional capacity-building*, or as Pound et al (2018), Raymond and Robinson (2013), Datta and Pellini (2012) and Agrawal (2010) argue on what the minimum requirements and features of adaptation should be;
- there is an evident need to interrogate climate change adaptation not as a self-evident analytical framework and normative goal but as an array of discursive coordinates and institutional practices that themselves form the object of analysis (Taylor, 2015). This necessitates a concept of adaptation that fashions a relatively cohesive body of ideas around the relationship between climate change, environment and society. Along with this challenging concept, the theoretical model attempts to see beyond technocratic politics that seeks to contain the perceived threats posed by climate change within existing institutional parameters and offers critical thinking about climatic change and social transformation.

II. THE STRATEGY FRAMEWORK

The strategy framework is driven by two mutually evolving challenges—*climate change impact* as problem, and *border-community resilience (or resilient development)*—an analogous term in wider climate change context) as goal. These are

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contextualized in two crosscutting adaptation phases—adaptive capacity assessment and adaptive capacity enhancement. It relies on the capacity and willingness of local institutions to evaluate their adaptive capacity, assess shared vulnerability with similar and other institutions within the border-community, and establish linkage with the same for continuing adaptation process. It is comprised of four equally important components—inter-institutional transborder engagement, mapping of transborder vulnerability and risk, formulation of transborder adaptation strategy, and implementation of transborder adaptation strategy.

Objectives. As implied above, the strategy framework aims to help guide the analysis, development, implementation, and evaluation of community-level transborder adaptation policies and programs that:

- address the limitations of current mainstream and state-centric adaptation strategies, policies and practices;
- encourage functional transborder synergies between and among local institutions to foster enabling environments for subnational or intra-state adaptation;
- enhance the adaptive capacity of social and natural systems in different ecological settings through inter-institutional local transborder adaptation;
- contribute to the ongoing knowledge production on adaptive capacity analysis and response based on the knowledge, experience and practice shared by local institutions across subnational or intra-state borders.

The framework, which focuses on resilience in the subnational border-community, is fundamentally and logically a cyclical process and continually evolves with the progression of climate change and its impacts. However, depending on the priorities and pace of engagement of, and the complexity of the web of perceived and unforeseen issues that the local institutions face and the strategic changes made on planned activities, the components, in reality, can be recurrent in a given program cycle—hence the possibility of the framework being implemented with spherical and spiral trajectories at the same time. The framework diagram is presented in Figure 1, followed by detailed illustration of its various components.

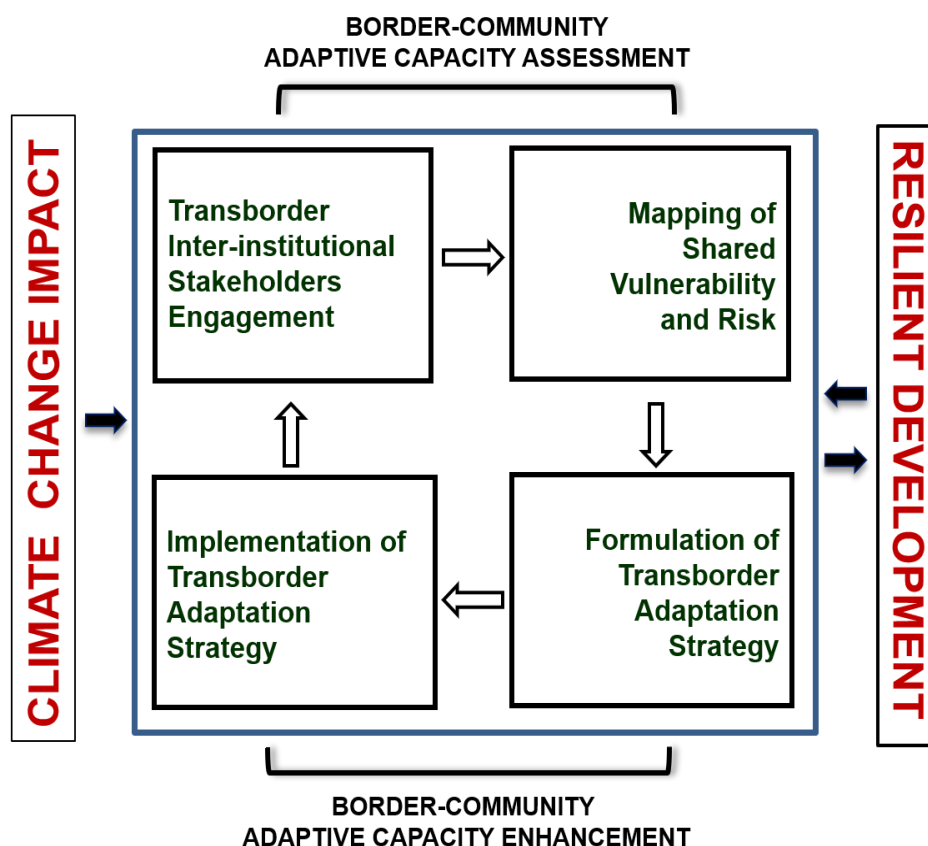


Figure 1. Strategy framework on inter-institutional transborder adaptation in subnational border-communities

Drivers of the inter-institutional transborder adaptation. The framework considers climate change impact and resilience (or resilient development) in the border-community as mutually evolving, and the degree of climate change impact as determined by the scope and level of the local institutions' adaptive capacity. Conversely, the border-community should be able to respond effectively and efficiently to climate stimuli and the degree of climate change impact depends on such response. The vulnerability of the border-community is a reflection of both socio-ecological condition and sensitivity to current climate.

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- Climate change impact—this refers to the observed and projected phenomena associated with climate change such as increase in extreme weather events, sea level rise, changes in the timing and amount of rainfall, and other stresses and hazards experienced in the border-community such as the occurrence of diseases among plants and animals, socio-economic-cultural disruptions, and infrastructural and environmental damage (adopted from IPCC 2007; 2014).
- Resilience/resilient development—this refers to the level of development that reflects the enduring capacity of the border-community to effectively and efficiently resist, absorb, and recover from climate change impact and hazards, preserving or restoring its essential basic structures, functions and identity (adopted from IPCC 2007; 2014). This is either the cornerstone upon which the border-community's vision is anchored, or the local institutions' collective vision in itself.

Phases of inter-institutional transborder adaptation process. Adaptive capacity assessment and enhancement as phases of border-community adaptation process cut across the various components of the framework. Moreover, the framework considers adaptive capacity assessment and enhancement as continuing in order for community resilience or resilient development to be possible, as increased adaptive capacity allows the community to better cope with, adapt to, and take advantage of climate changes. These phases catalyze the social and cultural change in the border-community's adaptation process:

- Adaptive capacity assessment—this refers to the ability of the border-community to adapt to climate change, take advantage of opportunities associated with climate change, and cope with possible consequences; and,
- Adaptive capacity enhancement—this refers to the increase in the border-community's capacity to cope and adapt to climate change such as increase in equitable access to and control over natural and human resources, and adaptation through self-determination.

III. COMPONENTS OF THE TRANSBORDER ADAPTATION STRATEGY

Component 1. Inter-institutional transborder engagement. While it bears equal importance with the other components, sustained transborder inter-institutional engagement is ultimately the most crucial to the effectiveness and efficiency of border-community adaptation. This warrants a continuing and active inter-institutional transborder communication or dialogue. The facilitation of this component, (as well as the other components) may be initiated by institutions with considerable adaptive capacity, such as those with administrative capacity like the *Barangay* Local Government Unit, and active civic institutions like farmers or fisherfolks association. Intervention for facilitation purposes may also come from like-minded external institutions. The following are recommended activities for component 1:

- stakeholders mapping, which aims to identify existing institutions, membership, and vulnerable groups in the border-community, and allow the organization of a *temporary* core group or key stakeholders. Local institutional typology may vary in different countries. In the Philippines, local institutions are commonly categorized as public, private, and civic. These are classified into subcategories: (1) public—local government unit or the *Barangay* Council, public school, rural Health Unit (RHU), and Sangguniang Kabataan (Youth Council); (2) private—business organizations, private education institutions, private health care providers, non-government organizations (NGOs); and, (3) civic—women's association, LGBT group, farmers/fisher folks' association and other peoples organizations (POs), and religious groups.
- initial transborder communication and/or dialogue to create a loose or informal inter-institutional transborder network and encourage increase in the number of stakeholders through inclusive, mutual, and diversity-sensitive appreciation of all institutions in the border-community; and,
- continuing transborder dialogue relevant to the transborder adaptation strategy, primarily to sustain the adaptation process through a formal but egalitarian (non-hierarchical) inter-institutional transborder collaboration. The inter-institutional transborder engagement plan should always include strategies for communicating every aspect of the adaptation strategy through a transparent feed-forward and feedback mechanisms.

Component 2. Mapping of shared transborder vulnerability. Focused on local institutions' lived experiences of and responses to climate change hazards, this part of the process is what can sustainably drive local institutions' understanding of their shared climate risks in the border-community. It provides strong reasons for and identifies the need for sustained transborder inter-institutional dialogue, and leads to the identification of practical adaptation options. The more they appreciate their shared vulnerability, the more the local institutions are encouraged to share in strengthening the border-community's adaptive capacity. For component 2, as part of transborder-community dialogue, it is important that stakeholders conduct the following with emphasis on factors that reveal the border-community's issues of vulnerability and adaptive capacity:

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- historical survey of climate hazards, including the institutions' experiences of how they were affected by such, and existing local strategies, policies and practices on identifying and categorizing hazards;
- mapping of shared ecological vulnerability focusing on shared natural endowments and policies constraining and supporting ecological programs;
- mapping of social-economic-cultural vulnerability, which includes data on socio-demography, cultural practices related to adaptation, state of social services affecting the border-community, coping strategies of different institutions, and relevant policies; and,
- mapping of institutional adaptive capacity as manifested in the institutions' administrative capacity, resources (human and material), programs (past, current, and planned), and institutional partnerships. Issues encountered by the institutions related to these factors must also be explored.

Component 3. Formulation of transborder adaptation strategy. Based on data gathered through continuing shared vulnerability mapping, the transborder inter-institutional engagements result in the identification of transborder adaptation options and development of cohesive and evolving strategies. The following are recommended activities for Component 3:

- mapping of functional local adaptation policies and practices, and selection of transborder adaptation options, i.e., based on actual institutional and inter-institutional vulnerability issues and adaptive capacity;
- formulation of transborder adaptation strategy, which should allow stakeholders to participate in the multilateral organization of adaptation options into cohesive strategy, coherent with their institutional coping and adaptation practices, policies, adaptive capacity, and inter-institutional arrangements;
- integration of institutional development programs, policies and plans in the transborder adaptation strategy, which should formalize the reconceptualization and redirection of institutional development efforts towards resiliency and address the theoretical and practical divide between community development and adaptation; all development efforts should enhance the adaptive capacity of the border-community; and,
- alignment of transborder adaptation strategies, although horizontal in nature, with existing external policies and plans for broader adaptation options and/through partnerships with external institutions (e.g., other government agencies and NGOs).

Component 4. Implementation of transborder adaptation strategy. While the adaptation process is evolving, the implementation of transborder adaptation strategy is also evolving and continuing, and it should be able to proactively and adequately respond and adjust to the uncertain scale and varying nature of climatic changes and risks. The component, which includes strategy implementation, and monitoring and evaluation, is fulfilled through the following activities:

- actual implementation of the strategy, which requires stakeholders to transform the activities' outputs into transborder adaptation strategy and implement the same as key adaptation process. Monitoring and evaluation should be considered as a separate strategic activity; hence, it should have its separate implementation plan. This includes linking with external institutions for support, which resonates the need for integrating the strategy with applicable external policies; and,
- monitoring and evaluation, through which stakeholders can identify what is working and not working and make appropriate and adequate adjustments. It is wise for stakeholders to also request the involvement of external institutions, like the academe, for evaluation purposes.

The above activities illustrate how the various components of the framework can be adopted in the border-community at the operational level. Technically, the framework promotes practical, rather than mere conceptual adaptation strategy and relies on local capacity for knowledge production and strategy formulation and implementation. While common strategy frameworks use the *need analysis-strategy formulation-strategy implementation* paradigm, the framework takes transborder inter-institutional stakeholders' engagement as point of departure for dealing with the other components—mapping of shared vulnerability (need/gap analysis), formulation of transborder adaptation strategy, implementation of the strategy, which are all continuing and evolving, and which are the defining features of sustainable inter-institutional development and transformation.

IV. PATHWAYS TO IMPLEMENTATION

Community-initiated. The framework can be adopted directly by local institutions in the border-communities, which can be messy but also the most inclusive and ideal way to implement the framework. With the framework's form and content simplified and informally but thoroughly introduced to the level of and accepted by the local institutions, allowing the

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process to flow according to the level of appreciation and pace of the community is not only strategic but also ascertains higher level of success.

External institution-facilitated. The most common way of introducing the strategy framework is through external facilitation either by government or non-government organizations. A caveat, though: with climate change on top of governance and intervention agenda, externally-driven approach is the easiest but also the most prone to bureaucratic limitations related to funding and personnel capacity. However, the framework can be introduced to local and national government policy-making bodies and NGOs for inclusion in development and adaptation policy development and programs with caution of allowing the local institutions to be at the center of decision-making related to its implementation.

Research-driven. The academe can help justify the necessity of implementing the framework through on-site research and extension. However, both transdisciplinary and participatory research are highly recommended, as these provide strong reason and avenue for finding new pathways to learning by addressing the transborder issues with and through various disciplinary lens with the inclusion of local institutions. This way, the local institutions remain at the center of research and development. In the context of local adaptation, this gives a picture of the interrelationship of community knowledge and realities and academic disciplines—social sciences, humanities, communication and education and the other branches of knowledge such as the natural-environmental-health sciences, agriculture-forestry-fisheries-food technology-rural development disciplines, mathematics-data-information sciences, engineering and technology disciplines, among other sciences and disciplines. The experiences and perceptions of the local institutions can inform the concepts, theories and methodologies of the different disciplines and how they actually affect each other, and how, as one—the border-community and the different academic disciplines—reveal the utter complexity of the nature of climate change adaptation across subnational borders. This approach can lay the foundation for research and development that can generate evidence, frame debates, and influence policies and practices towards sustainable local climate governance.

Convergence as an implementation approach. With the academe facilitating subnational transborder climate change research, the government and NGOs developing and funding development policy and program, and the local institutions informing research and policy and driving and managing its implementation, the framework and its adoption looks simple and systematic. However, such convergence of capacity and resources and confluence of interests need thorough and transparent planning, which necessitates sincere negotiations and bargaining. In all these, the local institutions must be active participants and not just passive recipients of the adaptation agenda. Indeed, the principles of transformative adaptation should be both the guiding principle and end of this approach.

V. CONCLUSIONS

Offering an alternative to the current and mainstream adaptation frameworks requires a radical social imagination—an endeavor that allow transformative adaptation, both in theory and practice. The subaltern theoretical and strategy frameworks offered herewith are both promising and uncomfortable. It is promising because it goes beyond the usual *climate change-local institution* literature and places adaptation along the almost invisible issues of vulnerability and adaptive capacities shared and experienced by different institutions across state-defined borders. It is uncomfortable, too, because it challenges state-centric scales and proposes a method of transformation from below—i.e., for local institutions to collaboratively lead and manage local adaptation governance.

The framework offers a wide-ranging strategy for community-driven, contextual transborder resilience facilitated through inter-institutional synergy. Wide-ranging as it is, it fashions the complex and fundamental relationships between climate change, environment and society into evolving issues of social transformation, and offers a methodical strategy, a *horizontal* strategy, that can guide inter-institutional, transborder or cross-scalar adaptation. Contextual as it is, the framework recommends that approaches and activities must depend fully on the actual social and ecological realities shared by local institutions in a specific subnational border-community.

The need for the subaltern theoretical model and its corresponding strategy framework, together with its promise and discomfort, can be affirmed by field research on the local institutions' adaptive capacity and the shared vulnerability of *barangays*, villages, communes, barrios, or district in the border-community. When adopted, the framework becomes a historical manifestation of the fundamental principle that argues for the autonomy and duty of local institutions to pursue their own good in an egalitarian way and promotes the right of all to participate in the social and ecological life of society, and in the decisions that affect their community—their *border-community*.

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