

Integral Ecology in Research Practice

Methodological Insights for Transformative Change

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I. Introduction

"The philosophers have hitherto only interpreted the world in various ways. The point, however, is to change it." —Karl Marx from notes to Engels

Contemporary social and ecological injustices, such as those caused by climate change, biodiversity loss, poverty, and inequality, are systemic and interlinked. For that reason, many argue that conventional modes of knowledge production and conventional research are, at best, insufficient for addressing these challenges, at worst, they can help perpetuate them. This raises serious questions for researchers' current practices. How can researchers overcome the limitations of conventional research methodologies and modes of knowledge production? Could the emerging 'integral ecology' paradigm help provide a better framework for research? What methodologies and ethical underpinnings should researchers practise so that their research better aligns with care for our living planet?

In this paper, we seek to understand how the paradigms of transdisciplinarity and integral ecology could answer the above questions. In so doing, we hope to illuminate what integral ecology research could look like and how it might be practised. The analysis proceeds in three parts. First, we highlight the ways in which integral ecology challenges dominant epistemologies and modes of research. Second, we provide a selective review of developments in transdisciplinary research that respond to those challenges. Finally, we reflect on a recent attempt to put integral ecology into practice through a research initiative focusing on climate change adaptation in food systems in Africa.



Researchers beware: A cautionary tale

The Intergovernmental Panel on Climate Change (IPCC) was created in 1988 by the World Meteorological Organization and the United Nations Environment Program.¹ It is considered one of

the most authoritative and successful science-to-policy platforms. As a part of the UN system, the IPCC is tasked with providing 'governments at all levels with scientific information that they can use to develop climate policies'.² Their first report, released in 1990, was instrumental in paving the way for the UN Framework Convention on Climate Change (UNFCCC), which was signed at the Rio Earth

KEY POINTS

- **Integral ecology is a paradigm rooted in theological, ethical, moral values** seeing people, nature and its spiritual, faith-based understandings as one interconnected holistic reality. Those embracing this paradigm seek ecological conversion —a radical change towards socio-ecological justice, harmony, and care for our living planet.

- **It can be applied in research through four intersecting lenses** or simultaneous methodological principles: a) listening and responding to the cry of the marginalised, b) listening and responding the cry of the Earth; c) critical awareness on how everything is connected; d) seeking a radical ecological conversion.

- **Research practice inspired in integral ecology is a lifelong transformative journey** for the researcher and diverse communities involved. It inspires co-producing knowledge beyond disciplines awakening a critical consciousness to overcome socio-ecological injustice.

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“ climate change has been persistently framed as a highly technical problem in Western scientific terms, requiring mainly technical solutions. This inevitably excludes and delegitimises alternative values and ways of knowing ”



Summit just two years later.

Today, the IPCC remains hugely influential in climate politics. Its reports set the boundaries for what can and should be discussed in the UNFCCC process and its authors help determine what policy options are considered.³ The immense power associated with the IPCC's mandate and reputation has far-reaching effects. However, the vast majority of IPCC authors are white men trained as economists, engineers, physicists, and natural scientists in universities based in the United States or the United Kingdom.⁴ As a result, these authors form a homogenous epistemic community, they lack knowledge diversity and they share a limited set of life experiences,

disciplinary perspectives, and political interests.

IPCC assessment reports themselves have recognised their authors' lack of diversity. For instance, the 4th Assessment Report (IPCC 2007) recognised the need to include indigenous and local knowledge.⁵ Its authors argued that indigenous knowledge was key to developing adaptable and resilient ecological strategies. Despite this acknowledgement, in practice, climate change has been persistently framed as a highly technical problem in Western scientific terms, requiring mainly technical solutions.⁶ This inevitably excludes and delegitimises alternative values and ways of knowing, including those of

Indigenous communities (e.g. spiritual modes of knowing).⁷

All of the above has marginalised and devalued non-Western approaches such as Indigenous science. Crucial topics such as spirituality, ethics, and meaning-making are left out entirely, as are the wealth of insights about climate change not recorded in peer-reviewed literature. In this context, words such as 'expert', 'knowledge', and 'science' are revealed to be loaded terms; their definitions have concrete political consequences. The IPCC thus violates the norms of both epistemic diversity and epistemic justice.⁸

Knowledge is not constructed in a void or written on a blank slate.



People generate knowledge by relating with each other and their environment in contexts uniquely shaped by social power relations.⁹ These power relations influence *who* is included, *what* content is deemed important, and *how* the content is discussed.¹⁰ The IPCC reflects this. Consider African researchers. In the IPCC's 2022 report, only 27 African authors were among the total 337.¹¹ This trend reflects wider societal inequalities. Scholars studying African research trends on climate change from 1990 to 2020 found that: a) the *proportion of global research funding on climate change* reflected that at most 3.8% of the funding available on climate change research was spent on African topics¹² – a figure that becomes outrageous given Africa's share of the world population and high vulnerability to climate change; b) that the *location and type of the sources of the research funding* have been historically imbalanced –out of 521 funding organisations only one was based in Africa with the rest mostly located in the UK, the USA and the EU¹³; and c) that *the recipients* of Africa-related climate research funding, that is, which organisations ultimately receive the cash flow of research funding also mostly ends up in research institutions based in western Europe and the United States (78%) compared to only 14.5% for institutions based in



Africa. Hence most of the funding for research on climate change in Africa 'both originates outside Africa and goes to researchers outside the continent'¹⁴. It is unsurprising, then, that the perspectives of historical polluters wholly dominate knowledge and narratives about climate change.

Ultimately, this has real-life consequences for African communities as neglect in science translates to neglect in policy. Alternative perspectives can still find their way into climate change negotiations (the UNFCCC process), but achieving this is extremely challenging. Researchers who attend UNFCCC negotiations as observers are rarely permitted to speak. When they do speak, they are required to organise joint statements in blocs representing interests as vague as

'the environment' or 'business and industry'. Providing an alternative voice to the epistemic community that produces the 'official' and 'authoritative' IPCC reports becomes nearly impossible.

II. Integral Ecology: Awakening Ethical Consciousness to Care for our Living Planet

All beings, human and non-human, are affected by intersecting injustices that are both social and ecological. It is often easy to see this reality, where poverty, inequality, climate change, biodiversity loss, and many more types of injustice collide. However, we do not necessarily understand its complexity and systemic interconnectedness. Scholars from diverse academic traditions have suggested that knowledge



“The most valuable aspect of integral ecology is its robust theological foundation. This foundation sets it apart from other responses to social and ecological injustice.”

this perspective, integral ecology is best understood as a journey away from the technocratic paradigm and toward a holistic and harmonious reconciliation of people with each other, with God, and with all of creation.²⁶ How then, can the production of knowledge be a part of this journey? How can research be transformative, holistic, and liberating rather than exclusive, elitist, and oppressive?

For the purposes of research and analysis, integral ecology effectively acts as a set of theologically inspired lenses that

support a more transdisciplinary, ethically inclusive, and holistic approach to knowledge production.²⁷ This approach manifests itself through ‘a broad dialogical perspective that includes everybody, from scientific and secular powers to the poor and indigenous communities.’²⁸ It stems from the theological foundations of integral ecology and uses these foundations as a way of ‘seeing’ reality.²⁹ These lenses, or ‘ways of seeing’, include:

hearing and responding to *the cry of the excluded*, the marginalised,

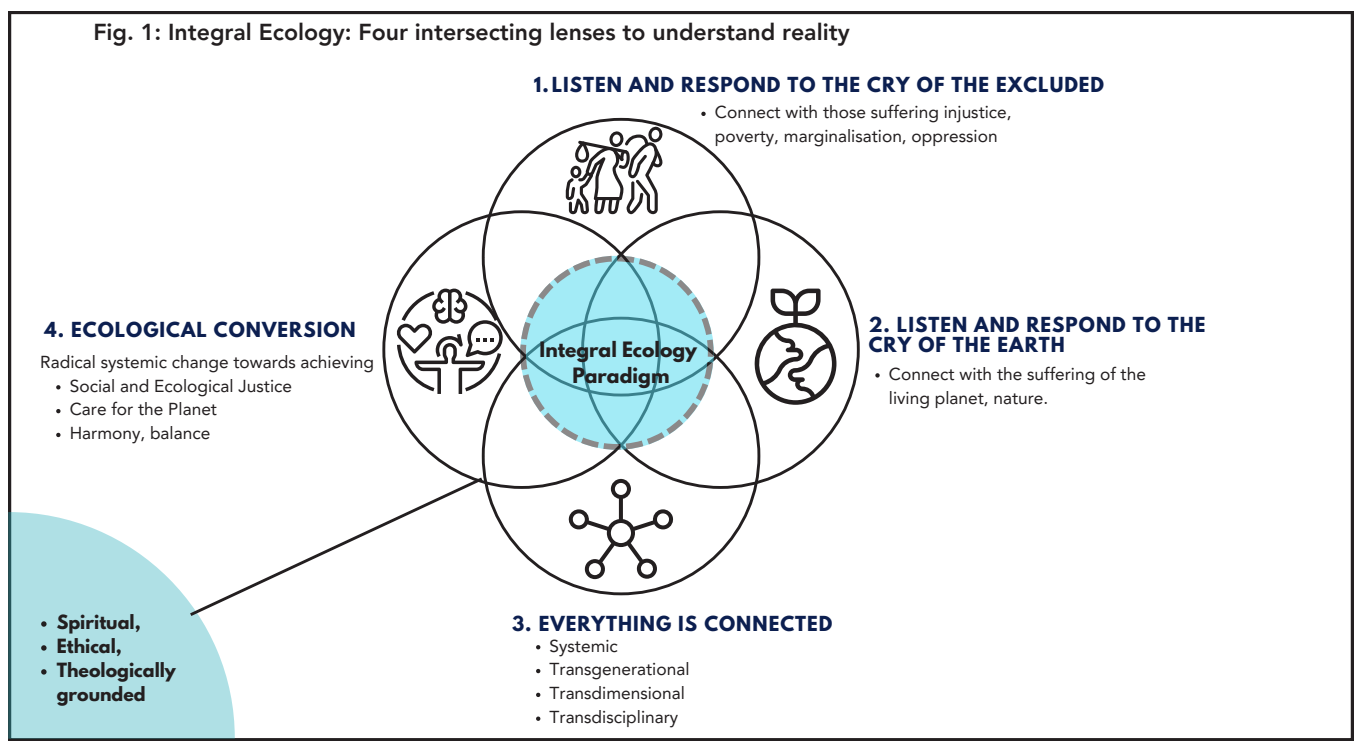
and the most vulnerable members of the community of creation;

hearing and responding to *the cry of the earth*, that is, the suffering of all living beings;

embracing a transdisciplinary perspective that sees *everything is connected*;

and an orientation towards *ecological conversion* as an overriding ethical norm (Fig. 1).³⁰

These principles serve as connective methodological pillars for an integral ecology research practice. The key to these pillars





is that their holistic orientation towards the common good shapes a type of transdisciplinarity that is purpose-driven and that moves researchers to discover the spiritual and moral grounds supporting the struggle against systemic injustices.

II.2 Cultivating epistemic justice

Of particular concern for integral ecology research is the role of epistemic justice. Although integral ecology invites a dialogue ‘that includes everybody’, some knowledge holders have a more central role to play than others. In the language of the Amazon Synod, they become ‘protagonists’.³¹ Centring marginalised voices, identities, and forms of knowledge is important both because epistemic

injustice reduces the quality of academic reflection, and because it is morally wrong. Furthermore, the power relations driving the ecological crisis rely on a particular brand of epistemic hegemony, so resistance and subversion require epistemic commitments that are resistant and subversive.

Societies structured by unjust power relations profoundly affect the exercise and production of knowledge. We can even say that ‘inequality is the enemy of knowledge’.³² And because unequal societies cause different types of people to have very different types of experiences, an accurate impression of these societies can very frequently only be obtained ‘from below’. Paulo Freire poignantly phrases this insight as a question: ‘Who are better prepared than

the oppressed to understand the terrible significance of an oppressive society?’³³ The reality of social conflict is often most obvious to those whose lives are limited by it.

At this point, we need to clarify two common pitfalls of this type of thinking. First, we should not romanticise the oppressed. Although they have access to particularly revelatory experiences, the epistemic benefit is not automatic. As Nancy Harstock argued in her influential proposal for a feminist standpoint, lucidity is ‘an achievement both of science (analysis) and of political struggle’.³⁴ It must be cultivated and worked on; it is not an esoteric body of knowledge automatically intuited by every oppressed person. Second, power relations cannot be reduced to a



simple binary between oppressors and oppressed. Instead, power affects how people with complex identities experience intersecting forms of oppression. Many oppressed standpoints exist, and they must all be brought into dialogue to build a 'kaleidoscopic consciousness' capable of illuminating the intersectional nature of social conflict.³⁵

In solidarity with the oppressed, privileging marginalised perspectives and knowledge, integral ecology can help overcome testimonial injustice, which occurs when 'prejudice causes a hearer to give a deflated level of credibility to a speaker's word'.³⁶ Rather than deflating credibility, integral ecology restores it to its proper size and shape. However, integral ecology also requires attention to hermeneutic injustice, which is characterised by 'a gap in collective interpretive resources [that] puts someone at an unfair disadvantage when it comes to making sense of their social experiences'.³⁷ Oppressed people may not have the critical words and concepts required to articulate their experiences of injustice, especially because privileged groups seek to monopolise the creation of these words and concepts. Rather than taking this for granted, integral ecology research can seek to co-produce appropriate hermeneutical resources for the task at hand.

III. Methodological Insights from Transdisciplinary Research

The integral ecology paradigm presents researchers with a profound challenge. The four lenses of integral ecology can only spark critical consciousness when they intersect. This means that the theological underpinnings and normative orientation of integral ecology, as well as its commitment to epistemic justice, indicate a need for new and innovative research methods. In what follows, we thus harvest methodological

1970.³⁸ According to this early definition, transdisciplinarity was understood to be a synthesis and integration of knowledge which could be seen as a 'higher stage succeeding interdisciplinary relationships'.³⁹ If disciplines converged around a project, the relationships among these disciplines would be organised or coordinated 'within a total system without any firm boundaries'. In this way, transdisciplinarity transcends traditional academic disciplines and other multidisciplinary approaches by generating a type of knowledge that is entirely



insights from the theory and practice of transdisciplinarity to support the work of ecological conversion.

III.1 Transdisciplinarity

The term 'transdisciplinarity' was coined by Swiss psychologist Jean Piaget in a seminar held at the University of Nice, France, in

new. It also entirely transcends academic disciplines themselves, drawing on non-traditional sources of knowledge such as Indigenous science, the accumulated wisdom of activists and organisers, and the like. It springs from 'all that is between, across, and beyond disciplines'.⁴⁰ Recall Pope Francis' insistence that 'it cannot



be emphasised enough how everything is interconnected'.⁴¹

More recent definitions argue that transdisciplinarity is not a new discipline or super-discipline. Rather, it offers a practice of seeing the world in more systemic and holistic ways.⁴² Crucially, this holism includes the subjective experience of the human researcher, arguing that transdisciplinarity could be understood as both a new discipline and a *new way of being*.⁴³ When seen as a way of being, transdisciplinarity becomes an all-encompassing fluidity of knowledge inseparable from personal life and extending far beyond the professional activities of the researcher.

There is no consensus definition of transdisciplinarity, but most approaches, including ours, converge on a few common principles. We define it as *co-produced research that transgresses, transcends, and*

bursts disciplinary bubbles, boundaries, and silos to generate, transform, and share new holistic and interconnected forms of knowledge that can respond more effectively to complex and systemic problems. Like integral ecology, transdisciplinarity is a journey and a process, not a destination or a cookbook recipe. In the face of highly complex problems, the principles of transdisciplinary research act as torches that can illuminate and guide, but not direct, researchers as they embark on the arduous task of producing knowledge for social and ecological transformation. In sum, transdisciplinarity is a fluid, open, flexible form of participatory knowledge production.

While not all integral ecology research efforts will fully embrace or be properly categorised as transdisciplinary, most will be deeply aware of the issues raised by transdisciplinary methods and

insights. Researchers may choose to apply specific principles and methods that serve their particular goal. Regardless, transdisciplinary research methods offer a wealth of resources for embodying the integral ecology paradigm. In the remainder of this section, we argue that the radically transformative solutions and conversion-oriented nature of integral ecology and its emphasis on epistemic justice are indispensable principles for a renewed research practice.

III.2 Seeking solutions for ecological conversion

One line of thought proposes that transdisciplinary research initiatives arise from specific problems that are so complex that no ordinary set of disciplinary tools can solve them.⁴⁴ We extend this principle in the context of integral ecology to include specific challenges rooted in a particular time and place alongside the broader challenge of ecological conversion presented by Pope Francis in *Laudato Si'*.⁴⁵ While an awareness of the limits of disciplinary inquiry might awaken a desire to grasp reality in a more comprehensive way, it is the concrete and seemingly intractable challenge of social and ecological transformation that forces the researcher's hand. Research should thus be solution-oriented, purposeful, and inspired by the normative requirements of the integral ecology paradigm, such as the common good and intergenerational justice. This



“Integral ecology embraces transdisciplinarity: co-produced research that transgresses, transcends, and bursts disciplinary bubbles, boundaries, and silos to generate, transform, and share new holistic and interconnected forms of knowledge to face complex systemic problems.”

basic orientation determines both the content of a research project and the methods used to carry it out.

An example of this solution-oriented approach can be found in the United Kingdom-funded One Ocean Hub, which was established to transform ocean governance for sustainability.⁴⁶ The researchers involved were thus required to have strong disciplinary groundings in the physical, natural, and/or social marine sciences as well as an ability to converse and coordinate across disciplines. Workshops, surveys, and collaborative dialogue tools were used to stimulate conversation, and local stakeholders and rights holders were included as research partners.⁴⁷ Arts-based methods were used to incorporate Indigenous and local knowledge on the topic of ocean management.⁴⁸ Throughout, the guiding goal of transforming ocean governance determined the people involved, the methods used, and the questions asked.

III.3 Integrating co-design and solidarity in research

Integral ecology's

commitment to epistemic justice implies that research will be based on the concerns, perspectives, and epistemic standpoints of oppressed individuals and communities. Here, we can take guidance from the field of liberation theology, in which praxis is considered an indispensable element of academic reflection. For liberation theologians, practical solidarity is crucial because it moulds the researcher as a subject and helps to identify research questions and problems to be solved.⁴⁹ In the language of Ignacio Ellacuría, solidarity with the poor determines both from where or what standpoint research is done (*'desde dónde'*), and what

source(s) of information is/are deemed reliable (*'la fuente'*).⁵⁰ Research is not done *about* a problem or *to* a problem. It is done *with* those most affected by the problem.

While a commitment to praxis offers one way to cultivate scholarly solidarity, principles of epistemic justice can also be formally incorporated into research through a process of co-design. In the field of sustainability research, co-design takes place in the 'first phase of the knowledge co-production process, in which researchers and non-academic partners jointly develop a research project and define



research questions that meet their collective interests and needs.⁵¹ It can also lead to co-production or participatory research, but whether it does so is subordinate to the primary goal of allowing a particular community to design a research project that will address their needs, use their preferred methods, value their knowledge, and have legitimacy within and beyond their local context.⁵²

IV. Reflections on Research in Practice

Transforming the practice of research to embody the integral ecology paradigm is no easy task. It faces many of the same challenges of transdisciplinary research in general, including a lack of funding, a position of homelessness within the formal structures of academia, and the immense time and effort required to embark on collaborative projects with knowledge holders across disciplines, geographies, and cultures.⁵³ However, these barriers are not universal or insurmountable. Not all integral ecology research projects will fully embrace transdisciplinary methods, and these barriers will likely be less relevant where modified or hybridised approaches are implemented. Finally, while some integral ecology researchers will need to take on the tasks of animating and convening collaborative projects, there is also a need for disciplinary experts to participate

in such projects and develop the competencies required to do so without abandoning their native disciplines.⁵⁴ We recently undertook a collaborative, transdisciplinary research initiative as part of an effort to put integral ecology into practice and we share some reflections on that experience.

in Eastern and Southern Africa to hold listening sessions with community members and NGO practitioners. In our dialogues, we utilised the intersecting lenses of integral ecology to better see the intersecting nature of climate vulnerabilities. Visiting diverse communities affected by issues such as drought,



IV.1 Building knowledge and power with communities in Africa

Our project was a joint initiative of the Jesuit Justice and Ecology Network Africa (JENA) and the Laudato Si' Research Institute (LSRI). It sought to document the physical, ecological, and social vulnerabilities of communities in Africa to the adverse effects of climate change and influence global policy to better respond to those vulnerabilities. From September 2021–March 2022 we conducted a series of site visits to frontline communities

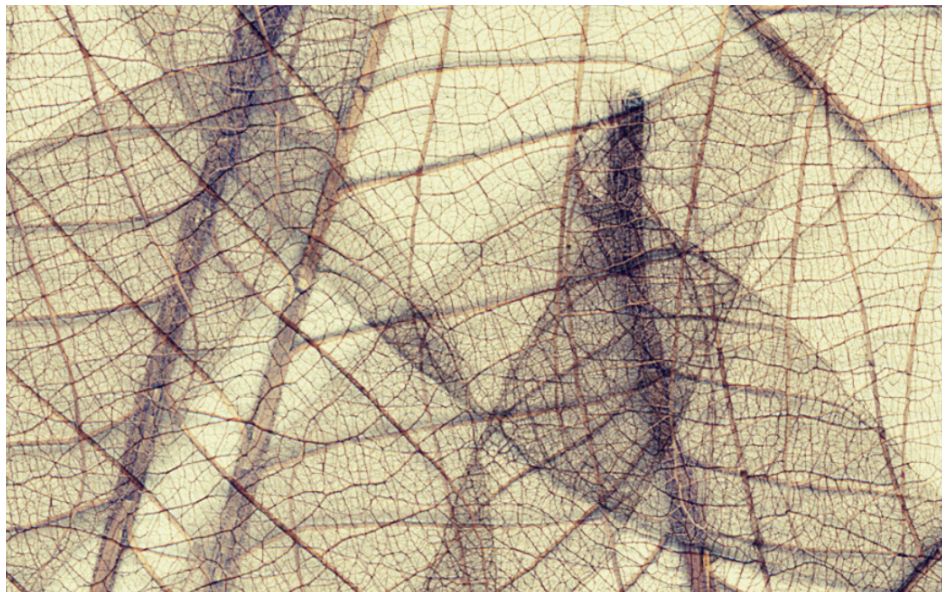
cyclones, overfishing, and armed conflict allowed us to build a multidimensional picture of the ecological crisis as seen from below.⁵⁵

In stage two of our project, we brought community representatives together via Zoom to do their own work of synthesis, sharing common needs and proposed solutions. We met for three days in May 2022, facilitating conversations beyond disciplinary, national, cultural, and linguistic barriers. We structured the dialogue around three questions: (1) what are your challenges?;



(2) what do you have in place to address these challenges?; and (3) what do you need? We found that participants as diverse as a sand miner in Malawi, a social worker and women's rights advocate in South Sudan, and a small-scale farmer in the Democratic Republic of the Congo shared common concerns about the degradation of their natural ecosystems and the ways in which dominant policies and practices do not reflect their values and needs.⁵⁶ Frequently, the production of, and access to, sufficient food was named as a key challenge caused by policies designed to favour a small number of political and economic elites.⁵⁷ We then conducted a literature review and follow-up interviews with specific dialogue participants to clarify and deepen key insights and questions.⁵⁸

Our site visits, dialogues, interviews, and literature review identified a wealth of possibilities for applied research and advocacy, and we selected a few opportunities in the third stage of our project based on the overlap between community priorities and our own capacities and areas of expertise. Through conventional academic research, we documented human rights abuses and identified strategies for balancing livelihoods, nutrition, and ecological function in Kenyan coastal communities dependent on small-scale coral reef fisheries.⁵⁹ We also built and implemented



an advocacy strategy to influence the UN climate change process (UNFCCC) based on community priorities and collaborative research. In conjunction with a coalition of mostly faith-based allies from the Global North and South, we contributed to the outcomes of the Koronivia Joint Work on Agriculture at COP27 in Sharm el-Sheikh, Egypt, and provided formal input into the beginning of the Sharm El-Sheikh Joint Work on Implementation of Climate Action on Agriculture and Food Security at SB58 in Bonn, Germany.⁶⁰ Finally, we selected two communities from the original participants in the site visits and dialogue for follow-up dialogues focused on the intersection between climate change adaptation and local food systems. We used these in-person dialogues to confirm and refine our second round of advocacy and research, which is still ongoing at the time of writing, and to elicit

additional questions that did not arise in earlier stages of the project.

IV.2 Evaluating research pathways to 'success' from an integral ecology perspective

As we reflect on our nearly two years of experience over the course of the project, we came to realise that we are not interested in the question of whether we 'succeeded', at least according to usual metrics of success. This would be an unrealistic and disingenuous goal for any project striving to achieve ecological conversion, that is, a radical systemic change towards social and ecological justice. The task is too big, the gaps too wide, and the problem too intractable to have a definitive finish line.

Instead, we propose that fidelity to the principles of integral ecology be the operative criterion for

projects like ours. Over the course of several months, we have built relationships across boundaries of social conflict and worked to produce knowledge that would



lead to ecological conversion. We have extensively utilised the four intersecting lenses of integral ecology as ways to illuminate our research discernment and cultivate a commitment to epistemic justice. We drew on the methods of transdisciplinary research. But there is no feeling of conclusion or closure. Instead, we feel that we have begun a lifelong process, a journey towards healing and reconciliation that implicates our own personal histories in the social and ecological history of our planet.

Our research efforts have also highlighted specific areas for growth. Every integral ecology initiative should apply methodologies that: (a) listen deeply and respond to the cry of the poor, (b) listen deeply and respond to the cry of the Earth,

(c) reflect on how everything is connected, and (d) seek a radical systemic change or 'ecological conversion'. How did we fare in each of these principles? How

did these principles shape our methodological pathways and decisions made? These are some of our reflections:

- **Overcoming extractivist research:**

We were deeply aware that the dominant trend of *extractivist* research needed to be overcome. As a result, we chose an open-ended listening dialogical mode, keeping an open mind that the dialogues could take us beyond our comfort zones in terms of both personal relationships and research questions. How deep were we prepared to go? Communities coming from realities of exclusion and oppression sometimes asked more of us than we could comfortably provide. From the instant we contacted the communities, we had to continuously ask ourselves if we

were really helping them or just benefiting from them. Caring deeply about the quality of trust and communication bonds we were forming beyond the project was crucial.

- **Ecological conversion requires a theory of change even for researchers:**

Seeking radical systemic change required us to review our priorities of who to relate with and how to provoke changes. Connecting community priorities with conventional fora such as academic journals and the UNFCCC are helpful steps and certainly improve these fora. But is doing so really transformative? How much systemic change should we hope for and to what extent and how should we work with existing systems, as infected by the technocratic paradigm as they are?

- **Whose perspective matters and learning to embrace co-design:**

To make research relevant we had a preconceived idea of connecting communities with UNFCCC and academic research, but often this is not something communities ask for or believe to be important. Perhaps our project would have looked different had it included a formal co-design phase.

- **Prioritising spiritual, ethical, and theological depth is a methodological challenge:**



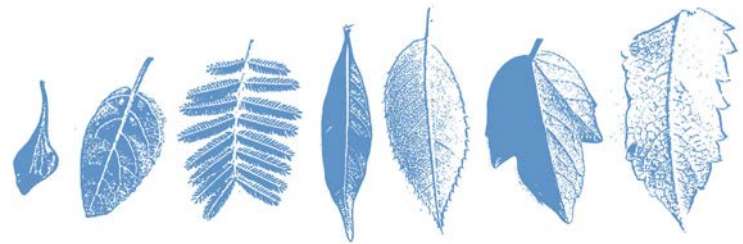
In hindsight, we realised that our discussions often lacked spiritual, ethical, and theological depth. We talked a lot about concrete challenges and solutions, but it was difficult to spark discussion around questions like ‘What is God doing here?’ and ‘What do these challenges really mean?’ When we raised these points, our interlocutors often seemed surprised and unsure of how to respond. Diverse cultural and religious expectations may have shaped what comments arose organically and what comments were designed to meet our expectations. There is a need here for better techniques of collaboration between theologians and communities to better articulate the deeper dimensions of social and ecological experience.

IV.3 Finding research pathways to ecological conversion

In this briefing note, we have interrogated the ways in which the integral ecology paradigm can help guide researchers grappling to transform the social and ecological structures of injustice that stand at the root of today’s planetary crises. In so doing, we argued that integral ecology’s four intersecting lenses provide a prismatic guiding set of principles. We have tried to show how a unique type of transdisciplinarity is nested within the integral ecology paradigm. It is a means to a higher end, that of a normatively, ethically,

and theologically-inspired social and ecological transformation. In this framework, transdisciplinary research is put to the service of the ethical and spiritual values that seek to respond to all suffering within the community of creation by addressing the causal roots of social and ecological injustice.

Practising integral ecology through research, or other means, is a creative, reflexive, lifelong



journey. Although the destination remains crucial, we must embrace this paradigm of transformation for the long haul and be merciful with ourselves and others when we inevitably fail to transform the world on our first attempt.

From an integral ecology prism, we must emphasize and wholeheartedly embrace ethical, spiritual, moral, and values-based perspectives in the methodologies we use to ultimately transform the researcher, the nature of research, the point of research and its impacts. For instance, an Indigenous researcher in the Amazon can embrace notions of Pachamama or Mother Earth to inform its integral ecology methods and principles aligned with Indigenous cosmologies

on care for creation and the interconnected sacredness of all of life. Likewise, researchers inspired by Christian values may find parallels for instance in the idea of creation found in St. Paul that ‘all creation is groaning in labour pains even until now’ (Rom. 8:22). Researchers can become co-creators, bringing new life into the world through a process that includes the depths

of love, intimacy, and pain. But in the broader sense of ecological conversion, we are but midwives, participating in a process already underway in which the joys and pains rightfully belong to beings other than ourselves. To undertake this journey, we seek to embrace methodologies that can awaken a critical and creative consciousness about the reality of the injustice we are facing. This is where integral-ecology-inspired research can play a crucial liberationist role, journeying alongside the most vulnerable members of the community of creation and, together, planting the seeds of global ecological conversion.



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