

Paradigms, Meanings and Purpose of Human Ecology in the Philippines

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Abstract

Despite decades of Human Ecology research in the Philippines, theoretical understanding has been limited due to its primarily applied nature. In response, the paper determined major conceptual works in Human Ecology, discussed its historical development, and examined its meaning and purpose in the local context. Using a conceptual systematic review (CSR), 177 documents were identified. After the inclusion and exclusion criteria were applied, a total of 41 documents were examined in-depth using reflexive thematic analysis (RTA). In this study, we proposed paradigmatic logics as a novel concept to understand Human Ecology's contoured history. Results revealed that Filipino and foreign scholars have made efforts to conceptualize the discipline. Different interpretations of its meaning emerged—either as a discipline, field of study, approach or profession. We argued that these are not necessarily contradictory but dependent on how it is being used. As we synthesized its various meanings, this study reaffirmed and substantially expounded the locally grounded definition of Human Ecology in the Philippines. Our work also unraveled five major ways in which Human Ecology is utilized in the country. Finally, we proposed ways to strengthen its conceptual understanding through empirical and comparative analyses. By weaving together major works, this study can be a useful reference for Human Ecology education, research and public service.

I. INTRODUCTION

1.1. *Dynamic Discourses on Human Ecology: from Global to Local*

Human Ecology's broad scope covering the humanistic, social, physical and natural sciences is discomfiting in a turf-oriented academy where it remains a fringe concept (Loening, 2021) and a subversive science (Hardin, 1985; Steiner & Serbser, 2025). Due to its breadth and non-traditional nature, it is often seen as an improper science—resulting in lower funding and lack of scientific recognition (Dyball, 2012; Dyball & Newell, 2014). Many degree programs such as those at Vrije Universiteit Brussels (VUB) in Belgium and Universidade de Évora in Portugal have closed. Those that remained are relatively smaller compared to other disciplines (Shim, 2014).

These discussions are relevant in the Philippines where conceptual discourses are lacking (Amparo et al., 2012; Amparo et al., 2019). Our aim in this paper is to unpack the broad landscape of Human Ecology literature using a conceptual systematic review (CSR)—moving beyond unidimensional, fragmented and visceral interpretations of its history, meaning and purpose. Conceptual works in Human Ecology are more needed now than ever. The urgency of global crises makes integrative sciences like ours, in Paul Ehrlich's words, the most important disciplines in the world today (Dyball & Newell, 2014). Echoing Maurice Strong's call, perhaps *"the time has come for Human Ecology to become a major scientific discipline in its own right"* (Marten, 2001: xii). To do this, we need to ask and answer bold questions. Where is Human Ecology in a mainstream university? What unique value proposition do we offer in understanding and solving complex problems?

Understanding Human Ecology requires discussions on its development at a global scale. Its history, however, is not a straightforward path (Borden, 2024). Fragments of the discipline began in Europe in the works of Linnaeus, Humboldt, Marsh and Haeckel (Bilberg, 1749; Marsh, 1867; Bowen, 1985; Dyball, 2017). Ellen Swallow Richards was considered as the mother of Human Ecology (Dyball & Carlsson, 2017). She unfortunately faced many barriers in science as a woman, which led her to Home Economics (Richards, 1907; Dyball & Carlsson, 2017). It would take seven decades for Home Economics to amplify the ecological approach with the work of Vaines (1974). Various disciplines created their own versions of Human Ecology—appearing in Sociology (Park & Burgess, 1921), Geography (Barrows, 1923), Political Science (Ophuls, 1973) and Philosophy (Christensen, 2014; Visvader, 2017).

Amidst this diversity, Pires and Bruckmeier (2024: 4) observed that Human Ecology has developed into a pluralistic interdisciplinary science without having a unified and theoretically integrated approach. What Human Ecology means is still subject to much debate (Lawrence, 2003). Attempts to define Human Ecology have been made. Ellen Swallow Richards considered it as the study of the surroundings of humans and its effects on their lives (Richards, 1907; Dyball & Carlsson, 2017; Pires & Bruckmeier, 2024). Dyball (2010: 13; 2012: 184) referred to it as an interdisciplinary study of the interrelationship between humans, their cultures and the environment. Lawrence (2001 in Lawrence, 2003: 31) called it the study of the dynamic interrelationships between human populations and the physical, biotic, cultural and social characteristics of their environment and the biosphere. Rasmassar and Cote (2024) said that it is a discipline that seeks to be interdisciplinary and transdisciplinary when examining human-nature relations.

In the Philippines, the report of Saguiguit et al (1974) led to the establishment of the College of Human Ecology (CHE) at the University of the Philippines Los Baños (UPLB). Anderson (1981) traced all the major literature on Human Ecology in the country. Rambo and Sajise's (1984) book applied the Human Ecological framework in environmental and social science analyses of tropical ecosystems. Eusebio's (1984) work was one of the first Filipino articulations of the emerging discipline. Fellizar (1990) explained how Human Ecology is practiced in the Philippines, 16 years after UPLB CHE was founded. Sandalo (2012) analyzed the skills and employment patterns of B.S. Human Ecology graduates. Amparo et al. (2019) examined Human Ecology education and its more applied orientation. The College of Human Ecology Review (2022) discussed whether Human Ecology is a discipline or a field of study. Most recently, Dangcalan et al. (2025) mentioned the Philippine Human Ecology Consortium (PHEC) as a coalition of universities and a professional organization promoting Human Ecology in the country.

Various gaps in literature exist. Asian articulation of Human Ecology is lacking (Amparo et al., 2019). Studies revealed the need to conceptualize its ontological and epistemological nature (Amparo et al., 2012; Amparo et al., 2019). Currently, no systematic reviews are focusing on the conceptual dimensions of Human Ecology. The last and the only one that was written was from more than four decades ago (Anderson, 1981). This kind of study is necessary as human-environment research is often plagued by confirmation bias (Walters & Vayda, 2009: 538). Moreover, Filipino definitions of Human Ecology are only provided in passing (Saguiguit et al., 1974; Eusebio, 1984; Fellizar, 1990) or the references made could be attributed to foreign authors (Amparo et al., 2019; Dangcalan et al., 2020; Dapito et al., 2023; Dangcalan et al., 2025). Varied references to Human Ecology as a discipline (Saguiguit et al., 1974; Eusebio, 1984), field of study (Rambo & Sajise, 1984; CHE Review, 2022), approach (Dangcalan et al., 2025) or profession (Sandalo, 2012) are confusing to our external public.

In response to these gaps, the study has three main contributions in the literature. First, we proposed paradigmatic logics as a concept that explains the contoured history of Human Ecology. Second, it reviewed its emergent meanings and purpose. We then reaffirmed and substantially expounded the locally grounded definition of Human Ecology in the Philippines. Third, we outlined areas for future Human Ecology research in the Philippines.

1.2. Theoretical Framing: Paradigmatic Logics in the Development of Knowledge

Framing informs our understanding of the world. It lies at the heart of the Human Ecological knowledge system, which examines the underlying assumptions and dominant discourse shaping complex sustainability problems (Keen et al., 2005; Borden, 2014; Boyden, 2016; Blessington, 2017; Davila, 2018; Davila, 2020; Amparo, 2021). In the same vein, an organizing framework is needed to critically analyze the development of Human Ecology as a body of knowledge. We locate our work in the meeting of traditions within the Philosophy of Science, Sociology of Organizations, Political Science, Economic History and Human Ecology. Preference was given to seminal works as they provide meta-perspectives to interrogate the nature of knowledge itself. We coined a novel concept called *paradigmatic logics* as a heuristic framework that explains how bodies of knowledge are constructed, maintained and contested within the academy and in the broader society. Thomas Kuhn (1962) defined paradigms as shared theoretical beliefs, values, instruments, techniques and other meanings.

In the academy, these take shape in the form of disciplines. Krishnan's (2009) highly cited work discussed the origins of disciplines from the Latin word *discipulus* (pupil) and *disciplina* (teaching). Disciplines reproduce themselves through educational preparation or training, set boundaries through common language and concepts, and create tribes consisting of tightly knit groups with high degree of agreement on its methods and contents. Social science disciplines often have more synthetic boundaries. The physical and natural sciences, on the other hand, have clearer epistemic borders as defined by germane concepts, methods and tools to their discipline (Krishnan, 2009).

Rather than applying their perspective on organizational structures, we used Tolbert and Zucker's (1996) institutionalization approach to demonstrate how disciplines persist through time. Their work reconciles two traditions in institutional theory. Rational choice institutionalism (RCI) considers actors as rational and benefit maximizing in creating new social arrangements. Historical institutionalism (HI), on the other hand, states that individuals and organizations are socially situated. DiMaggio and Powell's (1983) landmark study in the Sociology of Organizations guides us in understanding how new structures emerge because of external pressures (coercive isomorphism), bandwagon effect (mimetic isomorphism) or rational decisions (normative isomorphism). From Economics, we utilized the classic concept of path dependence (Liebowitz & Margolis, 1995) to describe how epistemic constructs create status quo that are resistant and notoriously difficult to change. They often sanction deviance from accepted practice (Krishnan, 2009). From Sociology and Political Science, we use critical junctures to explain how knowledge systems are altered, and alternative equilibria are generated (Capoccia & Kelemen, 2007).

In discussing the properties of paradigmatic logics, we highlight its main components and phases (see Figure 1). Its main components are composed of (1) axis, (2) vector, and (3) signpost. The *x axis* demonstrates how knowledge develops at specific points in time. Bodies of knowledge are never static—they either consolidate or loosen as represented by a *vector* or a line. Full lines represent direct trajectories while dotted lines imply indirect or uncertain influences. We modified Krishnan's (2009: 9) categories of a discipline to describe the consolidation process or *y axis*. These include having a clear object of study, an accumulated body of knowledge through its own theories and methods, and institutional manifestations through programs, academic units or networks. *Signposts* or green dots represent watershed moments that define boundaries in each stage of paradigmatic development.

Before any new knowledge begins, a status quo characterized by *path dependence* precedes its development which could be a dominant discipline, perspective or approach. New knowledge does not form out of nothing (*ex nihilo*) but builds on what already exists (*ex materia*) which we call as *paradigmatic inertia*. A historical event which could either be normative, mimetic or coercive (DiMaggio & Powell, 1983) may trigger a *paradigmatic shock* causing shifts in perspectives, approach, methods or may give birth to a new interdisciplinary project which is the beginning of a new discipline (Krishnan, 2009). Knowledge production in the academy never exists in a vacuum but is influenced by broader social and environmental dynamics or *paradigmatic confluence*. More established disciplines which command better recognition, deeper epistemic consolidation and larger resource allocation in the academy can thwart new knowledge leading to *paradigmatic decline*.

Should pioneers succeed in building new knowledge, different kinds of scientists are needed (Krishnan, 2009). These are synthesizers and consolidators whose work clarify in greater extent the discipline's methods, tools and concepts. We separate *paradigmatic sedimentation* into early and late stages where the status quo is formed to create new path dependent behavior. Bodies of knowledge here become academic programs, departments or standalone colleges producing generations of graduates, engaging in numerous research and forming professional societies. As disciplines consolidate, we borrow in Medicine the term pathology to coin *paradigmatic pathologies*. These denote challenges such as competition with other disciplines, lack of funding or the absence of a succession plan for thought leaders.

From this point, four possible scenarios may exist. First is *paradigmatic complacency* where academic disciplines remain in sub-par performance for years or decades—characterized by a small faculty composition, low student enrollment and insufficient research funding. The discipline will eventually suffer from late-stage decline. Second, when disciplines fail to overcome paradigmatic pathologies, it could lead to much earlier decline as manifested in program closure.

However, disciplines may use pathologies as springboards to further consolidate to enter a period called *paradigmatic self-preservation* which may lead to disciplinary flourishing. These may include developing novel concepts and tools, revitalizing research and funding schemes or the formation of consortia and professional networks promoting the discipline. The fourth, and a more radical route, is *paradigmatic transformation* which includes a historical change of seismic proportions that could substantially alter the university structure or knowledge system itself triggering *post-structural paradigms*. For example, Bowen's (1985) ecologies of knowledge is a more fluid epistemic construct that may potentially replace turf-oriented disciplines in informing how universities are organized.

II. MATERIALS AND METHODS

In unraveling a tangled term, we used the conceptual systematic review (CSR) proposed by Schreiber and Cramer (2024). CSR is systematic and empirically grounded, which can be utilized as a preliminary step before conducting a full review based on research findings. It is used in interdisciplinary discourse by offering insights on how the term is used in a broader sense (Schreiber & Cramer, 2024: 1460-61). It has been employed to study systematic curiosity (Le Cunff, 2024), coaching interventions in cancer care (Gérain et al., 2025), teacher well-being (Kurrle & Warwas, 2025) and gender contract (Sihto & Zechner, 2025). For this study, six steps were used as adapted from Schreiber and Cramer (2022) and Omland et al. (2025) (see Figure 2). This systematic review has a registration number CRD420251271510 in PROSPERO—an international registry that aims to reduce reporting bias and duplication.

2.1. Identification and Analytical Classification of Heuristics

UPLB was chosen as it pioneered Human Ecology in the Philippines. It is the only university in the country that offers a B.S. Human Ecology program, a well-developed conceptual framework and is mandated by law—through Republic Act 9500 as a National University—to provide intellectual leadership in various disciplines. In the same vein, Human Ecology was *identified as a tangled term* due to the lack of consensus on what it means (Lawrence, 2003; Amparo et al., 2012; Amparo et al., 2019). Corollary concepts were also defined. We refer to *meaning* as internal constructs of what a thing is and how it is externally perceived (Putnam, 1975; Ben-Menahem, 2005). The study operationalized it as the *definition of Human Ecology and the dominant intersecting discourse that shape how it is conceived*. Meanwhile, *Purpose* is the use of a body of knowledge in training individuals and maintaining/reproducing certain behaviors and ways of thinking (Krishnan, 2009). In Human Ecology's context, this *pertains to its reproducibility through teaching, research and public service*.

2.2. Screening

The literature search used two syntaxes: (S1) Meaning+Human Ecology+Philippines and (S2) Purpose+Human Ecology+Philippines. Google Scholar was chosen for expansive literature search and cost efficiency (Haddaway et al., 2015) as little conceptual research exists on Human Ecology in the country (Amparo et al., 2019). The first 10 pages per syntax generated a preliminary database containing 155 documents. A targeted search followed in Science Direct, Philippine E-Journals and UPLB KOHA e-Library which yielded 22 documents.

There are four inclusion criteria. First, documents should be in Filipino or English. Second, we searched beyond peer reviewed materials (books, journals and book chapters) to include technical reports, policy briefs, conference proceedings and theses. Third, a conceptual discussion of Human Ecology should exist. Fourth, materials must be authored by Filipinos, foreigners working in the Philippine context or published in Philippine-based journals. For exclusion criteria, we first removed grey literature. Second, Political and Social Ecology publications were excluded as many studies in these fields were conducted in the Philippines. The inclusion of these articles may alter the results of the CSR as these fields of study have their own epistemic and methodological traditions. In excluding them, we were able to filter conceptual discussions and focused solely on Human Ecology. Third, materials with no full versions and, fourth, those not written in Filipino or English were excluded. Finally, we removed studies that have no conceptual discussions on Human Ecology. After the inclusion and exclusion criteria were applied, 41 documents were assessed and coded (see References).

2.3. Analysis

Like in Omland et al. (2025: 1024), we used reflexive thematic analysis (RTA) as an iterative process of data immersion, reading, reflecting and questioning. Braun et al. (2023: 2-3) describes RTA as an artfully interpretive way of using thematic analysis moving beyond descriptions and summaries. It interrogates how meanings relate to wider social contexts, why they matter and what do they imply. In an earlier work, Braun and Clarke (2021) highlighted the need for methodological rigor through clear theoretical framing, prudent analysis of emergent themes, and the explicit declaration of the researcher's positionality. Trainor and Bundon (2021) support the idea that clear articulation of underlying theoretical foundations, assumptions and parameters to guide the analysis are necessary. Campbell (2013) says that capturing the “*keyness*” of a theme—what is important considering the research objectives and applying such criteria consistently across the dataset—is critical in undertaking a rigorous RTA.

Given these, we adopted the RTA using paradigmatic logics as our lens. A careful reading of selected texts was done with particular attention given to the “*meaning*” and “*purpose*” of Human Ecology. Guided by the research objectives and theoretical framing, these were encoded and thematized in a Google Sheet. Eventually, the themes were generated into narratives. While the initial plan was to focus on the meaning and purpose of Human Ecology, we had enough data to discuss its historical development. Thus, accounting for its inclusion in the results and discussion.

III. RESULTS AND DISCUSSION

The main findings of this study are divided into four topics. First, we characterized major conceptual Human Ecology publications in the Philippines. Second, we examined the major paradigms and historical factors affecting its development. Third, we presented its various meanings and reaffirmed a locally grounded definition of Human Ecology. Fourth, we discussed the purpose of Human Ecology.

3.1. Characterization of Human Ecology Publications

The earliest article was from 1948 (Scaff, 1948) and the latest was released in 2025 (Dangcalan et al., 2025) (see Figure 3). A significant number of works were published in the 2020s (29.26%) and the 1970s (24.40%). Contributions by local (56.10%) and foreign (43.90%) authors were almost equal. About half of the publications are from the Philippines (48.78%), especially the newer ones while a quarter (24.39%) are from the United States—most especially during the 1980s when American scholars were active in the Southeast Asian Universities Agroecosystems Network (SUAN)—a loose consortium of academic institutions that used a Human Ecological framework in their research on tropical ecosystems (Rambo & Sajise, 1984). Active engagements with Australia

(7.32%) emerged much later in the 2010s and 2020s thanks to networking activities done by Filipino Human Ecologists and their collaborators—notably Dr. Robert Adam Dyball—at the Fenner School of Environment and Society at the Australian National University.

More than half of the documents are journal articles (51.22%), conference proceedings (9.76%), books (4.87%) and a book review (2.44%). Notably, around a quarter of the documents with substantial theoretical discussions are not necessarily peer reviewed materials such as reports and conceptual papers (21.95%) and graduate theses (9.76%). This supports our methodological decision to expand our search criteria beyond scientific publications. Interestingly, many of these are written by Human Ecologists (60.97%) most especially the recent ones from 2010s and 2020s. Older literature showed contributions by Anthropologists (17.07%), interdisciplinary researchers (9.76%), Biologists (7.32%) and Sociologists (4.88%). We liberally used the term Human Ecologist for those who are part of the College of Human Ecology and utilizing a Human Ecological approach in their writing.

3.2. Development of Human Ecology in the Philippines

Human Ecology in the Philippines is an intergenerational project and a product of global collaboration. It follows a broader global pattern—from monodisciplinary to an interdisciplinary orientation (Dyball, Borden & Serbser, 2009; CHE Review, 2022). *Pinagmulan* or Philippine Human Ecology's paradigmatic inertia is predominantly concerned with rural development (Saguiguit et al., 1974; Eusebio, 1984) whereas its American counterparts are urban-centric (Richards, 1907; Park & Burgess, 1921; Coller, 1955). Anderson (1981) traced modern Human Ecology's antecedents to Dickenson in 1928 and later H.H. Bartlett's work in the 1930s at the University of the Philippines (UP) who studied the effects of fire in shifting cultivations on floral and faunal change. Traces of Human Ecology existed in earlier initiatives at UP Diliman and Philippine Women's University. Anderson (1981: 288) ended his work saying, "*Human Ecology in its various guises is alive and well in the Philippines*". Human Ecology then was under other disciplines or multidisciplinary at best, focused on a common topic but lacking integration.

Interdisciplinary Human Ecology emerged with UPLB CHE's establishment where it was presented as a new integrating orientation and philosophy to strengthen the university's impact to national development (Saguiguit et al., 1974:17; Fellizar, 1990: 31). This triggered a paradigmatic shock or *pagbabago* with the conversion of the Department of Home Technology into the Institute of Human Ecology (IHE) (later becoming a college)—where once disparate Human Ecological approaches finally found a synergizing academic space (Saguiguit et al., 1974; Fellizar, 1990).

Paradigmatic confluences or *pag-uugnay* meant that Human Ecology's development were tangential to global and national realities. Immediately before its founding, Rachel Carson and Paul Ehrlich propelled environmental consciousness into global public discourse (Mendoza, Dangcalan & Amparo, 2021). The 1972 Stockholm Conference (Fellizar 1990; Amparo et al., 2019; CHE Review, 2022; Agaton et al., 2024), the creation of the Task Force on Human Settlements in 1973 (Anderson, 1981; Fellizar, 1990; Mendoza, Dangcalan & Amparo, 2019; CHE Review 2022), the evolution of Home Economics (Amparo, et al., 2019; Agaton et al., 2024) and the lack of program dealing on human beings' interaction with their total environment (Saguiguit et al., 1974; Fellizar, 1990; CHE Review, 2022) influenced its emergence in the country. These intersected with the rapid transformation of Philippine environments due to development, increased scrutiny of the adverse impacts of high investment projects, and the pervasiveness of international development programs focused on human-environment concerns (Anderson, 1981). In parallel was the rise of interdisciplinary and transdisciplinary research. People were drawn to Human Ecology, because it does not require abandoning one's specialization but rather using it to contribute meaningfully to transdisciplinary research (Rambo & Sajise, 1984: 23). Its development also dovetailed broader efforts such as Southeast Asian Studies (Rambo, 1981), research on tropical agricultural systems (Rambo & Sajise, 1984), transformations in Ecology (Walters & Vayda, 2009), Immunology (McDade, 2003), and food systems research (Davila, 2018; 2020).

Human Ecology continued to anchor on broader trends as it entered paradigmatic sedimentation or *pagpapatuloy*. Environmentalism persisted in the Philippines where worsening degradation made any traditional conservation strategies insufficient to restore ecosystems (Walters, 1997). Human Ecology's integrative, applied and development-oriented nature (Sandalo, 2012) aligned to calls for UPLB academics to go down from their ivory towers by applying their expertise on actual problems in the countryside (Amparo et al., 2012: 2). In succeeding decades, Human Ecologists had to negotiate their turf within the university. The creation of the School of Environmental Science and Management (SESAM) meant potential overlaps. Sajise (2010) suggested that Human Ecology's strength is on community-level social-ecological interactions while environmental science is on landscape-level dynamics. Agentic iteration was needed in demonstrating Human Ecology's value. In the 1980s, the Ford Foundation-funded UPLB Upland Hydroecology Program (UHP) showcased the benefits of using a Human Ecological approach (Anderson, 1981; Sajise, 1982). Its program leader, Dr. Percy Sajise (2010: 9) shared that UHP was the scientific awakening in UPLB of the beauty of interdisciplinary work by providing better understanding of environmental problems.

Foreign scholars contributed to this rich tapestry. Andrew Vayda (1983) working with Brad Walters (Walters & Vayda, 2009) developed Event Ecology and Progressive Contextualization as contributions to Human Ecological concepts and methods. The Southeast Asian Universities Agro-ecosystems Network or SUAN produced several important publications (Rambo, 1981; Rambo & Sajise, 1984; Hutterer & Rambo, 1985). Recent collaborations with the Fenner School of Environment and Society, Australian National University (FSSES-ANU) amplified the use of social-ecological systems (SES) analysis. Recent works have applied SES analysis in Human Ecology education for sustainability (Blessington, 2018; Amparo et al., 2019), food systems research (Davila, 2018, 2020), small-scale fisheries (Amparo, 2021), disaster risk management (Dangcalan et al., 2020; Serquiña et al., 2023), science and technology policy (Dapito et al., 2023), and food and nutrition security (Dangcalan et al., 2025).

Pagkakakilanlan or late-stage paradigmatic sedimentation were deepened as local scholars drew disciplinary boundaries. Eusebio's (1984) work, "Human Ecology as an Emerging Discipline", mapped its four thematic concerns: food and nutrition systems, families and environment, community and the bigger society, and the larger ecosystem (Eusebio, 1987). Team teaching was employed to strengthen interdisciplinary discourse (Fellizar, 1990; Amparo et al., 2019). In 2008, the CHE Framework considered changes in the past 30 years since its foundation (Visco, Mendoza & Eusebio, 2011; Amparo et al., 2012; Sandalo, 2012; Mendoza, Dangcalan & Amparo, 2021). The framework was expanded by looking into the adaptive mechanisms of human beings with their environment and reiterating the four levels where these interactions occur (Agaton et al., 2024: 2). Furthermore, Human Ecological security became the major

goal—reflecting the discipline as both problem-focused and solution-oriented, and the equal contribution of each CHE academic unit in achieving this (Amparo et al., 2019: 8; Agaton et al., 2024: 2).

Pagsubok or paradigmatic pathologies persisted from the very beginning. In the 1950s, Collier (1955: 4) said that Human Ecology had yet to produce a definitive sourcebook. Even in the 1980s, its base was so fragile that all efforts could be erased due to persistent academic overspecialization (Anderson, 1981: 285). Rambo (1981: 186-187) explained that Human Ecology is difficult to understand for a beginner due to its unusual breadth of coverage and lack of any academic department bearing its name. However, immense intellectual rewards await the few who venture in it (Rambo, 1981). The wide divide between the natural and social sciences hindered efforts in developing hybrid methodologies (Walters & Vayda, 2009: 535). Lingering challenges include the lack of conceptual framework to synergize diverse perspectives, insufficient funding, reorganization in universities, limited recognition outside of UPLB and the lack of collaboration among CHE's departments and institute (Rambo, 1981; Hutterer, Rambo & Lovelace, 1985; Amparo et al., 2019; Mendoza, Dangcalan & Amparo, 2021; CHE Review 2022, Rites et al., 2024).

However, there were attempts toward *pagtataguyod* or paradigmatic self-preservation. Majors were introduced in the 1980s to make the Bachelor of Science in Human Ecology responsive to societal needs (Fellizar, 1990; Sandalo, 2012). These are Family Development, Human Settlements Planning and Social Technology. Employability has improved as graduates could find a job within three months after graduation (Sandalo, 2012). Anchoring on global trends, the Journal of Human Ecology (JOHE) transformed into the Journal of Human Ecology and Sustainability (JHES) (Agaton et al., 2024). Most recently, the Philippine Human Ecology Consortium (PHEC) was launched to seek greater government recognition, enhance international engagements, and create a theory and method focused research group to enrich the discipline (Dangcalan et al., 2025).

3.3. Meanings of Human Ecology

Human Ecology in the Philippines was called a discipline, field of study, approach, a profession or as a study of human-environment interactions (see Figure 4). These terms are used interchangeably even in the same document (e.g., Eusebio, 1984; Fellizar, 1990; Dangcalan et al., 2025). As a guide, we defined key terminologies. *Disciplines* require three dimensions: (1) object of study, (2) their stance towards that object, and (3) having a reflexive and philosophical mode (Squires, 1992: 202; Tight, 2020: 417). A *field of study* is a sphere of action or investigation where people from different disciplines and professions study a common problem (Sommer, 2000: 2). Meanwhile, a profession is an occupation that requires specialized knowledge and skills (Sommer, 2000: 2). Finally, Human Ecology as a perspective means finding effective ways to interrelate disciplines, and connect thought into practice (Borden, 2024: 22).

Human Ecology may refer to a complex discipline studying the relationship between humans and their total environment (Saguiguit et al., 1974: 9-10). Eusebio (1984: 9) described it as an emerging discipline focused on the individual, family, community and the larger ecosystem. Fellizar (1990: 54) defined it as a discipline and a profession that studies the interplay of population, resources, technology and institutions within a specific setting. Nobel laureate Ellinor Ostrom and C. Dustin Becker (1995: 114) said that it is a discipline that seeks a common ground between the natural and social sciences. More recently, Dangcalan et al. (2025: 7) called it a discipline and an approach that tackles complex problems.

Human Ecology is called as a fragmented field of study (Anderson, 1981: 277). Rambo (1981: 186) referred to it as a unique field, a science and a perspective that explains how environmental factors influence human behaviors and well-being. Rambo & Sajise (1984: 1-2) added that there was no such thing as Human Ecologists but there were Anthropologists, Botanists or Agronomists using Human Ecological perspectives. Eusebio (1984: 1) while calling Human Ecology an emerging discipline also labelled it a field of knowledge and service. The CHE Review (2022: 4-5) referred to Human Ecology as a field of study and sub-specialization in other disciplines. It added that Human Ecology had no coherent body of knowledge, distinct research questions and policies or standards and guidelines from the government. Being interdisciplinary or transdisciplinary meant that it could not be called a discipline (CHE Review, 2022: v). However, it added that being a field of study is not inferior to a discipline.

Collier (1955: 3) said that Human Ecology tends to focus on smaller areas when dealing with the biological and symbiotic aspects of society. It can be a combination of ideological factors in the context of techniques of production, economic activities, social and political organizations, intergroup relations, and adaptation to a particular biophysical environment (Stewart, 1977: iv). Walters (1997: 276) and Olfato-Parojinog and Dagamac (2024: 11) called it a scientific study of the interactions between social and natural systems. Human Ecology may refer to the study of the complexity, causes, context and dimensions of human-environment interactions (Blessington, 2017; Borden, 2014 & Boyden, 2016). Amparo (et al., 2019: 5) noted that Human Ecology has been used as a catch-all term when combining various areas of studies into generalized academic units or departments. The CHE Review (2022: 15) emphasized that Human Ecology in UPLB is a social science.

Are these definitions contradictory? *Our position is that being a discipline, field of study, perspective or profession can co-exist depending on how Human Ecology is used.* We take Putnam's (1977) view that meaning is defined internally within the Human Ecology community and intersubjectively by its external public. All these terminologies are used in the literature, and their boundaries are fuzzy. The author himself interchanges discipline (p.7) and field (p.20) to describe Anthropology, and discipline (p.7) and perspective (p.30) for Sociology.¹ Krishnan (2009: 7) stressed that the disciplinary requirements he proposed are not canonical and do not represent the official views of disciplines he examined—Sociology, Anthropology, among others. Furthermore, some disciplines like English Literature lack a unifying paradigm or method but may be considered as a discipline (Krishnan, 2009: 10).

New disciplines begin as an interdisciplinary project (Krishnan, 2009: 34). However, some fundamental disciplines remained interdisciplinary such as biochemistry and biochemical pharmacology (Morange, 2007; Enna et al., 2008; McGill University, 2025; NOVA FCT, 2025). Krishnan (2009: 10) said that, at the minimum, disciplines are legitimized through the establishment of a professorial chair. In the Philippines, there is a bachelor's program in Human Ecology, four Colleges of Human Ecology, the Human Ecology Institute of the Philippines, Inc. as a government-registered professional organization, and the Philippine Human Ecology Consortium. Furthermore, the literature points to human-environment interactions at the community-level as its object of study (Sajise, 2010). Scholars also attempted to develop its own methods and tools such as Vayda's (1983) Progressive Contextualization, Walters and Vaydas's

(2009) Event Ecology, and more recently Dyball and Newell's (2014) Cultural Adaptation Template which has been used in several Human Ecology research (Davila, 2018; Davila, 2020; Amparo, 2021; Serquina et al., 2023; Dapito et al., 2023).

We argue that Human Ecology is an interdisciplinary and transdisciplinary discipline. It can be viewed as a discipline when referring to a branch of knowledge existing within an academic unit that is invested in its theoretical and methodological development. It can also be a "field of study" when various disciplines work on a common problem. Sociologists, Botanists, and other specialists may adopt a more "Human Ecological approach or perspective" in explaining human-environment interactions from their own disciplinary standpoint. Professionalization can be pursued through government policies.

In other words, there must be room for those who envision Human Ecology as a discipline. At the same time, those from other branches of knowledge who view it as a field of study or perspective should be encouraged and allowed to prosper. We demonstrated using paradigmatic logics that these different views must not be pitted against each other. In fact, those devoted to the development of Human Ecology's methods and tools may benefit from a dialogue with specialists who are using a Human Ecological perspective. Sajise's (1984) work as a Plant Ecologist and Rambo's (1981) publications as an Anthropologist provided rich conceptual materials from which transdisciplinary Human Ecological SES analyses on food systems, for example, have built on more than three decades later (Davila, 2018; Davila, 2020). Academic leaders must navigate these differences and strategically weave various Human Ecology traditions to advance our discipline.

Given its various meanings, this study affirmed a locally grounded definition of Human Ecology in the Philippines as "*an integrative body of knowledge that is concerned with the interactions between humans and their total environment*" (Rodriguez et al., 2025: 83). We subscribed to the original definition of 'total environment' as an encompassing concept that includes the ideological, psychological, social, cultural, historical, biological, aesthetic, physical, and temporal dimensions of reality (Saguiguit et al., 1974). The term "body of knowledge" keeps the definition nimble while retaining some boundaries. Meanwhile, the word integrative presents Human Ecology as a place of synthesis in understanding and solving complex problems. Human Ecologists may work on ecological systems at a micro scale like Human Nutrition and Food. Others in Human and Family Development Studies and Social Development Services deal with the meso scale while Human Settlements Planning focus on the macro level.

Debates on Human Ecology's definition will remain. If managed well, these conceptual discourses may take it into greater disciplinary flourishing. Increasing calls for the restructuring of the academy (Evans, 28 February 2025) may also trigger paradigmatic transformation, making disciplines and fields obsolete. Where Human Ecology aligns itself in that transformative process is critical to its survival and growth.

3.4. Purpose of Human Ecology

Human Ecology in the Philippines was utilized as a (1) synthesizing science or *pabubuod*, (2) a means to understand and solve complex problems or *pag-sasaayos*, (3) a dialogical space to enhance people's participation to improve their quality of life or *pagbuklod*, (4) a way to critically analyze and challenge orthodoxies in human-environment interactions or *pagsusuri*, and (5) a mechanism to examine global problems to inform local solutions or *pagpapalawig* (see Figure 5).

Being a synthesizing science (*pagbubuod*) entails the integration of different colleges, institutes and departments in UPLB to enable the university to play a more functional role and solid impact to national development (Saguiguit et al., 1974). Human Ecology is a place of convergence between the social and biophysical sciences (Rambo & Sajise, 1984; Fujisaka, 1986). Moreover, various factors both humans and non-humans across scales are woven together using integrative concepts and methods while questioning whether these arrangements are ethical or sustainable (Vayda, 1983; Walters, 1997; Dyball, 2010; Dangcalan et al, 2025). This synergistic approach helps in navigate complicated intersecting concerns such as urban ecology (Olfato-Parojinog & Dagamac, 2024) and sustainable livelihood programs in agriculture, aquatic and natural resources (AANR) sector (Dangcalan et al., 2025). Rambo and Sajise (1984) would go as far as saying that research on tropical agricultural systems is "best" carried out in closely integrated transdisciplinary teams using a Human Ecological framework (Anderson, 1981; Sajise, 2010).

Owing to its problem-based approach (Fellizar, 1990) and integrated perspective on rural development (Saguiguit et al., 1974), Human Ecology is useful in understanding and solving complex problems (*pag-sasaayos*). Its wide breadth and the numerous tools at Human Ecologists' disposal provide holistic education for young people to manage their total environment (Saguiguit et al., 1974:13-16). Human Ecologists are trained to use systems thinking, decipher material and energy flows, organize systems into networks and hierarchies, and understand system change dynamics. Moreover, they possess ecological thinking, a transformative orientation and reflexive mindset to surface dominant cultural paradigms (Sandalo, 2012; Blessington, 2017).

Local planners and communities benefit from a Human Ecological approach as it gives them the ability to see connections among disparate factors, understand the root causes of issues and harness opportunities amidst complex problems (Dapito et al., 2023: 1182). The Barangay Integrated Development Approach for Nutrition Improvement (BIDANI) is an excellent example of using an integrative Human Ecological approach in solving the country's chronic malnutrition problem (Fellizar, 1990: 40). Human Ecology has also been applied in determining the carrying capacities of agroecosystems, developing strategies to regenerate overstressed systems, analyzing the relationship between changing ecosystems and the quality of human life, designing systems to cope with unpredictability (Rambo & Sajise, 1984: 24), understanding the complex conditions of street children (Saguiguit, 1994), ecosystems restoration in the tropics (Walters, 1997: 287), science and technology interventions (Dapito et al., 2023:1181), small scale fisheries (Amparo, 2021), natural park management (Horigue et al., 2023: 11) and food and nutrition security (Dangcalan et al, 2025).

In the past decades, Human Ecology has been used to enhance people's participation to improve their quality of life (*pagbuklod*). Its core mission is to develop self-sustaining communities by harnessing the human potentials to their fullest (Fellizar, 1990). Human Ecologists work with communities through its research and extension programs (Visco, 2015) to enhance their developmental values such as productivity, self-reliance and ecological stability (Fellizar, 1990). In managing urban ecosystems, Human Ecology is used to determine people's perception to ensure broad-based participation in development projects (Olfato-Parojinog & Dagamac, 2024: 11).

Human Ecology also analyzes and challenges orthodoxies (*pagsusuri*) by unraveling the consequences of human actions to the environment (Walters, 1997: 276). By surfacing dominant cultural paradigms, it offers insights on the social drivers of environmental change (Davila, 2018: 23,37; Davila, 2020: 4; Amparo, 2021: 6). Rather than characterizing human-nature interaction as conflicting, stewardship is premised on partnership and mutual-benefits that guide these dynamic interrelationships (Visco, Mendoza & Eusebio, 2011). Furthermore, Human Ecology's breadth permeates contours where forgotten issues are surfaced such as death and dying (Mendoza, Dangcalan & Amparo, 2021) and innovative tools such as forest history are revealed to better understand complex issues (Walters, 2003).

Its multi-scalar concern meant that global problems can be systematically analyzed to inform actionable local solutions (*pagpapalawig*) (Mendoza, Dangcalan & Amparo, 2021). Human Ecology's nimble, progressive and solution-driven nature meant constantly anchoring itself on broader social-ecological transformations outside of the academy. At the same time, its community-based focus (Fellizar, 1990; Sajise, 2010) meant that Human Ecology is cognizant to realities on the ground. In UPLB, it has been at the forefront of translating the global sustainable development agenda into local policy making. Sustainability was included in the name of its official journal. In aligning itself with the global agenda, Human Ecologists co-create systems that support human needs, respect ecological limits, promote social equity and ensure the planet's health (Agaton et al., 2024: 3).

IV. CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

While Human Ecology in the Philippines is predominantly applied, rich conceptual discussions took place in the past decades. Our work showed that conceptualizing Human Ecology is an intergenerational project and a product of a century of collaborations between Filipino and foreign scholars. We also highlighted less known scholars like Anderson (1981) who traced Human Ecology research all the way to the 1920s and 1930s. Second, the emergence and development of Human Ecology was a result of the intersectionality of local and global realities. Paradigmatic logics was presented as a novel concept that examines how bodies of knowledge are constantly defined, justified and contested.

Third, Human Ecology in the Philippines has been defined in different ways (e.g., discipline, field, etc.). These are not necessarily contradictory as the definition is contingent on how it is used. We also affirmed and substantially expounded the locally grounded definition of our discipline referring to *Human Ecology as an integrative body of knowledge that is concerned with the interactions between humans and their total environment*. Fourth, our findings supported the position that Human Ecology in the country is developmental, applied, and solution-oriented. Through a CSR, we surfaced five ways in which Human Ecology was used—to become a synthesizing science (*pagbubuod*), facilitate the understanding and solutions to complex problems (*pag-sasaayos*), serve as a dialogical space for people's participation to improve their quality of life (*pagbubuklod*), critically analyze and challenge orthodoxies in human-environment interactions (*pagsusuri*), and examine global problems to inform local solutions (*pagpapalawig*).

While we strongly committed to a methodologically rigorous CSR through peer-review and registration at PROSPERO, there was a possibility that some studies outside the parameters of the systematic review protocol were missed. The far distance of conducting this CSR in Portugal entailed greater reliance on the UP e-library platform KOHA, which might have excluded printed documents that have no digital versions. Inherent in a systematic review, lived articulation of meanings outside written works were not captured. This is further magnified in a more applied discipline such as Human Ecology in UPLB. Finally, the focus on UPLB excluded other Human Ecology academic institutions in the Philippines such as the Colleges of Human Ecology in Central Mindanao University, Nueva Vizcaya State University and the University of Southern Mindanao.

Future studies may engage in archival research within the UP System and UPLB to capture all relevant documents pertaining to Human Ecology. Empirical research using focus groups and interviews could capture lived meanings and purpose of the discipline. Ethnographic work could enrich these discussions with particular focus on how HUME 100 or Introduction to Human Ecology was taught. This course is critical as it is an introductory course taken by all students in UPLB CHE regardless of their degree program. Furthermore, it is in HUME 100 where the prevailing definitions and perspectives on Human Ecology were discussed. Observations and analyses can also be made on past and current research and extension programs of UPLB CHE. Finally, comparative studies across the four Colleges of Human Ecology can create a fuller picture of the state and future directions of Human Ecology in the country.

In closing, we believe that there is a strong case to conceptualize Human Ecology in the Philippines. Its applied orientation meant Filipino Human Ecologists already co-create solutions that directly improve lives. Whether it is combating malnutrition, ensuring a thriving Filipino family, strengthening human organizations and social institutions, or ensuring resilient and just environments. We must "*talk the walk*" more if we are serious in making our discipline thrive and its relevance in solving complex problems fully realized. In this journey, we can learn from the humble rice. A single grain may seem insignificant but when we collaborate, Human Ecologists can be like that unassuming rice—capable of becoming a powerful force that could change the course of civilizations. Amidst the polycrises, we are compelled to work together now more than ever. It not only strengthens our position in our respective universities but also helps in amplifying the positive impact that we have on the world around us.

IV. DECLARATIONS

FUNDING INFORMATION

Not applicable

ETHICS STATEMENT

This systematic review has a registration number CRD420251271510 in PROSPERO—an international registry that aims to reduce reporting bias and duplication.

CLINICAL TRIAL NUMBER

Not applicable

V. REFERENCES

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Footnotes

1. The use of *p* to denote the page number was deliberately done to emphasize the parts of Krishnan's (2009) influential work where these terms were used interchangeably.

Figures

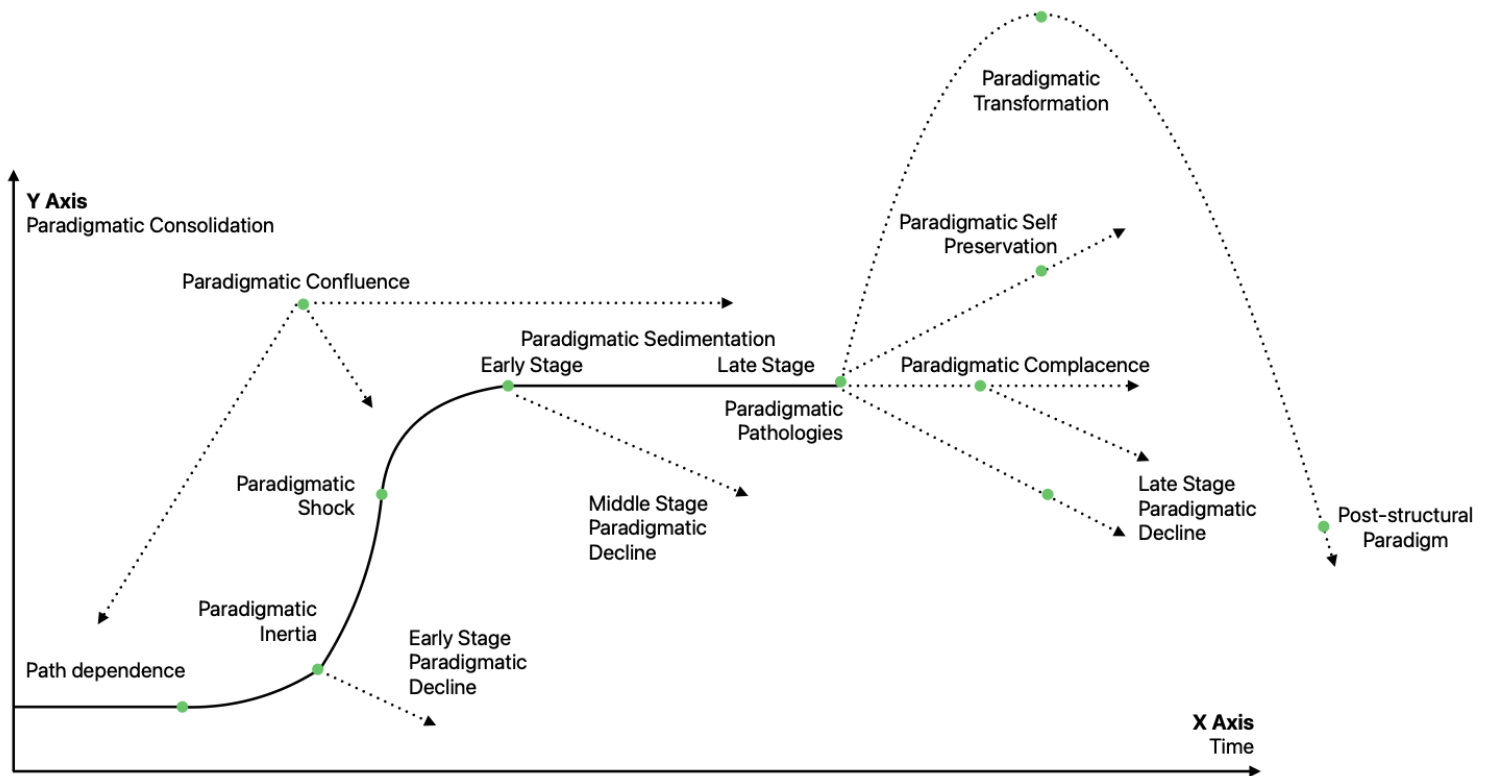


Figure 1
Components and Phases of Paradigmatic Logics © Dangcalan (2025)

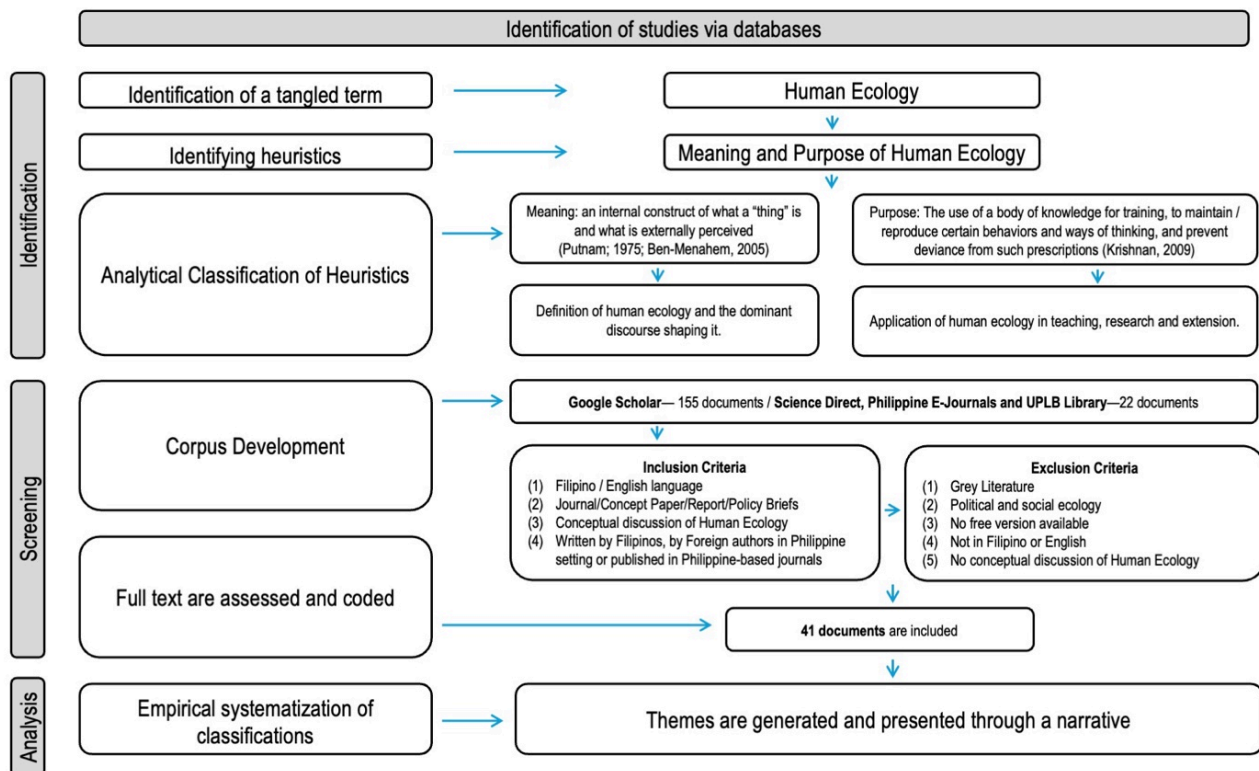


Figure 2
Conceptual Systematic Review Protocol © Modified from Schreiber & Cramer (2022) and Omland et al. (2025)

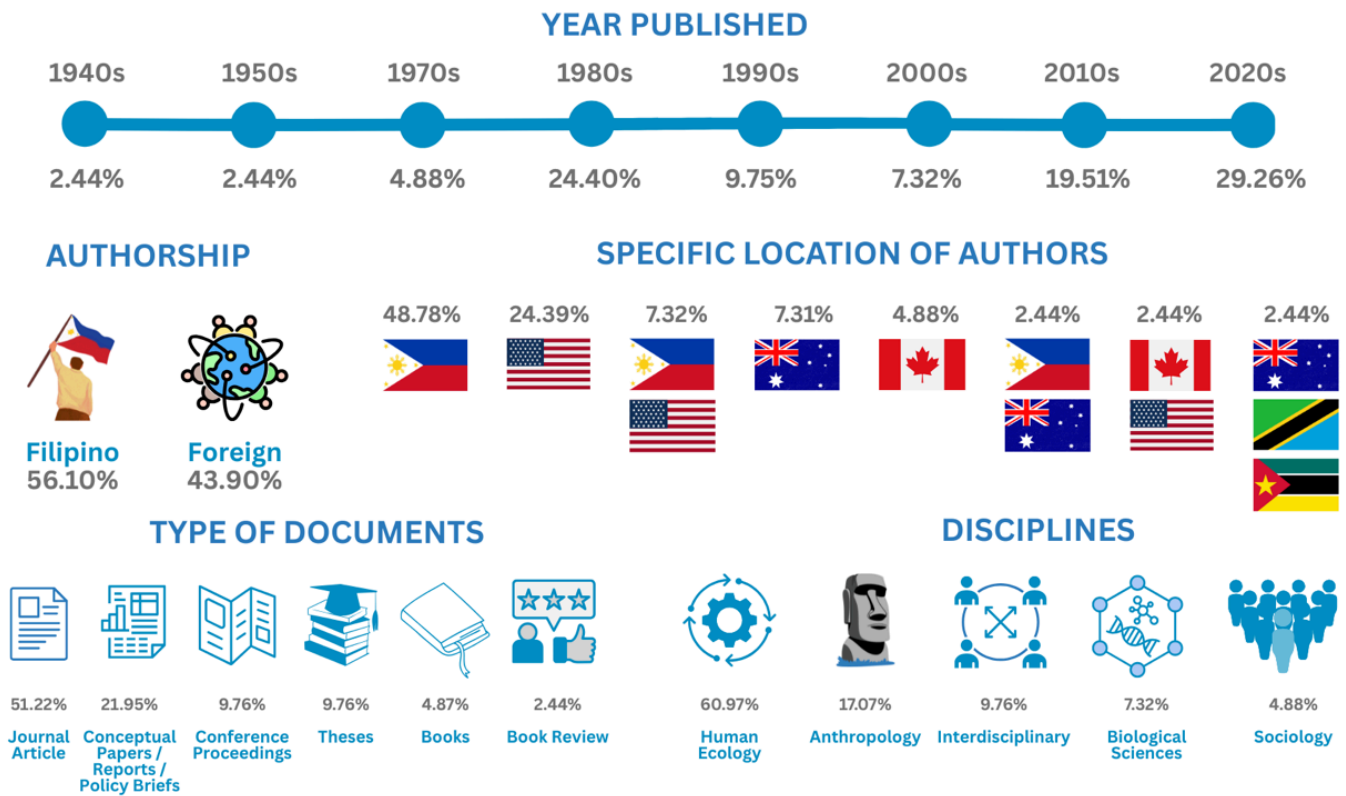


Figure 3

Major Human Ecology Publications in the Philippines (N=41)

Profession (n=1)

Approach (n=3)

Discipline (n=8)

Study (n=3) Field (n=6)

Interrelationship (n=1)

General (n=3)

Figure 4

Definition of Human Ecology (N=25) © Author's work via Word Cloud Generator



Figure 5

Purpose of Human Ecology (N=59) © Author's work via Visme