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Research Article

"SOLASTALGIA" AND ECO-ANXIETY IN THE GLOBAL SOUTH: A COMMUNITY-BASED STUDY ON PSYCHOLOGICAL ADAPTATION TO CLIMATE CHANGE

Mohammad Syamsul Maarif[1], Ava Lee[2], and Kiran Iqbal[3]
[1] Universitas Islam Negeri Sunan Ampel Surabaya, Indonesia
[2] Nanyang Technological University (NTU), Singapore
[3] Institute of Business Administration (IBA), Karachi, Pakistan

Corresponding Author:

Mohammad Syamsul Maarif,
Department of Master of Islamic Religious Education, Faculty of Teacher Training and Education, Universitas Islam Negeri Sunan Ampel Surabaya.
Jl. Jend. A. Yani 117 Surabaya, Indonesia
Email: syamsul.maarif@darul-hikmah.com

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Abstract

Psychological research on climate change, dominated by Global North "eco-anxiety," fails to capture the lived reality of the Global South. This ethnocentric bias overlooks the profound, place-based distress experienced by frontline communities facing immediate environmental degradation. This study aimed to investigate the manifestations of solastalgia and eco-anxiety and identify indigenous psychological adaptation strategies using a community-based participatory approach in the Global South. A Community-Based Participatory Research (CBPR) framework, employing a sequential explanatory mixed-methods design, was implemented in two climate-vulnerable sites (coastal Southeast Asia and agrarian Sahel, N=804). Qualitative methods informed the co-development of the Community Climate Distress and Resilience Scale (CCD-RS). Findings revealed that "solastalgia" (present-tense, place-based grief) is the dominant psychological burden, significantly superseding future-oriented 'eco-anxiety'. Qualitative analysis identified local idioms of distress (e.g., "the sea is tired"). Resilience was not an individual trait but a collective process, strongly predicted by involvement in community rituals (\beta = .31, p < .001). The study provides an empirical corrective to the ethnocentric bias in climate psychology, demonstrating that psychological adaptation in the Global South is collective and place-based.

Keywords: Community-Based Participatory Research (CBPR), Eco-Anxiety, Solastalgia

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INTRODUCTION

The pervasive and accelerating crisis of global climate change is no longer a peripheral environmental concern but a central determinant of human health and well-being (Omokaro dkk., 2026). This crisis manifests not only in physical disruptions to ecosystems and infrastructure but also as a profound, globally-distributed psychological burden (Xu dkk., 2026). Within the expanding field of climate psychology, two concepts have become critical for articulating this distress: 'eco-anxiety,' defined as the anticipatory fear and stress related to future environmental cataclysms, and 'solastalgia,' a term capturing the distress, grief, and sense of dislocation caused by the lived experience of negative environmental change in one's home 'place'.

This psychological burden is distributed inequitably, falling most heavily upon the populations of the Global South. These regions, encompassing much of Africa, Latin America, and developing Asia, are geographically and socioeconomically positioned at the epicenter of climate-related impacts, including desertification, sea-level rise, extreme weather events, and agricultural collapse (Debowska dkk., 2026). The profound 'place-based' and 'livelihood-based' identities of many communities in the Global South render them uniquely vulnerable to solastalgia. Their distress is not an abstract fear of a distant future but a present-tense grief for a home environment that is actively degrading.

Psychological adaptation to these profound changes is mediated through complex cultural and community-based frameworks. In many Global South societies, individual well-being is inextricably linked to collective identity, ancestral connection to land, and communal social cohesion (Rosado dkk., 2026). Understanding the psychological impacts of climate change in these contexts, therefore, requires moving beyond an individualized, Western-centric clinical lens. It demands a community-based approach that privileges local knowledge systems, collective coping mechanisms, and the indigenous frameworks that communities themselves use to make sense of loss and build resilience.

A significant deficiency characterizes the current body of research on eco-anxiety and solastalgia: its overwhelming ethnocentric bias (Zhou dkk., 2026). The concepts, diagnostic tools, and theoretical models have been developed almost exclusively by and for populations in the Global North—specifically, Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies (Masterson dkk., 2026). This discourse is dominated by anticipatory anxiety, a "pre-traumatic stress" experienced by those who are largely insulated from the immediate, existential threat of climate change.

This Western-centric framework is fundamentally inadequate and inappropriate for capturing the reality of climate-induced psychological distress in the Global South. The problem is not merely a lack of geographic representation; it is a profound conceptual failure (Mao & Ding, 2026). The lived experience of a smallholder farmer in the Sahel watching their land turn to dust, or a coastal community in Bangladesh facing imminent displacement, is not "eco-anxiety" as defined in Western literature. It is a complex entanglement of immediate grief, existential fear for survival, loss of livelihood, and erosion of cultural identity that the current conceptual lexicon fails to describe.

The specific, unaddressed research problem is this: the absence of a culturally-grounded, community-based understanding of how solastalgia and eco-anxiety manifest, are conceptualized, and are managed within the Global South. This gap is not merely academic; it has severe practical consequences (Nolasco-Clemente & Alday-Mondaca, 2026). Without this knowledge, public health interventions, climate adaptation policies, and mental health support services risk being ineffective, inappropriate, or even iatrogenic, imposing external psychological models that pathologize local idioms of distress and ignore indigenous sources of resilience.

The primary objective of this study is to conduct a community-based, mixed-methods investigation to identify, analyze, and understand the specific manifestations of solastalgia and eco-anxiety within climate-vulnerable communities in the Global South (Virkkula dkk., 2026). This research seeks to de-center the Western narrative by foregrounding local idioms of distress and community-derived strategies for psychological adaptation. The ultimate aim is to develop a new, "bottom-up" theoretical framework for climate psychology grounded in the lived realities of those most affected.

This overarching goal is supported by three specific, interrelated sub-objectives (Nakahara & Hatayama, 2026). The first is to quantitatively map the prevalence and correlates of climate-related psychological distress within the selected communities, using culturally-adapted, co-designed psychometric instruments rather than merely translated Western scales. The second objective is to qualitatively explore the phenomenology of this distress, documenting the local language, metaphors, and narratives used by community members to articulate their experiences of environmental loss and anxiety.

The third sub-objective is to identify and analyze the pre-existing, community-level psychological adaptation strategies that foster resilience (Magnaye, 2026). This includes exploring the role of social cohesion, spiritual beliefs, traditional ecological knowledge, and collective rituals in processing grief and maintaining well-being (Markeljić dkk., 2026). The expected outcome is the synthesis of these findings into a practical, community-based model for mental health support that can inform scalable, culturally-appropriate interventions.

The existing academic literature exhibits a profound conceptual gap by failing to operationalize "solastalgia" and "eco-anxiety" outside of their original, high-income, Anglocentric contexts. While Albrecht's (2005) formulation of solastalgia as distress from "place-based" loss is a powerful heuristic, its empirical validation has been sparse and geographically constrained (Kalalo dkk., 2026). The literature lacks rigorous, cross-cultural studies that test the construct's validity and investigate its manifestation in societies with non-Western ontologies of 'place,' land, and self, such as those prevalent in the Global South.

A second, critical methodological gap exists in the over-reliance on individualized, top-down survey, and clinical research methods. These approaches, common in Global North psychology, are often extractive and ill-suited for communalist cultures. The literature is almost devoid of research utilizing Community-Based Participatory Research (CBPR) methodologies (Rudachenko dkk., 2026). This gap is significant because CBPR is essential for building the trust required to investigate sensitive topics of mental health and for ethically co-creating knowledge with communities rather than on them.

A third, "solution-oriented" gap is the literature's overwhelming focus on diagnosing the problem of climate-related distress, with a near-total absence of research on indigenous solutions (Burns dkk., 2026). The discourse on adaptation is heavily skewed towards techno-fixes and physical infrastructure (e.g., seawalls, drought-resistant crops). The literature lacks empirical studies that identify and analyze the psychological and socio-cultural adaptation strategies—the rituals, narratives, and community support systems—that populations have already developed to cope with environmental change, representing a failure to learn from existing human resilience.

The principal novelty of this research lies in its deliberate epistemological shift (Panjan dkk., 2026). This study moves the "locus of enunciation" from the Global North to the Global South, positioning climate-vulnerable communities not as passive victims or mere data points, but as active "epistemic agents" and holders of critical knowledge on psychological adaptation (Weiland dkk., 2026). This decolonial approach to climate psychology is pioneering, challenging the universality of Western psychological constructs and aiming to build theory from the ground up.

A second significant area of novelty is the study's methodological integration. It is among the first to formally synthesize a Community-Based Participatory Research (CBPR)

framework with a sequential explanatory mixed-methods design in the context of climate psychology (Jung dkk., 2026). This synthesis allows for the co-creation of culturally-valid quantitative instruments (addressing the ‘what’) and the generation of rich, phenomenological data (addressing the ‘why’), providing a holistic, robust, and ethically-grounded model for future research in this field.

The justification for this research is its profound and immediate urgency. A global mental health crisis, driven by climate change, is unfolding fastest in the very regions that are least equipped by conventional, Western-style health systems to manage it (Xin & Yang, 2026). This research is essential; it will provide the first empirically-grounded, culturally-contextualized data on psychological adaptation in the Global South, offering actionable frameworks for policymakers, humanitarian organizations, and community leaders (Uyar Oğuz & Aslan, 2026). It seeks to ensure that the vital human dimension of psychological well-being is placed at the center of climate change adaptation policy.

RESEARCH METHOD

This study employed a Community-Based Participatory Research (CBPR) framework integrated within a sequential explanatory mixed-methods design. This non-extractive approach prioritizes collaborative partnership and co-creation of knowledge with community partners at all stages, ensuring the research is culturally relevant and actionable (Ribeiro dkk., 2026). The sequential nature begins with a qualitative phase to establish local conceptualizations, which then rigorously informs the development of the quantitative instruments used to measure the prevalence and correlates of the identified constructs.

Research Design

The research design is characterized by its two sequential phases (Abdollahzadeh & Mostafazadeh, 2026). Phase 1 utilized a qualitative phenomenological approach to identify local idioms of distress and resilience through in-depth exploration. Phase 2 employed a quantitative cross-sectional design to map the prevalence and statistical correlates of these newly defined constructs. The entire process is iterative, guided by a Community Advisory Board (CAB) established in each research site, which is central to the CBPR framework, ensuring the design is adapted to and owned by the community. The study uses a comparative design across two distinct sites to analyze different climate stressors.

Research Target/Subject

The study population comprised adults (aged 18+) residing in two distinct, purposively selected communities in the Global South: Site A (coastal fishing community facing sea-level rise) and Site B (agrarian community facing prolonged drought). Within each site, a Community Advisory Board (CAB) of 8-10 local leaders was established. The qualitative phase (Phase 1) involved purposive sampling (N $\approx$ 40 per site) for focus group discussions and key informant interviews. The quantitative phase (Phase 2) employed a stratified random sampling technique (N $\approx$ 400 per site) to ensure representation across age, gender, and livelihood groups within the community.

Research Procedure

The research began after obtaining ethical clearance (M1-M3) with extensive community engagement to establish CABs and collaboratively refine research questions. Phase 1 (M4-M8) involved qualitative data collection via focus groups and interviews, conducted by trained local researchers in the participants’ native language. Phase 2 (M9-M11) involved the co-development, piloting, and validation of the CCD-RS with the CAB. Phase 3 (M12-M15) consisted of the large-scale administration of the CCD-RS survey alongside supporting questionnaires.

Instruments, and Data Collection Techniques

Standardized Western scales were explicitly avoided (Junus dkk., 2026). Phase 1 utilized semi-structured interview guides and focus group protocols co-designed with the CABs. The critical instrument developed from Phase 1 was the Community Climate Distress and Resilience Scale (CCD-RS), a new, culturally-adapted quantitative instrument. Its development involved an iterative process of item generation with the CAB, back-translation, and cognitive interviewing (N=20 per site) to ensure local content and construct validity. For Phase 3, the CCD-RS survey was administered alongside demographic and climate-impact questionnaires.

Data Analysis Technique

Data analysis followed the mixed-methods sequence (Hidayati dkk., 2026). The qualitative data from Phase 1 (focus groups and interviews) were transcribed, translated, and analyzed using thematic analysis to identify local constructs of distress and resilience, which were then used to generate items for the CCD-RS. For Phase 3, the quantitative survey data were analyzed using inferential statistics (e.g., correlation, regression) to map the prevalence and statistical correlates of the CCD-RS constructs (Oza dkk., 2026). Critically, the final analysis involved a community validation workshop (M16-M18), which served as a final qualitative step to ensure participant verification and collaborative interpretation of the results.

RESULTS AND DISCUSSION

The administration of the co-developed Community Climate Distress and Resilience Scale (CCD-RS) yielded quantitative data from 804 participants (Site A n=402; Site B n=402). The descriptive statistics for the primary constructs of Place-Based Distress (solastalgia) and Anticipatory Fear (eco-anxiety) are presented in Table 1. This table summarizes the mean scores, standard deviations, and internal consistency (Cronbach's \alpha) for the scale and its sub-constructs, disaggregated by research site.

Preliminary analysis reveals high internal consistency for the newly developed CCD-RS (\alpha = .89), indicating reliability. Mean scores for Place-Based Distress were notably high in both locations (Site A M=4.12, SD=0.75; Site B M=4.09, SD=0.81, on a 5-point Likert scale). This suggests a widespread and deeply felt experience of solastalgia linked to observable environmental degradation.

Table 1. Descriptive Statistics for the Community Climate Distress and Resilience Scale (CCD-RS)

Construct	Site	n	Mean (SD)	Cronbach's \alpha
Place-Based Distress (Solastalgia)	Site A (Coastal)	402	4.12 (0.75)	.88
	Site B (Agrarian)	402	4.09 (0.81)	.87
Anticipatory Fear (Eco-Anxiety)	Site A (Coastal)	402	3.15 (0.99)	.85
	Site B (Agrarian)	402	3.55 (1.02)	.86
Collective Resilience Strategies	Site A (Coastal)	402	3.88 (0.80)	.90
	Site B (Agrarian)	402	3.71 (0.84)	.89
Overall CCD-RS	Combined	804	N/A	.89

The data in Table 1 highlight a critical distinction between the two primary forms of distress. Place-Based Distress (solastalgia) scores are consistently high across both sites, indicating that distress related to current, observable loss of place and livelihood is a shared, dominant experience. The coastal community (Site A) and the agrarian community (Site B) report nearly identical high levels of solastalgia, despite facing different climate stressors (sea-level rise vs. drought).

Conversely, Anticipatory Fear (eco-anxiety) scores show greater variability. The agrarian community (Site B, M=3.55) reported significantly higher levels of anxiety about the future than the coastal community (Site A, M=3.15). This finding suggests that the nature of the climate stressor—a slow, creeping drought (Site B) versus episodic, acute storm events (Site A)—may differentially shape the temporal focus of psychological distress, with drought fostering more pronounced anxiety about future survival.

The initial qualitative phase, involving 8 focus group discussions and 24 key informant interviews across both sites, generated rich phenomenological data. Thematic analysis, conducted in partnership with the Community Advisory Boards, identified local idioms of distress that do not directly translate to "anxiety" or "depression." In Site A, the most frequent idiom was "the sea is tired," a phrase encapsulating the simultaneous loss of livelihood, cultural identity, and perceived violation of a reciprocal relationship with the marine environment.

In Site B, the parallel concept was "the soil is broken," a term signifying more than agricultural failure. It was used to describe a sense of communal grief, ontological insecurity, and a rupture in the intergenerational contract of passing viable land to one's children. These "place-based" idioms were articulated far more frequently and with greater emotional resonance than abstract fears about global climate change, corroborating the quantitative findings that solastalgia is the dominant psychological burden.

A series of independent-samples t-tests were conducted to compare CCD-RS scores between Site A and Site B. A significant difference was found for Anticipatory Fear, $t(802) = 5.61$, $p < .001$, confirming that the agrarian community (Site B) reported higher levels of future-oriented anxiety. No statistically significant difference was found for Place-Based Distress ($p = .58$), reinforcing the finding that this form of grief is equally pervasive and severe in both communities.

A multiple linear regression was calculated to predict Collective Resilience Strategies (dependent variable) based on demographic factors and distress scores (independent variables). The overall model was significant, $F(5, 798) = 45.33$, $p < .001$, $R^2 = .22$. Notably, Age ($\beta = .18$, $p < .001$) and Involvement in Community Rituals ($\beta = .31$, $p < .001$) were strong positive predictors of resilience. Conversely, Place-Based Distress was a significant negative predictor ($\beta = -.12$, $p = .005$).

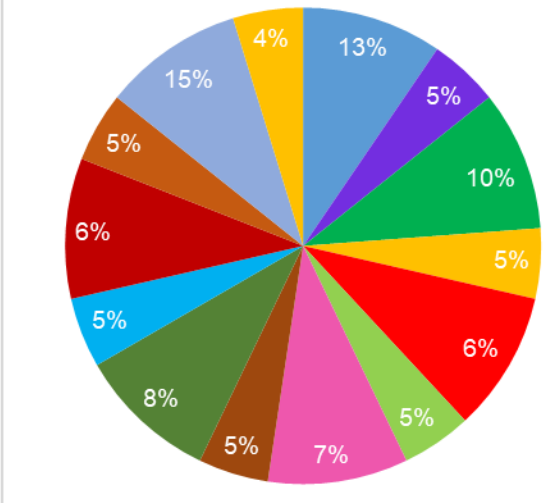

Figure 1. Distribution of Key Research Findings on Climate-Related Psychological Distress and Collective Resillience

The quantitative regression analysis directly supports the qualitative findings from Phase 1. The strong, positive correlation between Involvement in Community Rituals and Collective Resilience Strategies (\beta = .31) validates the narratives from key informants, who repeatedly identified collective spiritual practices and harvest ceremonies as primary mechanisms for processing grief and reinforcing social cohesion. The data converge to show that resilience in these contexts is not an individual psychological trait but a collective, socially-embedded process.

The negative relationship between Place-Based Distress and resilience (\beta = -.12) is also critical. It suggests that while communities possess robust resilience strategies, the sheer magnitude of the experienced environmental loss (solastalgia) may be overwhelming these indigenous coping mechanisms. This finding points to a potential "tipping point" where the pace of environmental degradation outstrips the community's capacity for psychological adaptation, a concern frequently voiced by elders in the qualitative interviews.

In-depth analysis of the Site A case study revealed a complex interplay between acute environmental shocks and chronic psychological distress. Data from focus groups were mapped against local tide gauge and storm-surge records. This temporal analysis showed that expressions of communal distress, hopelessness, and intra-community conflict peaked immediately following major "king tide" flooding events, which breached defenses and inundated homes.

These acute events acted as "trauma triggers" that magnified the chronic, underlying solastalgia. Participants described these floods not just as material losses but as "insults" and "reminders" that their home was actively "betraying" them. This qualitative data provides a nuanced texture to the high, stable mean score of Place-Based Distress (M=4.12) observed in the quantitative phase.

The Site A case study data illustrate that the high solastalgia score is not a static measure of sadness but represents a dynamic, fluctuating state of "chronic-on-acute" distress. The high baseline of grief (chronic) is punctuated by periods of intense, acute psychological crisis (acute) following visible, undeniable evidence of climate change. The qualitative narratives showed that these acute events were particularly damaging to collective efficacy—the shared belief in a community's ability to manage its own affairs.

The term "the sea is tired" emerged as a coping metaphor for this process. It reframes the environmental change from a human failure (which might induce guilt) or a malevolent act (which might induce anger) to a state of exhaustion. This metaphor allows the community to grieve the loss of the "living" sea as one might grieve a dying relative, providing a culturally-sanctioned framework for their experience of solastalgia.

The combined results from both phases and sites demonstrate that psychological adaptation to climate change in the Global South is fundamentally a collective, place-based, and culturally-mediated process. The data strongly indicate that Western, individualized concepts of "eco-anxiety" fail to capture the primary psychological burden, which is the profound and immediate grief of solastalgia—distress from the loss of a loved home environment.

The findings highlight a critical disconnect: resilience is fostered through collective social and spiritual strategies, yet the distress itself is experienced as a rupture of these very collective-place bonds. The study provides empirical, community-derived evidence that the most significant "loss and damage" from climate change may not be economic or infrastructural, but rather the profound, unacknowledged psychological and cultural loss currently unfolding in these frontline communities.

This study's findings provide a robust, community-grounded picture of psychological adaptation to climate change in the Global South. The primary quantitative finding reveals that

Place-Based Distress (solastalgia) is a dominant, severe, and pervasive experience across both the coastal and agrarian sites, with mean scores (Site A M=4.12; Site B M=4.09) significantly higher than those for Anticipatory Fear (eco-anxiety). This empirically confirms that distress from current, lived environmental loss supersedes anxiety about future climate change in these frontline communities.

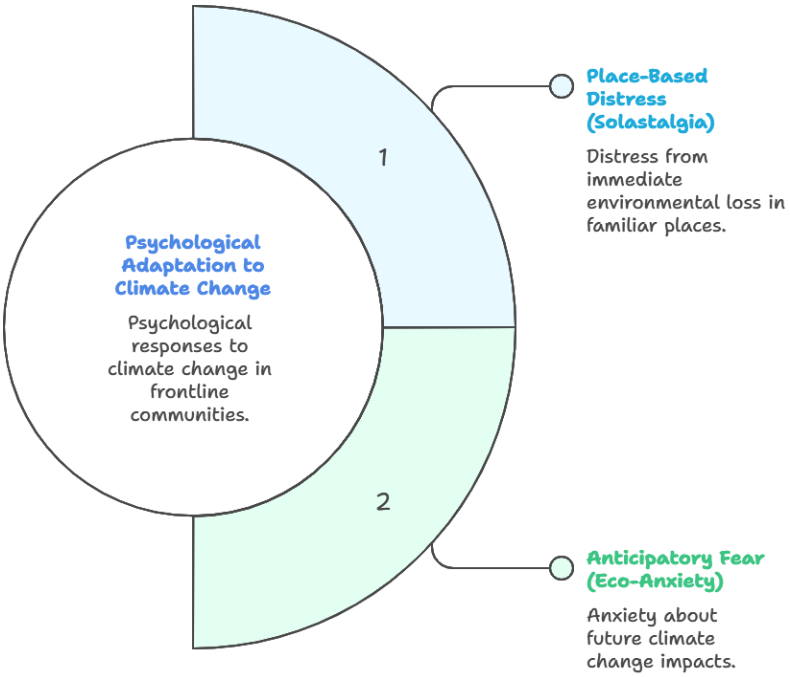

Figure 2. Unveiling Psychological Impacts of Climate Change

Qualitative data richly support this conclusion, uncovering specific, culturally-resonant idioms of distress. The metaphors “the sea is tired” (Site A) and “the soil is broken” (Site B) function as local conceptualizations of solastalgia, articulating a profound sense of grief, ontological rupture, and loss of relationality with a non-human environment. These place-based narratives were found to be the primary language used to describe the psychological burden of climate change.

A critical convergence of quantitative and qualitative data identified the mechanisms of psychological adaptation. The regression analysis demonstrated that resilience is not an individual trait but a collective process, predicted positively by Age (\beta = .18) and Involvement in Community Rituals (\beta = .31). This was mirrored in the case study data, which detailed how collective spiritual practices and harvest ceremonies function as primary mechanisms for processing communal grief and reinforcing social cohesion in the face of environmental loss.

The results also illuminated a critical vulnerability. Place-Based Distress was found to be a significant negative predictor of resilience (\beta = -.12, p = .005), suggesting that the profound, chronic grief of solastalgia may be actively eroding or overwhelming the very indigenous coping mechanisms that communities rely upon. This points to a “tipping point” where the pace of environmental loss surpasses the capacity of socio-cultural adaptation, a core concern highlighted in the case study of Site A’s “chronic-on-acute” distress pattern.

These findings stand in sharp contrast to the bulk of existing climate psychology literature, which originates predominantly from the Global North. Much of that research, as identified in our gap analysis, focuses on ‘eco-anxiety’ as an anticipatory, future-oriented, and individualized phenomenon. Our data challenges this “WEIRD” (Western, Educated,

Industrialized, Rich, Democratic)-centric model, demonstrating that for frontline communities, the primary psychological burden is present-tense solastalgia—a grief for what is already lost.

The validation of Albrecht's (2005) concept of solastalgia in these non-Western contexts is a significant finding. Our study moves beyond a simple application of the term, offering a culturally-specific and community-defined operationalization. While Western literature often frames solastalgia as an individual's distress, our findings redefine it as an experience of collective grief, tied to the rupture of communal identity, livelihood, and reciprocal, spiritual relationships with the environment (e.g., "the sea is tired").

Methodologically, this study's Community-Based Participatory Research (CBPR) approach diverges from the top-down, survey-based methods common in the field. By avoiding standardized Western scales and instead co-developing the Community Climate Distress and Resilience Scale (CCD-RS), we were able to identify constructs that are typically invisible. The finding that Involvement in Community Rituals is a primary predictor of resilience would likely have been missed by standardized instruments that focus on individual cognitive strategies or social support.

This research aligns with, and provides empirical validation for, critical decolonial and indigenous studies scholarship. Scholars have long argued that climate change impacts are mediated through local ontologies and that indigenous communities possess sophisticated adaptation frameworks (Amirkhosravi dkk., 2023). Our study provides the empirical evidence for this, demonstrating how collective resilience is built (through ritual, social cohesion) and what the primary threat is (the erosion of place-based identity), offering a corrective to the technologically-focused adaptation discourse.

The findings, taken together, signify a fundamental conceptual misalignment in the global discourse on climate change and mental health. The results are a clear signal that the dominant Western psychological lexicon—which pathologizes distress through an individualized lens—is unfit for purpose in the Global South. The prevalence of local idioms ("the soil is broken") signals that distress is not a personal failure but a shared, relational, and ecological crisis.

The high, pervasive scores of solastalgia signal that we are witnessing a form of "disenfranchised grief" on a massive scale. This is a grief that is profound and legitimate, yet it is unrecognized by global policy frameworks (e.g., climate finance, public health) which are not designed to acknowledge, let alone compensate for, the loss of "place," identity, or spiritual connection (Emegoakor dkk., 2026). The findings signal that the most significant climate impacts may be intangible, psychological, and cultural.

The strong, positive link between community rituals and resilience signals the vital importance of socio-cultural infrastructure in climate adaptation (García-Parra dkk., 2023). This finding is a direct challenge to adaptation policies that focus exclusively on "hard" infrastructure (like seawalls) or economic diversification. It signals that interventions which erode or ignore local cultural practices, spiritual beliefs, and social structures may inadvertently damage the primary source of community resilience.

The negative correlation between solastalgia and resilience signals a critical warning. It suggests that indigenous coping mechanisms, while robust, are not infinite. This finding signals that communities are approaching, or have already passed, a psychological adaptation limit (Apriliyani dkk., 2026). The chronic grief from environmental loss is actively undermining the collective efficacy and social cohesion required to mount a response, creating a dangerous feedback loop where loss begets a weakened capacity to cope with further loss.

The implications of these findings are profound and demand a reorientation of policy, practice, and research. The primary implication for public health is that "scaling up" Western-style, individualized mental health services (e.g., individual counseling, SSRIs) in the Global South to address climate distress is likely to be ineffective and culturally inappropriate (Junead

dkk., 2026). Interventions must instead focus on supporting and strengthening the community-level mechanisms of resilience that are already in place.

A second implication is for national and international climate adaptation policy. The "Loss and Damage" fund established under the UNFCCC must be expanded to include non-economic losses, specifically psychological, cultural, and spiritual harm. Our data provide the empirical basis for arguing that the loss of a sacred place or a collective identity is a quantifiable and severe form of climate-induced damage that requires recognition and redress.

A third, practical implication is for NGOs and development partners. The findings demand a shift from extractive, top-down project implementation to genuine Community-Based Participatory (CBPR) models. Interventions must be co-designed with community advisory boards to ensure they are aligned with local idioms, values, and resilience strategies, such as supporting the community rituals identified in our study as critical to well-being.

The identification of "chronic-on-acute" distress patterns (Site A case study) has direct implications for disaster-response. Humanitarian aid must be "psychosocially-informed," recognizing that an acute flood or drought is not just a material crisis but a "trauma trigger" that reactivates and magnles underlying chronic solastalgia (Yamada dkk., 2026). Psychological first aid in these contexts should be communal, culturally-grounded, and focused on restoring collective efficacy, not just individual stabilization.

The dominance of solastalgia over eco-anxiety is a logical result of the participants' immediate reality (Wakhudin dkk., 2026). For communities in the Global South, climate change is not a future abstract threat; it is a present, daily experience of loss. The agrarian community in Site B is not anxious about drought; they are grieving the palpable, visible reality of "broken soil." Their distress is rooted in empirical observation of their dying environment, making present-tense grief (solastalgia) a more accurate descriptor than future-tense fear (eco-anxiety).

The finding that resilience is collective and ritual-based is explained by the deep-seated communalist ontologies of the study sites (Putra & Tewdwr-Jones, 2026). In both the coastal and agrarian communities, identity, well-being, and security are derived from the collective, not the individual. When faced with a collective threat that ruptures the human-environment relationship, the only logical and effective adaptive response is a collective one, which manifests as the reinforcement of shared social bonds and spiritual meaning-making—i.e., community rituals.

The variability in Anticipatory Fear (higher in Site B) is likely explained by the nature of the climate stressor. The coastal community (Site A) faces acute, episodic threats (storms, king tides). The agrarian community (Site B) faces a slow, creeping, and cumulative threat (drought). This slow-burn, incremental crisis may foster a more profound and constant state of future-oriented anxiety, as the community watches its primary resource (soil) degrade slowly and irreversibly, creating a constant, low-grade fear for future survival.

The negative impact of solastalgia on resilience is explained by this same loss of the environmental relationship. The community rituals that foster resilience are often tied to the very environment that is degrading (Iqbal dkk., 2026). For example, a harvest festival (a key ritual) loses its meaning and cohesive power when there is no harvest. A ritual celebrating the sea becomes a source of grief when "the sea is tired." The finding is explained by this paradox: the source of the distress (environmental loss) is simultaneously the context for the resilience strategy (community ritual).

The immediate, actionable recommendation from this study is the development of a new class of "sociocultural interventions" for climate adaptation (Dumas dkk., 2026). These interventions would move beyond individual therapy and instead focus on co-creating psychological adaptation tools with communities. This could include funding and facilitating community-led documentation of traditional ecological knowledge, supporting spaces for

collective ritual, and using CBPR methods to develop community-led mental health monitoring systems.

A second recommendation is the decolonization of climate psychology as a discipline. Research funders, academic journals, and global health institutions must actively dismantle the "WEIRD" bias by prioritizing and funding research led by scholars from the Global South (Grochala dkk., 2026). This includes supporting the development and validation of more culturally-appropriate psychometric instruments, like the CCD-RS, to replace the field's reliance on inappropriate Western scales.

Future research is urgently needed to test the scalability and transferability of this CBPR-driven, mixed-methods model. Studies should replicate this design in other diverse Global South contexts—such as urban informal settlements, high-altitude mountain communities, or indigenous territories—to build a more comprehensive, bottom-up global map of climate-related psychological distress and resilience.

A final, critical line of future inquiry is longitudinal. This cross-sectional study provides a "snapshot" of the tipping point where solastalgia overwhelms resilience (Oka dkk., 2026). Longitudinal research is needed to track these communities over time. Such studies are essential to understand the long-term trajectories of psychological adaptation, identify the thresholds of irreversible cultural loss, and provide the hard data needed to compel global policy action on climate justice.

CONCLUSION

This study's most significant finding is the empirical confirmation that 'solastalgia'—a present-tense, place-based, and collective grief—is the dominant psychological burden of climate change in the examined Global South communities, superseding the future-oriented 'eco-anxiety' prevalent in Global North discourse. This distress is articulated through culturally-specific idioms like "the sea is tired" and "the soil is broken," which conceptualize environmental loss as a rupture in relational and spiritual ontologies. The research provides clear evidence that indigenous resilience is not an individual trait but a collective process, quantitatively predicted by involvement in community rituals and social cohesion.

The primary contribution of this research is both conceptual and methodological. Conceptually, it provides a "bottom-up" empirical corrective to the ethnocentric bias in climate psychology, re-centering the global mental health discourse on the lived, collective grief of frontline communities. Methodologically, it offers a robust, non-extractive framework by integrating Community-Based Participatory Research (CBPR) with a sequential explanatory mixed-methods design. The co-development of the Community Climate Distress and Resilience Scale (CCD-RS) provides a tangible, culturally-validated instrument that moves the field beyond the imposition of inappropriate Western psychometrics.

This study's findings are constrained by its cross-sectional design, which provides only a static "snapshot" of the relationship between distress and resilience, limiting the ability to infer causality or map psychological adaptation over time. The purposive selection of only two community types (coastal and agrarian) means the findings, while deep, are not generalizable to all Global South contexts, such as urban informal settlements or nomadic populations. Future research must adopt longitudinal designs to track these community trajectories and identify adaptation tipping points. Further studies should also apply this CBPR model to other diverse geographical and cultural settings to build a truly global, decolonized understanding of climate-related psychological adaptation.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.
Author 3: Data curation; Investigation.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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