Extractivism and Survival: Community Resistance through Integral Ecology

Alvenio G. Mozol Jr.

Abstract: Extractive industries, which remove natural resources for global markets, impose severe health and environmental burdens on marginalized communities, producing "sacrifice zones". Drawing on Bronfenbrenner's bioecological framework alongside integral ecology, this paper shows how extractivism operates across interconnected ecological systems, linking effects on individual bodies with wider economic and political structures. Communities respond to extractivism through educational efforts that cultivate critical awareness, collective action such as land defense initiatives, and legal and electoral strategies that have enabled grassroots actors to enter formal politics. This paper examines how integral ecology, which understands human health and ecological conditions as deeply intertwined, offers a framework for interpreting and confronting extractivism's impacts. Drawing on cases from the Philippines and other countries, the analysis illustrates how community-led resistance, context-specific environmental education, and policy-oriented interventions can reconfigure sacrifice zones as sites of renewal. The paper concludes by proposing recommendations that foreground marginalized voices and advance justice-centered sustainability while recognizing affected communities as active agents who organize resistance and shape their environments.

Keywords: Extractivism • Integral Ecology • Environmental Justice • Community Resistance • Health Inequities

Introduction

My father worked as a chemist for a mining company in our Philippine village. Years of exposure to toxic waste weakened his respiratory resilience and reflected coping practices shaped by economic precarity and community dislocation. He eventually died from respiratory illness. Our home stood by a river that was also burdened by toxic waste. Its decay mirrored ecological damage and the

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community's struggles with health and livelihood. Both loss inform an exploration of extractivism.[1]

This personal narrative opens a space for considering how systemic forces intersect with individual and communal lives across other dimensions of human experience. Drawing on Bronfenbrenner's ecological systems theory, extractivism's violence can be understood as intersecting various layers of human ecology, from the most intimate biological processes to the broadest global structures. Neal and Neal argue that ecological systems are better understood as networked, "an overlapping arrangement of structures, each directly or indirectly connected to the others by the direct and indirect social interactions of their participants."[2]

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[1] Extractivism is an economic model focused on intensive extraction and export of raw natural resources (like minerals, oil, timber) with minimal local processing, often benefiting global markets while causing environmental damage, social conflict, and inequality in resource-rich regions, particularly the Global South. It's criticized as a dependency-driven system linked to capitalism, colonialism, and unsustainable practices that prioritize profit over community well-being and ecosystem health, leading to resource depletion and human rights issues. This definition of extractivism is heavily derived from the work of Eduardo Gudynas, a leading Latin American researcher at the Latin American Center for Social Ecology (CLAES). See his book, *Extractivisms: Politics, Economy and Ecology* (Warwickhire, UK: Practical Action Publishing, 2020).

[2] Jennifer Watling Neal and Zachary P. Neal, "Nested or Networked? Future Directions for Ecological Systems Theory," *Social Development* 22, no. 4 (2013), 724. Building on Bronfenbrenner's ecological systems theory, Jennifer Watling Neal and Zachary P. Neal reconceptualize ecological contexts as networks of social relationships rather than as fixed, nested layers surrounding the individual. In their networked ecological systems framework, developmental settings are defined by patterns of interaction, with microsystems comprising direct social ties and mesosystems representing connections among those ties (e.g., between families and schools). This interpretation aligns with Bronfenbrenner's later emphasis on proximal processes while extending the theory by offering analytic tools from social network analysis that allow ecological influences to

Extractivism is not static; it moves and flows through a "network" of living bodies, community relations and interactions, corporate boardrooms, and government offices. This means that a single event, like a mining company's operations polluting a river, quickly spreads across boundaries to affect everything from workplace safety to distant regulatory decisions and into the biochemistry of bodies. As Darling emphasizes, "the central force in development is the active person: shaping environments, evoking responses from them, and reacting to them,"[3] a principle that recognizes affected communities and individuals not as mere passive victims but as agents who can interpret and resist extractive violence.

At the deep-microsystem level, which corresponds to what Bronfenbrenner thinks of as the individual organism itself,[4] extractive economies impinged on my

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be modeled empirically. Although grounded in Bronfenbrenner's original theory, the present paper adopts this networked advancement to capture the dynamic, overlapping, and relational nature of developmental contexts. Rosa and Tudge emphasize that Bronfenbrenner's theory underwent considerable evolution. In its final bioecological version, "proximal processes" take center stage as the main drivers of development. These are the increasingly complex, two-way interactions between a developing person and people, objects, or symbols in their immediate surroundings, where the person both shapes and is shaped by the environment. Cf. Rosa, Edinete Maria, and Jonathan Tudge, "Urie Bronfenbrenner's Theory of Human Development: Its Evolution from Ecology to Bioecology," *Journal of Family Theory & Review* 5, no. 4 (2013): 243-258.

[3] Nancy Darling, "Ecological Systems Theory: The Person in the Center of the Circles," *Research in Human Development* 4, no. 3-4 (2007), 204. All subsequent references to Darling in this section are to this work and page unless otherwise noted.

[4] Urie Bronfenbrenner's ecological systems theory is fully introduced in his foundational book *The Ecology of Human Development: Experiments by Nature and Design* (1979), in which he conceptualizes human development as occurring within nested environmental systems: the microsystem, mesosystem, exosystem,

father's body: toxic exposure stressed and collapsed his respiratory system at the biological level, evoking a translation of the corporate profit into cellular damage and biochemical breakdown. Chemical pollution severely impacts the respiratory system by causing acute irritation, chronic inflammation, reduced lung function, and the development or exacerbation of diseases like asthma, bronchitis, and lung cancer. Inhaled chemical pollutants penetrate deep into the lungs, triggering oxidative stress and damaging airway tissues. The accumulation of chemical agents broke down his body's basic functions, demonstrating how large-scale economic forces show up in the body's fundamental processes.

At the microsystem level, the immediate environment of face-to-face relationships, his excruciating illness and eventual death entered the household. Global corporate interests are implicated in such intimate experiences of loss and grief. We also grieved over the death of my 18-year old brother who died from bronchopneumonia. The microsystem became marked by departures and absence. Yet this microsystem also became a site of meaning-making, where family members, or at least to this author, actively interpreted the loss not as individual misfortune but as systemic injustice. However, for many members of households, personal tragedies do not always lead them to social critique.

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and macrosystem. The role of time and historical change, later termed the chronosystem, was elaborated more explicitly in subsequent work, particularly his 1986 article "Ecology of the family as a context for human development." Bronfenbrenner further refined the theory in later publications, especially through the bioecological model and the PPCT framework (Process–Person–Context–Time), as presented in his 1998 *Handbook of Child Psychology* chapter and his 2005 volume *Making Human Beings Human*. These works collectively represent the core references for understanding the development and evolution of ecological systems theory.

At Bronfenbrenner's mesosystem level, the connections between different microsystems - our community's relationships with workplaces, markets, and official institutions were shaped by the mining company's presence. Formal transactions and professional encounters occurred under the shadow of environmental harm. The mesosystem became a web of connections shaped by extractivism: how neighbors interacted when borrowing kilos of rice or some small amounts due to delayed salaries; how some Mamanwas (indigenous tribe) turned to alcohol to temporarily relieve stress; how workers talk ill about their employer's or manager's greed. Neal and Neal clarify that mesosystems are not containers within which microsystems are nested but rather "social interaction between participants in different settings that both include the focal individual." In our community, mesosystemic interactions occurred when my father point to workplace hazards with family members during mealtime, or when mothers shared stories about their children's breathing problems. These connections reveal what Darling describes as the "patterning and interrelationship of multiple determinants of development," where no single relationship can be understood separately from the broader network of influences.

Beyond the meso level lies what Bronfenbrenner identifies as the exosystem or social structures and institutions that indirectly affect individuals. In our case, this included corporate boardrooms in distant cities making decisions about mining operations, government agencies issuing permits, and international commodity markets determining how resource extraction should be. These exosystem forces shaped our daily reality without our direct participation in them. Neal and Neal define the exosystem as "a setting, that is, a set of people engaged in social interaction, that does not include, but whose

participants interact directly or indirectly with, the focal individual." This definition clarifies how extractive violence operates as company executives, government regulators, and global investors formed settings in which they interacted to make decisions about mining intensification, waste disposal, and safety protocols. These decisions affected my father's workplace exposure and our community's health, even though we never participated in those decision-making settings. The exosystem shows how power operates at a distance through regulatory failures, corporate governance structures, and global supply chains that treated our community as a "sacrifice zone"[5] without our voices heard in the decision-making processes.

At Bronfenbrenner's macrosystem level, the overarching cultural values, economic systems, and ideological frameworks, global extractive capitalism imposed its instrumental logic, treating both nature and workers as tools or disposable resources. Its widespread presence shaped not only our community's character and ecology but also entered down to the deep-micro biological reality of my father's or brother's failing lungs. The overarching cultural disposition toward profit and growth creates the "rules of the game" for every other part of society. By treating nature as a thing and a product to be sold, this ideology dictates how businesses, governments, and individuals behave. Neal and Neal reconceptualize the macrosystem as "the social patterns that govern the formation and dissolution of social

[5] A "sacrifice zone" can be defined as "a segregated place where the quality of life of its communities is compromised in the name of progress and capital accumulation." Cf. Valenzuela-Fuentes, Katia, Esteban Alarcón-Barrueto, and Robinson Torres-Salinas, "From Resistance to Creation: Socio Environmental Activism in Chile's 'Sacrifice Zones'," *Sustainability* 13, no. 6 (2021), 3481. https://doi.org/10.3390/su13063481.

interactions between individuals, and thus the relationships among ecological systems." Extractivism is driven by social circles where corporate leaders, politicians, and investors all share the same goal: making money and more money.[6] Because these groups stick together and share the same pro-growth beliefs, they create a system of influence that protects their profits while subordinating well-being and ignoring the harm done to marginalized communities. As Darling notes, understanding this dimension requires recognizing that "the instrumental perspective is assumed as non-negotiable; inherently designed to be impersonal to ensure consistency, efficiency, and objectivity," yet this apparent neutrality masks deep structural violence.

Finally, Bronfenbrenner's chronosystem, the dimension of time and historical change, reveals how extractivism's impacts build up across life stages and generations. My father's and brother's exposure occurred over years of employment and living in the area[7]; the river's pollution built up across decades of mining operations[8]; and the consequences will persist in our community's health and ecological systems for generations to come. This time dimension captures Nixon's concept of "slow violence," showing how environmental destruction unfolds gradually across the chronosystem, making it difficult to perceive or resist in any single moment. The chronosystem also includes

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[6] This paper sides with the stand of Alyansa Tigil Mina in opposing mining in the Philippines as it is practiced today or elsewhere. Cf. https://www.alyansatigilmina.net/.

[7] Chemicals were also brought home, and my father's alchemical activities got extended to the household.

[8] In 1998, I penned a poem titled "Postscript to the Sunset Over Mabuhay," included in my 2015 book. "Mabuhay" which means "long live" was cast in the poem with irony with the dying river, lacerated earth, and "people's hope hanging excruciatingly on the edge of crevices."

historical shifts in mining practices, evolving environmental regulations, and changing community resistance strategies, all of which shape the developmental context across time.[9]

If the chronosystem reveals how extractivism's violence accumulates across time, then space shows us where that violence happens and how it moves through the territories of our lives. Nathania and Wahid wrote: "In a narrative environment, order of events and pace comprise the whole spatial trajectory, which determines the duration of experiencing the narrative environment."[10] This is evident in how mining companies impose their temporal operations onto embodied, physical scapes.[11]

My father's lungs absorbed chemicals he handled in the laboratory where he assayed gold and measured nitrites. The chemicals followed him home, blurring the boundary between workplace and domestic space. Our house by the river stood within the pollution itself. My brother's body, like my father's, became permeable to atmospheric spaces saturated with industrial residue until bronchopneumonia took him at eighteen. The community was a network of spaces shaped by extraction. Makeshift huts and wobbly shelters occupied

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[9] Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011).

[10] Kezia Nathania, and Arif Rahman Wahid, "Spatialising Time: Perceiving Multiple Layers of Time in Narrative Environment," *ARSNET* 2, no. 2 (2022): 112.

[11] The use here of "impose" is intentional as a rebuttal to the argument that individuals and families have choices not to work in the mining industry. The counter-argument comes more poignantly from Bishop Gerardo Alminaza of Caritas Philippines, averring that "We do not condemn workers who depend on mining. We condemn a system that forces people to choose between survival and destruction." CBCPNews. "Catholic Leaders: Extending Semirara Coal Deal Is 'Reckless,'" January 19, 2026. https://cbcpnews.net/cbcpnews/catholic-leaders-extending-semirara-coal-deal-is-reckless/.

land too close to contamination. Stores selling cigarettes and alcohol became sites where workers sought relief. Secret "vaults" where money was kept for lending to cash-strapped families operated alongside the extraction of minerals. Dusty road to the mining area, suffocating in summer but muddy during the rains, facilitated the movement of ore-laden trucks while constraining community mobility. The school space received financial support from the company, gestures that framed corporate presence as beneficence. Markets transformed minerals into global commodities, abstracting gold from its origins in bodies and land. The hospital space documented illness without linking symptoms to their sources. The cemetery gathered our dead on ground that shared the logic of life's emergence. Silent spaces of land stripped of vegetation expanded across the mountainscape, marking ecological loss. Atmospheric spaces functioned as repositories for pollutants. These spaces formed an interconnected geography where wage labor, family life, financial strain, illness, grief, and environmental degradation occupied overlapping terrain. As Bansel argues, rather than static containers, space and time operate as relational processes, that is, dynamic and generative practices through which people, objects, and the world itself are constantly brought into being and reshaped.[12] In extractive contexts, they organize the movements and exposures of the human and more-than-human world that construct vulnerability across generations.

Integral ecology shows that environmental crises cannot be separated from human health and social

[12] Peter Bansel, "Same but Different: Space, Time and Narrative," *Literacy* 47, no. 1 (2013): 4-9.

fabric.[13] Bronfenbrenner's framework, particularly when understood through the networked model proposed by Neal and Neal, shows how these dimensions interlock through patterns of social interaction: the spiritual impoverishment of communities (macrosystem social patterns) connects to disrupted cultural practices (mesosystem interactions across settings), which link to family rituals of care (microsystem relationships), affecting individual bodies and psyches (deep-microsystem). This ecological understanding aligns with integral ecology's insistence that "everything is connected" and that addressing environmental crises requires attending to their manifestation across all levels of human experience simultaneously. My family's experience connects to the struggles of others across mining-affected regions. Private grief connects to collective injustice as the macro dimension of extractivism interlocks with and enters every other level of existence from the biochemical to the interpersonal to the institutional. Understanding these networked ecological systems reveals that resisting extractivism requires interventions at multiple levels simultaneously. This framework positions affected communities not as passive followers of necessary work or recipients of harm but as active agents who interpret their experiences, organize resistance, and shape their environments—all essential to justice-centered approaches to environmental sustainability.

Extractivism's toll on health and ecology

Extractivist violence often moves slowly, causing harm that builds up over time rather than hitting all at

[13] Jerzy Gocko, "Ecology and Justice: From Environmental Justice to Integral Ecology in Laudato Si'," *Studia Ecologiae et Bioethicae* 22, no. 1 (2024): 75–82. https://doi.org/10.21697/seb.5799.

once like a sudden disaster. Communities face a steady breakdown and erosion of their well-being through constant exposure to stressful and alienating profit-driven work, toxins, polluted air, and the loss of reliable food sources. This process does more than just damage physical health; it destroys the social-cultural foundations of a community by erasing the traditional knowledge tied to the very rivers, forests, and farmlands they rely on. Rob Nixon's concept of "slow violence," articulated in his 2011 book *Slow Violence and the Environmentalism of the Poor*, captures this phenomenon of environmental destruction that occurs gradually and invisibly, accumulating across time and space in ways that statistics alone cannot measure but communities feel or subconsciously remember in daily life. The erosion of ecological systems through geodiversity loss, the degradation of geological and hydrological systems, does not only diminish nature's capacity to buffer disasters such as floods or droughts, but also compound a Weltanschauung turmoil and vulnerabilities in exploited and marginalized communities.

The Philippines' status as the world's second largest nickel producer and largest exporter of nickel ore exemplifies how extraction of minerals for the energy transition leads to deforestation, environmental damage, and serious harm to rural and Indigenous communities. In the provinces of Zambales and Palawan, home to some of the largest nickel deposits in the Philippines, deforestation and environmental pollution from nickel mining undermine the right to a clean, healthy and sustainable environment. Communities report adverse harms to their livelihoods, access to water, and health. Santa Cruz in Zambales can be considered a "sacrifice zone," where residents suffer physical and mental health consequences as a result of living in pollution hotspots and heavily contaminated areas, while Brooke's Point in

Palawan risks becoming one if nickel mining operations continue.[14]

Indigenous feminist scholarship emphasizes that extractivism wounds the Earth as a living being, directly challenging settler colonial frameworks that separate feeling from knowing. These frameworks also disconnect doing from understanding, masking the reality that environmental damage is material evidence of violence that the Earth, as Mother-Sister, physically feels.[15] Extractive industries do not just target the land; they assault Indigenous ways of being, knowing, and relating to the world. A systematic review by Morton and colleagues examining Indigenous communities in settler colonial states, including Australia and Aotearoa, shows that land dispossession from resource development leads to mental health challenges. The review also examines communities in the Americas. Mining and agriculture disrupt Indigenous identities and languages. They sever traditions and spiritual connections to land. This exacerbates psychological distress.[16] The concept of "environmental violence," as theorized by Marcantonio and Fuentes, provides a framework to understand human-produced pollution from extractive industries as

[14] "Philippines: What Do We Get in Return? How the Philippines Nickel Boom Harms Human Rights," *Amnesty International* (January 9, 2025), https://www.amnesty.org/en/documents/asa35/8607/2024/en/.

[15] Jeffrey Ansloos and Rebecca Beaulne-Stuebing, "Wounds on This Turtle's Back: On Feeling Extractivism and Felt Theories of Change," *Environmental Justice* 18, no. 4 (11 August 2025). https://doi.org/10.1089/env.2023.0055.

[16] Megan E. Morton et al., "Indigenous Communities and the Mental Health Impacts of Land Dispossession Related to Industrial Resource Development: A Systematic Review," *The Lancet Planetary Health* 7, no. 6 (2023): e501-e517.

violence.[17] It contributes to global health inequities through toxic emissions and ecological harm. This approach underscores pollution's impacts on human (and other living beings') health. It urges stronger legal and social accountability for extractive practices.[18]

Extractivism is more than just an economic activity; it is a structural force that drives health inequities, community breakdown, and ecological instability. In the Philippine context, weak governance and legal pluralism enable foreign-led mining and agribusiness to displace communities and pollute environments.[19] These industries cause respiratory illnesses, reproductive complications, and malnutrition.[20] Contaminated rivers

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[17] Richard Marcantonio and Agustín Fuentes, "Environmental Violence: A Tool for Planetary Health Research," *The Lancet Planetary Health* 7, no. 10 (2023): e859-e867

[18] Simon Bornschier and Manuel Vogt, "The Politics of Extractivism," *World Development* 176 (2024): 106493.

[19] "Philippines: What Do We Get in Return?"

[20] Ronald Herrera, Katja Radon, Ondine S. von Ehrenstein, Stella Cifuentes, Daniel Moraga Muñoz, and Ursula Berger, "Proximity to Mining Industry and Respiratory Diseases in Children in a Community in Northern Chile: A Cross-Sectional Study," *Environmental Health* 15, no. 66 (2016). https://doi.org/10.1186/s12940-016-0149-5; Rina Hariniaina Razafimahefa, Jerico Franciscus Pardosi, and Adem Sav, "Occupational Factors Affecting Women Workers' Sexual and Reproductive Health Outcomes in Oil, Gas, and Mining Industry: A Scoping Review," *Public Health Reviews* 43 (Apr 2022):1604653. doi: 10.3389/phrs.2022.1604653. PMID: 35574566; PMCID: PMC9096608; Aboagye Kwarteng Dofuor, Hanif Lutuf, Rahmat Quaigrane Duker, George Edusei, Bernice Araba Otoo, Jonathan Osei Owusu, Angelina Fathia Osabutey, et al. "Promoting Sustainable Mining for Health, Food Security and Biodiversity Conservation," *CABI Reviews* (May 2025). https://doi.org/10.1079/cabireviews.2025.0036; Ngianga-Bakwin Kandala, Tumwaka P Madungu, Jacques BO Emina, Kikhela PD Nzita, and Francesco P Cappuccio, "Malnutrition among Children under the Age of Five in the Democratic Republic of Congo (DRC): Does Geographic Location Matter?," *BMC Public Health* 11, no. 1 (2011). https://doi.org/10.1186/1471-2458-11-261.

carry toxins into bodies and livelihoods. In Colombia, illegal gold mining drives malaria by creating breeding grounds through deforestation and water contamination.[21] These sacrifice zones are geographies of environmental injustice. They enable prosperity elsewhere while local communities suffer.[22] "One Health" research,[23] an approach that recognizes the interconnections between human health, animal health, and environmental health, links ecological harm to human disease. Mining waste disrupts habitats and health across generations.[24]

Nickel mining expansion, driven by green extractivism for transition minerals,[25] shows how corporate strategies prioritize profit over local well-being.

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[21] Sandra V. Rozo, "Unintended Effects of Illegal Gold Mining and Malaria," *World Development* 136 (2020): 105119.

[22] Hannes Warnecke-Berger and Julia Ickler, *The Political Economy of Extractivism* (London: Routledge, 2023).

[23] One Health research is an interdisciplinary approach that recognizes the interdependence of human, animal, and environmental health, emphasizing that health outcomes arise from their dynamic interactions. It integrates perspectives from medicine, veterinary science, ecology, and public health to address complex challenges such as zoonotic disease, antimicrobial resistance, and environmental change through coordinated, systems-level action. See Jakob Zinsstag et al., "From 'One Medicine' to 'One Health' and Systemic Approaches to Health and Well-Being," *Preventive Veterinary Medicine* 101, nos. 3–4 (2011): 148–156.

[24] Johnston and Cushing, "Chemical Exposures, Health, and Environmental Justice," 48-57.

[25] "Transition minerals" is a policy-driven term designating minerals critical for low-carbon energy technologies, strategically framed to justify expanded mineral extraction under the guise of climate action. Critical scholarship shows that this framing can mask socio-environmental justice concerns and reproduce extractivist and colonial-capitalist models, even as it presents mining as ethically aligned with climate action. Cf. Amelia Hine, Chris Gibson, and Robyn Mayes, "Critical Minerals: Rethinking Extractivism?" *Australian Geographer* 54, no. 3 (2023): 1–18. https://doi.org/10.1080/00049182.2023.2210733.

Companies fail to deliver promised sustainability while exacerbating environmental degradation,[26] abiding by the competitive dynamics of global markets. Extractivism damages geodiversity through mining-induced soil erosion or river pollution, which undermines the foundation of healthy ecosystems and exacerbates health inequities in affected communities.[27]

From personal-psychological to social solidarity: the transformative power of education

Educational projects do more than transfer knowledge. They create a movement from individual psychological coping to collective social solidarity. This transformation follows what Durkheim called the shift from mechanical to organic solidarity. In extractivism-affected communities, an earlier form of solidarity existed through shared experience, common suffering, and collective identity as victims of environmental harm. However, effective resistance requires evolving toward organic solidarity, where specialized knowledge, differentiated roles in advocacy, and interdependent action create a stronger, more resilient form of social cohesion.[28] Community-based environmental education serves as the catalyst for this transformation, building

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[26] Mads Barbesgaard and Andy Whitmore, "'Blood on the floor": The Nickel Commodity Frontier and Inter-capitalist Competition under Green Extractivism." *Journal of Political Ecology* 31, no. 1 (2023): 567–585. doi: https://doi.org/10.2458/jpe.5458

[27] Janne Alahuhta et al., "Acknowledging Geodiversity in Safeguarding Biodiversity and Human Health," *The Lancet Planetary Health* 6, no. 12 (2022): e987-e992. Geodiversity is the variety of non-living natural components, such as geological formations, soil types, and hydrological systems, which underpins biodiversity. This diversity influences human health by shaping ecosystems and providing aesthetic and sensory benefits.

[28] Émile Durkheim, *The Division of Labor in Society*, trans. W. D. Halls (New York: Free Press, 1984 [1893]), 68.

what Freire termed "critical consciousness" through dialogue rather than top-down instruction.[29]

Educational projects transfer knowledge and foster collective responsibility. They encourage participants to see themselves as custodians of their environment, not only victims of extractive harm. Drawing on Freire's pedagogy of the oppressed, these initiatives reject the "banking model" of education, where knowledge is deposited into passive learners. Instead, they employ problem-posing education, where community members and facilitators engage in dialogue to critically analyze their lived reality.[30] This approach recognizes that marginalized communities already possess knowledge about their environment and extractivism's impacts. Education becomes a process of naming these experiences, connecting personal struggles to systemic injustice, and developing collective strategies for transformation through praxis - the combination of reflection and action.

Workshops and mapping exercises strengthen solidarity by reminding communities of their shared history and collective agency. These spaces function as what Freire called "culture circles" or horizontal learning environments where participants investigate generative themes drawn from their own experiences, such as water contamination, health impacts, or corporate deception. Education becomes a political act. It contests the narratives of inevitability that corporations and some state actors promote. The political dimension of environmental education lies not in partisan advocacy but in its fundamental challenge to relationships of

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[29] Paulo Freire, *Pedagogy of the Oppressed*, trans. Myra Bergman Ramos, 30th anniversary ed. (New York: Continuum, 2000 [1970]), 72-73.

[30] Freire, *Pedagogy of the Oppressed*, 43-47.

domination.[31] As Freire insisted, education is inherently liberating because it enables the oppressed to "perceive the reality of oppression not as a closed world from which there is no exit, but as a limiting situation which they can transform."[32]

Harnessing cultural bonds for resistance: the role of informal spaces

The success of community-led environmental education depends on cultural factors that strengthen solidarity and on informal spaces that have not been colonized by extractive systems. These spaces, whether community centers, religious gathering places, playgrounds, or the sari-sari stores where neighbors converge, serve as sites of resistance work where alternative knowledge can flourish.[33] When extractive industries dominate formal institutions like schools, workplaces, and government offices, these informal spaces become essential for maintaining what Durkheim identified as the "collective conscience,"[34] the shared

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[31] Ellen Prusinski, "What Is Political about a Tree? Grappling with Partisan Divides in Environmental Education," *Environmental Education Research* 30, no. 9 (2024): 1460–76. https://doi.org/10.1080/13504622.2024.2330988.

[32] Freire, *Pedagogy of the Oppressed*, 72-73.

[33] John Paul Takona, "Transformative Education: Paulo Freire's Pedagogy of the Oppressed and Its Contemporary Resonance," *Journal of Global Education and Research* 9, no. 1 (2025): 92-94.

[34] Émile Durkheim's concept of the collective conscience refers to the shared beliefs, values, and moral attitudes that operate as a unifying force within a society. Articulated most clearly in *The Division of Labor in Society* (1893), the collective conscience shapes social cohesion by regulating individual behavior and sustaining social order, particularly in societies characterized by mechanical solidarity. For Durkheim, changes in the content and strength of the collective conscience reflect broader transformations in social structure and forms of solidarity.

values and moral frameworks that bind communities together. In mining-affected communities, informal spaces preserve cultural practices, traditional ecological knowledge, and moral commitments to land and water that the formal economy seeks to erase.

Community time, the temporal rhythms of collective life also depends on these cultural bonds and informal spaces.[35] When communities control their own time through festivals, games, religious observances, or traditional gathering practices, they create opportunities for dialogue and organizing that exist outside the extractive economy's temporal demands. These moments allow for the slow work of consciousness-raising that Freire described, where people gradually come to see their personal troubles as public issues requiring collective action. People's initiatives show that alternatives exist and that ordinary people possess the expertise to document harm. They disrupt the cycle of passivity and silence that surrounds environmental destruction. Breaking this silence requires moving from a "culture of silence," where the oppressed internalize the oppressor's view of them as ignorant and incapable, to a culture of voice and agency.[36]

Place-based applications: building critical consciousness through dialogue

In the Philippine context, community-led programs teach residents about mining's health impacts. They use local knowledge to map polluted rivers and monitor diseases. These initiatives embody Freire's dialogical method where facilitators do not lecture about mining's

[35] Shlomy Kattan, "Time and Identity: Socializing Schedules and the Implications for Community," *Issues in Applied Linguistics* 16, no. 1 (2008). https://doi.org/10.5070/l4161005091.

[36] Freire, *Pedagogy of the Oppressed*, 72-73.

dangers but instead pose problems, "What has happened to our river?" "Why do so many children have breathing problems?" Through dialogue, community members generate their own analysis, connecting observable environmental degradation to corporate practices and state failures. These initiatives empower communities to document harm, such as water contamination linked to respiratory issues. They share findings through workshops.[37] The act of collective documentation transforms participants from objects of research into subjects of knowledge production, enacting Freire's vision of education as humanization.

In Barangay Acmac, Iligan City, community-led initiatives foster environmental awareness by emphasizing collaborative decision-making and sustainable practices. Residents address local environmental challenges.[38] This collaborative approach builds organic solidarity by creating specialized roles of being planners, documenters, community health workers, and legal advocates, whose interdependence strengthens the movement. Unlike mechanical solidarity based solely on shared suffering or identity, this organic solidarity harnesses diverse skills and knowledge in coordinated action.[39] These efforts highlight the power of

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[37] Peter Thijssen, "From Mechanical to Organic Solidarity, and Back: With Honneth Beyond Durkheim," *European Journal of Social Theory* 15, no. 4 (2012): 462-465.

[38] Eslit, Edgar, "Empowering Change at the Grassroots: Community-Led Initiatives for Local Environmental Protection," *Empowering Change at the Grassroots: Community-Led Initiatives for Local Environmental Protection* (July 2023). https://doi.org/10.20944/preprints202307.1055.v1.

[39] Émile Durkheim introduces the distinction between mechanical and organic solidarity in *The Division of Labor in Society* (1893), where he explains how different forms of social cohesion correspond to different types of social organization. Mechanical solidarity characterizes societies with high levels of similarity among individuals and a strong, collective moral consciousness, while organic

education in promoting environmental justice. They equip communities with tools to advocate for change.

In Colombia, campaigns educate villagers about malaria risks from illegal mining. They promote collective monitoring of water sources.[40] Here, environmental education addresses immediate health threats while building long-term capacity for resistance. The collective monitoring networks exemplify Freire's concept of praxis where communities reflect on the relationship between illegal mining and disease, then take action to monitor and protect water sources, which generates new knowledge that informs further reflection and action. These programs, rooted in place-based expertise, counter corporate "greenwashing," the practice of misleading claims about environmental benefits, that hides extractivism's toll.[41] By naming and analyzing greenwashing as a specific form of ideological domination, these educational programs help participants develop what Freire called "critical

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solidarity emerges in more complex societies where social cohesion is based on differentiation, interdependence, and the division of labor.

[40] Maylis Douine, Yann Lambert, Lise Musset, Helene Hiwat, Liana Reis Blume, Paola Marchesini, Gilberto Gilmar Moresco, et al., "Malaria in Gold Miners in the Guianas and the Amazon: Current Knowledge and Challenges," *Current Tropical Medicine Reports* 7, no. 2 (2020): 37–47. https://doi.org/10.1007/s40475-020-00202-5. See also Lisseth Casso-Hartmann, Paulina Rojas-Lamos, Kelli McCourt, Irene Vélez-Torres, Luz Edith Barba-Ho, Byron Wladimir Bolaños, Claudia Lorena Montes, Jaime Mosquera, and Diana Vanegas, "Water Pollution and Environmental Policy in Artisanal Gold Mining Frontiers: The Case of La Toma, Colombia," *Social Science Research Network* (January 2022). https://doi.org/10.2139/ssrn.4119261.

[41] Chang, Liang, Min Tang, Kuangxuan Xu, and Wenrui Zhao, "Anatomy of Corporate Pseudo-Social Responsibility Behavior: Identification Mechanism and Preventive Countermeasures of Greenwashing Phenomenon," *Highlights in Business, Economics and Management* 45 (December 2024): 880–88. https://doi.org/10.54097/sze0x087.

consciousness" - the capability to recognize oppressive systems and envision alternatives.

Across these contexts, community-led environmental education succeeds not by imposing external frameworks but by creating dialogical spaces where communities can examine their reality, recognize extractivism as a limiting but not permanent situation, and develop collective strategies for transformation. This educational praxis builds both the critical consciousness needed to name injustice and the organic solidarity needed to resist it, transform it.

Vision-mission and cultural foundations of resistance

Resistance creates narratives that foster "world-making," the practice of asserting alternative values and creating new social realities against market logics.[42] However, to fully understand resistance movements, we recognize that they are grounded in vision-mission frameworks rooted in culture, myth, and models of resistance passed down through generations. Indigenous and community-based resistance to extractivism does not emerge from nowhere but rather draws upon deep cultural memory, ancestral teachings about relationship to land and water, and cosmovisions that position

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[42] Alexandre de Pádua Cariere, Dimitris Papadopoulos, Edson Antunes Quaresma Júnior, and Alfredo Rodrigues Leite da Silva, "The Ontology of Resistance: Power, Tactics and Making Do in the Vila Rubim Market," *Urban Studies* 58, no. 8 (2020): 1615–33. https://doi.org/10.1177/0042098020912193. Jenny Pickerill and Paul Chatterton, "Notes towards Autonomous Geographies: Creation, Resistance and Self-Management as Survival Tactics," *Progress in Human Geography* 30, no. 6 (2006): 730–46. https://doi.org/10.1177/0309132506071516.

humans as caretakers rather than exploiters of nature.[43] A case in point: the Sarayaku, an Amazonian Kichwa community in Ecuador gained international attention a decade ago for successfully expelling the Argentinean CGC oil company and winning a court case against the state for granting oil concessions without consultation. To protect themselves from future extractive projects, the community created the legal concept of *kawsak sacha* ("the living jungle"), which recognizes the jungle as inhabited by visible and non-visible beings with legal rights. Drawing on this worldview, Sarayaku has cultivated a broader anti-colonial, anti-extractivist, and anti-capitalist culture of resistance. Based on ethnographic research and interviews, it is argued that while legal protections can be overturned, this internally rooted culture of resistance is more resilient and remains under the community's control.[44]

The resistance movements across mining-affected communities draw strength not only from ancestral memory but from deeply rooted cultural concepts of interconnection. In the Philippine context, the concept of *kapwa*, "the perceived state of shared identity and interdependent relationships,"[45] provides a philosophical foundation for resistance that challenges Western individualism. *Kapwa* recognizes a "'unity' of the self and

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[43] Ksenija Hanaček, Dalena Tran, Arielle Landau, Teresa Sanz, May Aye Thiri, Grettel Navas, Daniela Del Bene, et al., "'We are Protectors, not Protestors': Global Impacts of Extractivism on Human-nature Bonds. *Sustainability Science* 19, no.6 (2024):1789-1808. doi: 10.1007/s11625-024-01526-1. Epub 2024 Aug 23. PMID: 39526229; PMCID: PMC11543721.

[44] Leonidas Oikonomakis, "We Protect the Forest Beings, and the Forest Beings Protect Us: Cultural Resistance in the Ecuadorian Amazonia," *VU Research Portal* 26, no. 1 (2020): 129–46. https://doi.org/10.5281/zenodo.4315282.

[45] Thia Cooper, "Method and Themes for a Philippine Theology of Development," *MST Review* 25, no. 1 (2023): 136-172. https://mstreview.com/index.php/mst/article/view/695.

others," understanding oneself always in relation to community. This collectivist, relational worldview aligns with Indigenous cosmovisions globally that position humans not as separate from but as part of nature and each other. When mining companies pollute a river or destroy a forest, the harm is not experienced as damage to external property but as violence against the shared self, against *kapwa*. This understanding transforms environmental defense from abstract advocacy into intimate protection of collective identity and being. The concept of *kapwa* thus offers both a critique of extractive capitalism's atomized individualism and a vision for postextractive futures grounded in mutual care and interdependence.

Cultural memory serves as both foundation and fuel for resistance.[46] Indigenous communities worldwide hold memories of dispossession, broken treaties, forced relocations, and environmental destruction that stretch across generations.[47] Yet cultural memory also preserves knowledge of successful resistance, of ancestors who refused to submit, of spiritual practices that sustained communities through colonization, and of alternative ways of organizing human-nature relationships.[48] This dual function of cultural memory, remembering both trauma and resilience, enables communities to contextualize current extractive projects within longer

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[46] Nayab Sadiq, "Indigeneity and Resistance in Zubair Ahmad's Grieving for Pigeons," *NUML Journal of Critical Inquiry* 22, no. II (2024): 49–63. https://doi.org/10.52015/numljci.v22iii.294.

[47] Melissa Walls, "The Perpetual Influence of Historical Trauma: A Broad Look at Indigenous Families and Communities in Areas Now Called the United States and Canada," *International Migration Review* (December 2023). https://doi.org/10.1177/01979183231218973.

[48] Erica Neeganagwedgin, "Ancestral Knowledges, Spirituality and Indigenous Narratives as Self Determination," *AlterNative: An International Journal of Indigenous Peoples* 9, no. 4 (2013): 322–34. https://doi.org/10.1177/117718011300900404.

histories of colonial violence while simultaneously drawing upon proven strategies of survival and resistance.[49]

These resistance movements are guided by visions of alternative futures that reject the inevitability of extractive capitalism. Rather than accepting sacrifice zones as the price of development, communities envision and work toward what could be called "postextractive futures": ways of organizing economic and social life that prioritize ecological health, cultural survival, and relational well-being over GDP growth and capital accumulation.[50] Indigenous leadership in particular offers models for these alternative futures, drawing on concepts like "living in harmony with the community, others, and the spirit world," where wellness is understood not as individual material accumulation but as balance within interconnected systems.[51] Plans like Wy-Kan-Ush-Mi Wa-Kish-Wit (Spirit of the Salmon), developed by Columbia River tribes, demonstrate how traditional ecological knowledge can be integrated with scientific principles to envision holistic restoration that serves both human communities and more-than-human worlds.[52]

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[49] Macarena Gómez-Barris, "Mapuche Mnemonics: Beyond Modernity's Violence," *Memory Studies* 8, no. 1 (2014): 75–85. https://doi.org/10.1177/1750698014552410.

[50] Pabel Camilo and Eija Ranta, "Post-Extractivist Horizons in Latin America: Between Utopias and Struggles for Re-Existence against Neo-Extractivism," *Sociological Research Online* (November 2024). https://doi.org/10.1177/13607804241275293; Parvez Anam, Butt, Berkhout Esmé, Chawkat Zaghbour, Mira Bush, Alex Liepollo Pheko, and Lebohang Verma Ritu, "Radical Pathways beyond GDP: Why and How We Need to Pursue Feminist and Decolonial Alternatives Urgently," *Oxfam Policy & Practice* (2023). https://policy-practice.oxfam.org/resources/radical-pathways-beyond-gdp-621532/.

[51] "Indigenous Resistance Movements."

[52] Giulia C. S. Good Stefani, "Indigenous Leaders at the Frontlines of Environmental Injustice and Solutions," (Oct 11, 2021).

Barricades, assemblies, and rituals performed at protest sites transform contested spaces into arenas of cultural affirmation. These gestures communicate that defending land is inseparable from defending identity and future generations. The performance of traditional rituals at protest sites, the invocation of ancestral names and stories, and the use of Indigenous languages in resistance chants all function to assert cultural continuity and spiritual authority. These practices transform physical blockades into ceremonies of cultural renewal, reminding both protesters and witnesses that the struggle is not merely political or economic but deeply spiritual.[53] Activists take risks in the face of violent retaliation. This reveals commitment to principles that transcend material survival. Resistance carries a pedagogical dimension. It teaches younger members that dignity involves saying no to destructive practices, even when refusal comes at personal cost. This intergenerational teaching represents what Indigenous leadership scholars call "restorying," the practice of countering dominant narratives of inevitability and powerlessness with stories of agency, resistance, and alternative possibilities that younger generations can carry forward.[54]

Inspired leadership and participatory models

https://www.nrdc.org/bio/giulia-cs-good-stefani/indigenous-leaders-frontlines-environmental-injustice-and-solutions

[53] Gandhi Ajay, "Indigenous Resistance to New Colonialism," *Cultural Survival Quarterly*, 2001, https://www.culturalsurvival.org/publications/cultural-survival-quarterly/indigenous-resistance-new-colonialism

[54] Tina Ngaroimata Fraser and Carolyn Kenny, eds., *Living Indigenous Leadership: Native Narratives on Building Strong Communities* (Vancouver: University of British Columbia Press, 2012), 12-34.

Effective resistance to extractivism requires inspired leadership that embodies cultural values while adapting to contemporary challenges. Indigenous leadership models offer important alternatives to hierarchical corporate or state leadership. These models emphasize collective decision-making, consensus-building, elevation of elder wisdom, and holistic approaches to problem-solving that integrate ethical, spiritual, and practical considerations.[55] Leaders like those who emerged from the San Fernando, Romblon resistance or the Standing Rock water protectors do not function as heroic individuals but rather as facilitators of collective action, people who "introduce new knowledge, challenge assumptions, convince people that things can be different, propose change, and mobilize the community to take action."[56]

Inspired leadership in resistance movements operates through trust, adaptability, and vision rather than hierarchical power. Leaders gain authority not through position but through demonstrated commitment to community well-being, cultural knowledge, spiritual grounding, and willingness to take personal risks.[57] The predominantly Indigenous and largely female leadership of many environmental justice movements challenges patriarchal and authoritarian models of organization, instead creating spaces for participatory decision-making where diverse voices, especially those of women and

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[55] Charles Kojo Vandyck, "Embracing Indigenous Leadership Models for Africa's Development Renaissance – WACSI," (16 Aug 2023). https://wacsi.org/embracing-indigenousleadership-models-for-africas-development-renaissance/.

[56] Miriam Jorgensen, quoted in Veronica L. Veaux, "Indigenous Leadership," in *Springer Encyclopedia of Business and Management*, ed. C. Voyageur, L. Brearley, and B. Calliou (Cham: Springer, 2024), 73.

[57] Fraser and Kenny, *Living Indigenous Leadership*, 12-34.

youth, shape strategy and direction.[58] This participatory model strengthens resilience by distributing knowledge, building collective capacity, and ensuring that movements can continue even when individual leaders face repression or violence.[59]

Youth leadership has become particularly significant in contemporary resistance movements. Young Indigenous activists use social media platforms to bypass traditional gatekeepers and share frontline realities directly with global audiences through hashtags like #NoDAPL, #StopLine3, and #IdleNoMore.[60] Youth organizers bring technological literacy, cross-cultural coalition-building skills, and fresh energy while elder leaders provide historical context, cultural grounding, and strategic wisdom, creating intergenerational collaboration that strengthens movements. Young leaders like those from the Standing Rock and Cheyenne River Sioux who organized a 2,000-mile relay run to deliver petitions, or youth from the Umatilla Indian Reservation who called on President Biden to restore salmon habitat, demonstrate how emerging leadership rejuvenates resistance while maintaining connection to cultural foundations and visions for alternative futures.[61]

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[58] Manuela L. Picq, "Resistance to Extractivism and Megaprojects in Latin America," *Oxford Research Encyclopedia of Politics* (19 Nov. 2020).

[59] Jaskiran Dhillon, ed., *Indigenous Resurgence: Decolonization and Movements for Environmental Justice* (New York: Berghahn Books, 2022), 1-18.

[60] Chase Puentes and Nicoletter Worrell, "Indigenous Youth Leadership: Resistance in the Age of Pipelines," School of Marine and Environmental Affairs, University of Washington (Feb 24, 2022), https://smea.uw.edu/currents/indigenous-youth-leadership-resistance-in-the-age-of-pipelines/.

[61] CRITFC, "Spirit of the Salmon Plan."

Philippine contexts: from protest to political power

Empowerment through community resistance manifests in the Philippine context. In San Fernando, Romblon, residents formed a human barricade in 2023 to block mining trucks. Their leader won election as mayor in 2025.[62] This trajectory from grassroots resistance to formal political power illustrates how sustained collective action can transform local governance, enabling communities to institutionalize opposition to extractivism through electoral means. The mayor's victory represents not just individual political success but community validation of resistance as legitimate political platform and vision for alternative development. This reflects the power of collective action rooted in local identity.

Community resistance to extractivism does not emerge in a vacuum but is significantly shaped by what Dagmang calls the "hidden" or "implicit" realities of geography, social formations, and culture. In agricultural and less-urbanized settings like San Fernando or rural Marinduque, resistance gains strength from pre-existing patterns of neighborhood cooperation, less-regimented work schedules that allow community availability, and cultural memory rooted in shared spaces - the *bundok, patag, at dagat* (mountains, plains, and seas) that trigger memories of collective labor and mutual support. These island-provincial or rural-agricultural lifeworlds provide what urban settings often lack: time for community organizing after work, spaces not colonized by commercial interests, and social dispositions toward

[62] Jerry Mangaluz, "From Protest to Power: Activist Now Mayor in Romblon," *Philstar.com* (May 14, 2025), https://www.philstar.com/nation/2025/05/14/2443067/protest-power-activist-who-blocked-mining-trucks-now-mayor-romblon.

pakikipagkapwa (fellowship) and *bayanihan* (communal work). Understanding these geographical and cultural enablers helps explain why extractive resistance thrives in certain contexts while struggling in others, and why successful movements often emerge from rural and indigenous communities whose lifeworlds have not yet been fully colonized by capitalist time-discipline and spatial organization.[63]

Similarly, in South Cotabato province, local communities mobilized against a proposed opencast coal mine that would extract from the Philippines' potentially largest coal deposit. These mobilizations challenged the state's capital-led and nature-divorced extraction, advocating for Indigenous People's rights and calling for justice in development approaches.[64] The South Cotabato resistance demonstrates how communities articulate alternative visions of development that center Indigenous rights, ecological sustainability, and local self-determination rather than accepting the state's framing of megaprojects as inevitable or beneficial. By explicitly naming the regime as "capital-led" and "nature-divorced," protesters challenged the ideological foundations of extractivism itself.

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[63] Ferdinand D. Dagmang, "Geography, Society, and Culture: Enablers (or Inhibitors) of Basic Ecclesial Community Development," *MST Review* 24, no. 1 (2022):1-36. https://mstreview.com/index.php/mst/article/view/678. Conversely, according to Dagmang, urban geographies dominated by contractual employment, commercial preoccupations, and built environments imbued with corporate power, what Dagmang calls spaces "imbued with the spirit and power of Coca-Cola, Citibank, BPI", present greater obstacles to sustained collective action, as workers separated from their communities for 10-16 hours daily struggle to find time and energy for neighborhood-based resistance.

[64] Laurence L. Delina, "Topographies of Coal Mining Dissent: Power, Politics, and Protests in Southern Philippines," *World Development* 137 (2021): 105194.

Resistance in action: from local mobilizations to policy transformation

Beyond the Philippines, Indigenous and rural communities in Colombia resist illegal mining through land defense councils. They protect water sources and traditional practices.[65] These land defense councils function as parallel governance structures that assert community authority over territorial decision-making in contexts where formal state institutions have failed to protect communities or have actively facilitated dispossession. The councils draw upon both traditional Indigenous governance models and contemporary organizational strategies, creating hybrid forms of resistance appropriate to current conditions while rooted in cultural memory.[66] This resistance highlights how colonial histories and state-led corporate dispossession continue environmental racism and structural violence against ethnic communities. Local opposition breaks apart extractivist development models by highlighting the injustices imposed on Indigenous communities.

Resistance to extractive megaprojects meets violence with Latin America representing 60% of nature defenders killed worldwide as of 2020.[67] The Philippines is consistently ranked as one of the most dangerous countries for forest and environmental defenders, with

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[65] Irene Vélez-Torres and Diana Vanegas, "Contentious Environmental Governance in Polluted Gold Mining Geographies: The Case of La Toma, Colombia," *World Development* 157 (2022): 105953.

[66] Vélez-Torres and Vanegas, "Contentious Environmental Governance," 105953.

[67] Carlos Conde, "Philippines Worst in Asia for Killings of Environmental Defenders," Human Rights Watch, 2024, https://www.hrw.org/news/2024/01/10/philippines-worst-asia-killings-environmental-defenders.

dozens of activists murdered annually.[68] This violence against environmental defenders is not incidental but rather a deliberate strategy to suppress resistance and protect extractive industries. Governments and corporations collaborate to frame defenders as terrorists, criminals, or obstacles to development, criminalizing protest and deploying state security forces and paramilitary groups to intimidate, assault, or kill those who resist.[69] Despite this brutal repression, communities have developed new forms of resistance that recognize personal sacrifice may be required to defend nature and rights to self-determination. The willingness of water protectors at Standing Rock to face attack dogs, water cannons in freezing temperatures, rubber bullets, and mass arrests, or of Philippine community members to physically block mining trucks with their bodies, demonstrates commitment that transcends individual safety and speaks to collective determination to protect future generations.[70] Cultural memory of ancestral resistance to colonization provides both inspiration and tactical knowledge for contemporary struggles, while visions of alternative futures sustain activists through immediate dangers and setbacks.[71]

Ecuador's Rio Blanco mine demonstrates how resistance emerges through coordinated strategies that blend street protests with legal action. Rural communities and urban youth mobilized alongside lawyers and academics to suspend Chinese-financed extractive megaprojects in 2018.[72] These movements

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[68] Sanchez, Emerson, and Jayson Lamchek, "The Year of Daring: Revisiting the Philippine Left's Dalliance with a Strongman," *Melbourne Asia Review* 6 (May 2021). https://doi.org/10.37839/mar2652-550x6.13.

[69] Picq, "Resistance to Extractivism and Megaprojects."

[70] "Indigenous Youth Leadership."

[71] Fraser and Kenny, *Living Indigenous Leadership*, 12-34.

[72] Picq, "Resistance to Extractivism and Megaprojects."

reject market-driven sustainability metrics that ignore human costs, prioritizing instead "relational well-being," a concept emphasizing the quality of relationships among people, communities, and ecosystems rather than individual material accumulation.[73] By centering relationships rather than commodities, connection rather than consumption, and collective flourishing rather than private profit, this alternative metric provides both critique of current development models and vision for postextractive futures grounded in Indigenous cosmovisions and community values.[74]

Electoral strategies such as green voting reveal how grassroots energies reshape political landscapes. They extend the struggles of protest sites into the institutional domain. Degrowth policies, economic frameworks that advocate for reducing material and energy consumption, prioritizing sufficiency and well-being over continuous GDP growth, provoke reflection on what constitutes prosperity.[75] In the Philippines, anti-mining groups launched a "green voting" campaign for the 2025 polls. They urge voters to choose leaders prioritizing environmental and community welfare.[76] This strategy empowers communities to influence governance. It addresses legal pluralism that enables corporate exploitation.[77] In Spain, a "Just Transition Agreement"

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[73] Carola P. Krieg and Reetta Toivanen, eds., *Situating Sustainability* (Helsinki: Helsinki University Press, 2021), 234-256.

[74] Krieg and Toivanen, *Situating Sustainability*, 234-256.

[75] Kallis, Giorgos, Vasilis Kostakis, Steffen Lange, Barbara Muraca, Susan Paulson, and Matthias Schmelzer, "Research on Degrowth," *Annual Review of Environment and Resources* 43, no. 1 (2018): 291–316. https://doi.org/10.1146/annurev-environ-102017-025941; Bengi Akbulut, "Degrowth," *Rethinking Marxism* 33, no. 1 (2021): 98–110. https://doi.org/10.1080/08935696.2020.1847014.

[76] Ivana Gozum, "Anti-Mining Groups Urge Public to 'Vote Green' in 2025 Polls," *Rappler*, 2025, https://www.rappler.com/philippines/elections/anti-mining-groups-urge-public-vote-green-2025/.

[77] Bornschier and Vogt, "The Politics of Extractivism," 106493.

phased out coal mining, supported affected workers, and invested in impacted municipalities. It boosted the incumbent Socialist Party's vote share in coal-mining areas during the 2019 election.[78] When environmental and social justice movements align, these strategies counteract the ecological and social harms of extractivism.

Integral ecology as a framework for renewal

Integral ecology, as articulated in Pope Francis's 2015 encyclical *Laudato Si': On Care for Our Common Home*, provides a framework for understanding and addressing extractivism's harms. The encyclical emphasizes that "everything is connected" and that ecological crises cannot be addressed in isolation from social, economic, and spiritual dimensions. *Laudato Si'* critiques a "throwaway culture" that treats both nature and vulnerable people as disposable, calling instead for an "integral ecology" that recognizes the interconnection of environmental degradation with social inequity, spiritual impoverishment, and cultural loss. This framework challenges technocratic paradigms that reduce environmental problems to technical fixes while ignoring underlying structural injustices and ethical failures. As Raluto argues in his ecological theology of liberation, this framework critically appropriates and expands the notion of the preferential option for the poor to privilege those who suffer not only from class oppression, racial

[78] Diane Bolet, Fergus Green, and Mikel González-Eguino. "How to Get Coal Country to Vote for Climate Policy: The Effect of a "Just Transition Agreement" on Spanish Election Results." *American Political Science Review* 118, no. 3 (2024): 1344-1359. doi:10.1017/S0003055423001235

discrimination, and sexist ideologies, but also from ecological exploitation.[79]

This framework underscores the ethical responsibility to listen to marginalized voices. Those who live in sacrifice zones hold insights into the consequences of extractivism. Integral ecology does not impose a uniform model. It encourages dialogue across cultures and faiths. Dialogue also occurs across disciplines. It invites theologians and scientists to collaborate in shaping practices that safeguard life. Community leaders also participate in this collaboration. Integral ecology weaves together spiritual insight and empirical knowledge. It cultivates a vision of sustainability that transcends technocratic fixes and addresses the roots of ecological and social crisis.[80]

Integral ecology unites the resistance strategies examined throughout this paper (community education, place-based action, electoral mobilization, and degrowth policies) into a coherent vision. It views health and ecology as inseparable. Rooted in *Laudato Si'*s call for interconnectedness, it challenges the commodification of nature and people. Integral ecology transforms sacrifice zones into spaces of sacred life by emphasizing care for both people and place. It opposes anthropocentrism and valorizes species other than human beings. This offers a contrast to green extractivism where sustainability promises dissipate when considering environmental

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[79] Reynaldo D. Raluto, *Poverty and Ecology at the Crossroads: Towards an Ecological Theology of Liberation in the Philippine Context* (Quezon City: Ateneo de Manila University Press, 2015). Cf. also Daniel P. Castillo, "Integral Ecology as a Liberationist Concept," *Theological Studies* 77, no. 2 (2016): 353–76. https://doi.org/10.1177/0040563916635781.

[80] Johan De Tavernier and Kingsley Ndubueze, "Laudato Si's View on Integral Ecology in Light of the Planetary Boundaries Concept," *New Blackfriars* 101, no. 1096 (April 2020). https://doi.org/10.1111/nbfr.12500.

impacts on fragile ecosystems. The framework understands natural beings as possessing intrinsic value rather than existing as objects. This shared concern for ecosystem protection positions Catholic integral ecology and Indigenous worldviews as allies in defending environments against extractive activities, even when their theological frameworks differ.[81] The Catholic Church's approach to Indigenous cultures through interculturality and Gospel inculturation fosters collaboration. It integrates insights from Indigenous cosmovisions into integral ecology frameworks that can ethically address extractive mining practices. Integral ecology reimagines sustainability as justice-centered and relational.

Conclusion

Resisting extractivism is both a moral and practical necessity. This paper shows how personal experience and collective struggle converge to reveal viable alternatives grounded in an integral ecological framework. Communities create spaces of hope by acknowledging loss while sustaining resilience, showing that sustainability is not a distant ideal but something shaped through daily practices of care and resistance.

The health and environmental harms of extractivism demand urgent collective action. My father's and brother's death exposes the systemic violence of sacrifice zones, while the cases discussed here - from mining protests in Romblon and community health campaigns in Colombia to policy reforms in Spain, and resistance movements in Ecuador - demonstrate how resilience emerges across varied contexts. Together, these cases

[81] Carlos Zepeda, "Integrating the Ethics of Integral Ecologies into Global Environmental Governance," *Journal of Global Ethics* (April 2025): 1–12. https://doi.org/10.1080/17449626.2025.2491365.

show that extractive harm is global and that possibilities for renewal are widely shared. By linking integral ecology with community-led education, place-based resistance, and policy change, marginalized communities and their allies challenge extractive dominance and articulate justice-centered ways of living with the Earth. In this vision, sacrifice zones are no longer sites of abandonment but places where dignity and ecological repair can emerge through solidarity.

About the Author

Alvenio G. Mozol Jr. is a fulltime faculty with the Department of Theology and Religious Education, De La Salle University. He is an urban biker. Recently he published "Adapting PLANTdex for Tropical Agriculture: A Local Framework for Sustainable Farming." *Journal of Human Ecology and Sustainability*, 3, no. 1 (2025); "From River to Review: An Autoethnographic Inquiry into the Negotiated Self in Academic Publishing." *Symbolic Interaction* (2025).
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