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The Potentials, Risks, and Insights gained from Indigenous Planning on Degrowth in Ghana

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ABSTRACT

As of right now, Ghana is experiencing unsustainable economic growth characterized by environmental challenges and biodiversity loss. Degrowth offers an imposed conformity to biodiversity conservation when growth becomes incompatible with environmental protection. According to earlier studies, Ghana's traditional planning system, which regards nature as a holy place and involves a number of taboos and adherences, prevents resource overexploitation for the sake of economic growth (degrowth) as a result the purpose of the study was to assess the potentials, the risks and lessons derive from the role of indigenous planning on degrowth in Ghana. The findings from the three traditional areas used as research cases showed that practices and taboos that protect the ecosystem from overexploitation for economic purposes, which was conceptualized as degrowth, were influenced by the belief that plants, animals, and water bodies have spirits and cultural significance.

The study also uncovered commonalities and discrepancies between the native planning systems in the study locations. The discrepancies between the systems were founded on history, belief systems, and the characteristics of the geography in which the locations were situated. However, all systems share a common goal of protecting valuable resources. The study also showed that, despite being a beneficial method, indigenous planning cannot address all conservation issues that local communities are facing because of disparities in belief systems, which makes it impossible to guarantee the protection of all endangered species. Through the lens of indigenous planning, this work adds to the understanding of degrowth within socio-

spatial planning. This evidence-based information gives the government and pertinent organizations the measurements they need to weigh development and conservation choices.

Key words: Indigenous planning, Degrowth, planning, Indigenous knowledge and worldview.

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Benolia Adjei -Cudjoe

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TABLE OF CONTENT

LIST OF FIGURES

LIST OF TABLES

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1. INTRODUCTION

Ghana's economic growth has been extraordinary. There is one catch, however: the natural resources that underpin this achievement must be protected and handled wisely. Ghana has progressed over the last 30 years thanks to increases in the price and output of cocoa, gold, and oil: real GDP growth has quadrupled, extreme poverty has fallen by half, and Ghana was elevated to a Lower Middle-Income Country classification in 2011 (Srivastava and Pawlowska, 2020). Ghana's elusive economic success has come at a substantial environmental cost. Economic growth has altered the structures and functions of ecological regions of Ghana, jeopardizing efforts to achieve the Sustainable Development Goals (SDGs), particularly SDG 15, which aims to "sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss¨ (Qafa, 2017).

Environmental change has risen to the forefront of both global and local priorities. A number of initiatives have arisen in response to this dilemma, the most prominent is degrowth (Krähmer, 2021). Degrowth scholars argue that humans must respect the planet's bounds and that people must abandon their fixation with unbridled economic expansion, which has negative social, cultural, and environmental consequences (Lamker and Dieckhoff, 2020).

Ghana is currently caught up in unsustainable economic growth marked with biodiversity loss and degrowth provides an imposed conformity to biodiversity conservation when growth becomes inconsistent with environmental protection (Qafa, 2017). Previous research has

revealed that a traditional planning system in Ghana that views nature as a holy place and contains a set of taboos and adherences guards against overexploitation of resources for the pursuit of economic growth (degrowth). Therefore, the goal of this research is to critically evaluate the potential, the danger, and the understanding of the impact of indigenous planning systems on degrowth in Ghana. The following research question is posed in order to fulfill the research goal:

*What is the role of indigenous planning system on Degrowth in Ghan*a?

Sub-research questions:

1.How does the perception of nature differ when it comes to indigenous views in Ghana and what is generally stated?

2. What are the differences and similarities between indigenous planning processes within the traditional areas?

3. What is their role in conservation of local resources and biodiversity ?

4. What is the effect of social change on indigenous planning systems in the traditional areas?

Furthermore, the academic relevance of this research is to add place-based and spatial insight into the study of degrowth. This research adds significance to the urgent matter of conservation specifically for planners in solving environmental sustainability dilemmas. Whereas the societal relevance of this research is to explore certain indigenous planning systems that allow contribution to degrowth through the conservation of the ecosystem. This can guide local governments in formulation of conservation policies.

In the following chapters, we first dive into the theoretical framework relevant for this study, including the degrowth ,sustainable Development and indignous planning process as well as

their relations to conservation of local resources through the lens of indigenous practices and belief. This is followed by the theories' contribution to planning theory, and lastly, the conceptual model. Second, the methodology part explains case study as the research strategy and the mixed-method approach as the research design. The data collection framework displays how the data is conducted, tools that are used, and participants included . Moreover, the data analysis techniques elaborate on analytical tools used for giving meaning to data. Third, the results are derived from two methods, namely literature review and semi-structured interview. The last sections describe analysis interpreting the raw results of research, which is then followed by policy recommendations and a conclusion.

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2.THEORETICAL FRAMEWORK

The theoretical framework starts with defining degrowth. The essence of indigenous planning process is then explained more through the people- place-knowledge-value loop. The formation of beliefs and practices is then zoomed in through the study of indigenous ecological framework which is a way local people understand their environment leading to its conservation . As a specific type of planning process ,we will look into indigenous planning processes that contribute to the conservation of resources within an ecosystem by locally embedded culture which is then followed by limitations or risks of indigenous planning systems. This section is concluded by interpreting new insight and relevancy of each theory used in this study to planning theory.

2.1 Degrowth

Degrowth is a criteria for sustainability, a social movement and a topic of political discussion, and an area of scholarly inquiry. A degrowth society, according to a widely accepted definition, is an equitable downscaling of production and consumption that improves ecological circumstances at the local and global levels, in the short and long terms (Schneider, Kallis, and Martinez-Alier 2010). Living within ecological limits by lowering output and consumption levels while simultaneously pursuing universal well-being and advancing justice and democracy is at the heart of the degrowth philosophy (Demaria et al. 2013; Weiss and Cattaneo 201). Beyond the present capitalist society and the conventional green development ideal, degrowth demands radical societal transformations (Foster, 2011; Asara et al. 2015).

2.2 Degrowth and Sustainable Growth

Degrowth aims to re-politicize the discussion on current societal economic change, opposing the pro-growth dominant discourse in planning and implementation and questioning the false narrative of "sustainable growth" (Demaria et al, 2013). The biosphere is a complex system in which everything is interconnected, when individuals amass more supplies and products, the ecosystem diminishes since the resources needed to manufacture the goods we use every day are extracted from the environment (Kallis, 2018). Productivism, the concept that productive capacity and growth is the essence of human institution, is opposed to the concept of degrowth thinking. As a result, productivism is incompatible with the existing model of sustainable growth (Lorek and Fuchs, 2013). While interest for sustainability is not inconsistent with degrowth, sustainable growth is grounded in broader development theories that strive to promote capitalist expansion and consumerism. As a result, degrowth considers sustainable growth to be a contradiction in terms (Latouche, 2009).

Even degrowth will disturb the planet, so we must embrace new conditions for it to stay healthy or resilient. However, even these conditions will give rise to competing definitions, which could put an end to the entire discussion about the kind of planet we want to live on and our obligation to keep it in good condition. We need to be pragmatic and encourage dialogue between the degrowth and eco-modernist groups to address the imbalance between these two belief systems that we relate to with our actions and the effects of those actions, rather than engaging in lengthy discussions about sustainability being good or bad (Robbins, 2021)

2.3 Gaps in Degrowth literature

The three primary (one, two and three) gaps in the degrowth literature that served as the basis for this study are briefly discussed in this section.

2.3.1 Missing link between Degrowth and Planning

Degrowth has changed from an activist movement to a multidisciplinary academic area since the inaugural international degrowth conference in Paris in 2008, drawing on research from history, social science, cognitive science, political economy, ethics, and politics . Notably, the spatial dimension and the disciplinary involvement of urban planning are largely ignored in existing degrowth narratives, with the exception of a few recent attempts from geographers and planners to embrace a spatial standpoint in the degrowth debates like the compact city policies and the urban sprawl movement (Demaria, Kallis, and Bakker 2019; Schmid 2019). Furthermore, according to Cosme, Santos, and O'Neill (2017) and Weiss and Cattaneo (2017), degrowth academics have not yet acknowledged spaces and planning as a possible subject for future degrowth studies. According to Xue (2021), one of the flaws in the degrowth movement is its neglect of urban spatial development and planning, which, at best, weakens the movement´s coherence and strength and, at worst, hinders the degrowth transformation.

2.3.2 Limited Scope

Degrowth favors small-scale, bottom-up initiatives like urban gardening, squatting, and co-housing, but has not acknowledged the relevance and the role of indigenous culture and knowledge (Jackson,2017). Its prescriptions are universal and rooted in science without taking into account context, local initiatives and power relations.

2.3.3 Focus on the global North

Many people who are aware of the negative environmental effects of growth continue to promote it in the South, even if they are not in the North (see Hickel and Hallegatte, 2021, Jackson, 2017) and this is distressing. African nations are typically represented in debates of climate change as suffering from the effects of the issue rather than as contributing to it

(Goldstone, 2021), Africa's emissions could continue to rise, with certain countries becoming major polluters equivalent to those in the developed world (Lacour et al 2021). This is because developing countries are more prone than European actors, according to Njoh (2003), to deepen and implement neoliberal policies and land governance tools in a more fixed and strict manner. The reason for this is the goal of "urban modernism," which is based on the assumption that with time and continued imitation, developing countries will eventually achieve the same level (cultural and economic) as Western countries, resulting in communities with metropolitan lifestyles similar to those seen in Europe or America (Waston, 2009).

2.4 Indigenous planning

Indigenous planning, also known as Indigenous community planning, is a regional planning ideology in which planning is carried out by Indigenous peoples for indigenous communities. Professionals incorporate culturally based knowledge into the planning process. (Matunga,2013). All human societies plan, and Indigenous societies have been conducting their own community planning processes for thousands of years, according to indigenous planning (Jojola, Natcher and Walker, 2013).

Compared to mainstream or Western planning, indigenous planning has a wider and more thorough reach and is not just concerned with land use planning or physical growth. Through community development, indigenous planning can address all facets of community life, such as the broader societal factors that have an impact on community members' quality of life (Walker and Matunga, 2013)

Given that it gives communities a way to face and resolve their own oppression, indigenous planning can also be seen as an example of insurgent planning (Sanderock and Lysiottis, 1998). Indigenous planning is frequently a technique that enables Indigenous communities to reclaim control over resources, maintain their culture, and exercise political independence (Lane and Hibbard, 2005)

2.4.1 Principles of Indigenous planning

Indigenous planning differs from "mainstream" or Western planning approaches in some significant ways, including the recognition and assimilation of ancient traditions, cultural heritage, and Indigenous ideologies (Jojola, 2004). Indigenous planning paradigms are built on a foundation of collective land stewardship and land tenure (Jojola, Natcher and Walker, 2013). Indigenous planning though diverse and location based, one common characteristic it has globally is that it views land as a property that belongs to all, handed down from one generation to another as opposed to regulating private land usage, as does western planning (Jojola, 2005). Because of this conviction, Indigenous planning places a strong emphasis on maintaining the lands' productivity for future generations (Jojola, 2005). Numerous indigenous technologies that promote a healthy human interaction with the environment and assure human symbiosis with nature in the present and the future are in accordance with this idea and represent an exceptional component of indigenous planning (Waston, Robertson, De Rosen, 2020).

Indigenous peoples all over the world have maintained and built diverse, flexible, and ever-evolving planning cultures that are specific to their respective lands, histories, and peoples. These cultural planning techniques include resource utilization, place making, and the transmission of traditional ecological knowledge between generations (Jolola et al 2013). Indigenous planning adheres to traditional governance frameworks, such as maternal or paternal cultural roots or general agreement decision-making, self-reliance and tenacity, mutuality and commemoration. Complex relationships with time exist, with a strong emphasis on recurring trends, such as nature-human interpersonal interactions and the Seven Generation Sustainability methodology which is the idea that the choices we make now should lead to a planet that is sustainable for seven generations. (Cook, 2013). Instead of using a negative or

weakness-based assessment framework, strength-based practices and wellness planning lenses are used (Wellness for nation, n.d).

2.5 Indigenous planning as a process

When we think of Indigenous planning as a process, Porter et al. (2017) claim that the people-place-knowledge-values loop may be used to articulate the crucial aspects that subsequently come into play when faced with a choice. The process by which "Indigenous people make decisions about their place (whether in the built or natural environment) utilizing their knowledge (as well as other areas of knowledge), values and ideals to define and advance their present and future social, cultural, environmental and economic aspirations" is known as "indigenous planning," according to Porter et al. (2017).

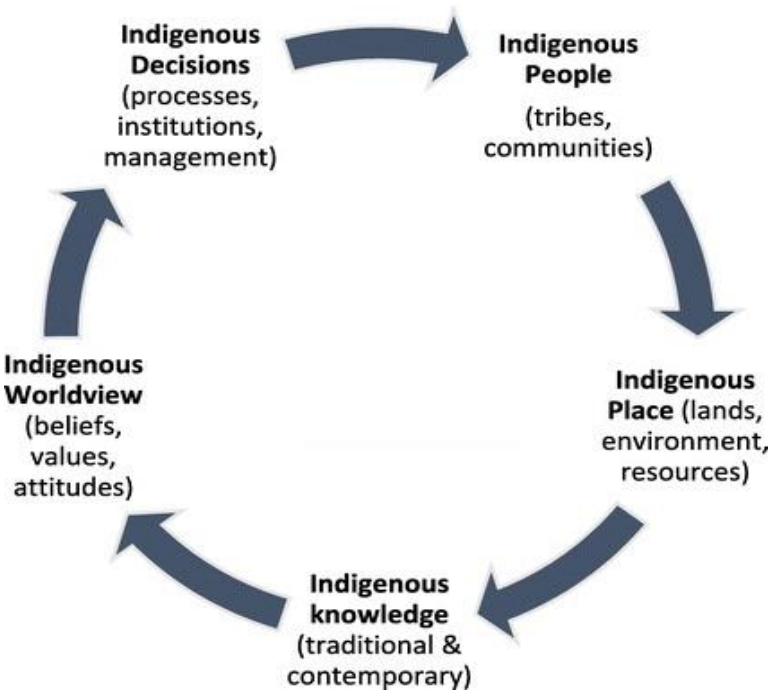

Figure 1: Indigenous Planning process

Porter et al (2017)

2.6 Components of Indigenous planning

This section provides a description of the components of indigenous planning as a process as indicated by figure 1 above.

2.6.1. Indigenous people, place and decisions

The term "Indigenous Peoples" refers to several socioeconomic and cultural groups that have shared ancestral links to the lands and natural resources that they currently reside on or have been displaced from. Their identities, customs, and means of subsistence, as well as their bodily and spiritual well-being, are intricately linked to the land and natural resources on which they rely. They frequently follow their traditional leaders and organizations for representation, which differ from or are not part of the majority society or culture (Indigenous People Overview, n.d). Hooft (2006) asserts that the fact that local actors (with hierarchy) are in charge of indigenous planning is a crucial requirement. Indigenous planning needs to be directed through established structures and authorities that are well-respected, well-known, and easily accessible for authority and transparency. Thus, the preservation of local resources depends on indigenous knowledge and indigenous organizations like clans.

2.6.2 Indigenous Knowledge

Indigenous knowledge is a complex collection of locally relevant knowledge that encompasses both the essence of ancestral knowledge and the legacies of other histories and cultures (Dei, Hall and Rosenberg, 2008). According to Ocholla (2007), indigenous knowledge is a living legacy made up of all of the knowledge and skills that have been accumulated through generations by a community and communicated via actions, artifacts, and a shared language.

In terms of indigenous planning, Woodley's (2004) Indigenous Ecological Knowledge (IEK) paradigm (Figure 2) illustrates how a community sees the environment within an ecosystem, contributing to the preservation of biodiversity. Context, practice, and belief are the three fundamental constructs of Woodley's paradigm. By context, information is mostly learned

orally about the history, demographics, and biophysical characteristics of a region. While belief illustrates the impact of spirituality and values on behaviors of people within the ecosystem, direct interaction and experience create knowledge by practice. The Indigenous Ecological Knowledge is a symbolic mental model that conceptualizes the environment from a situational standpoint and gives explanations for daily behaviors that exist within a traditional community and shows how individuals interact with nature inside an ecosystem. The framework also includes the dimensions of space and time. The spatial component is comprehensive and location-specific or place based.

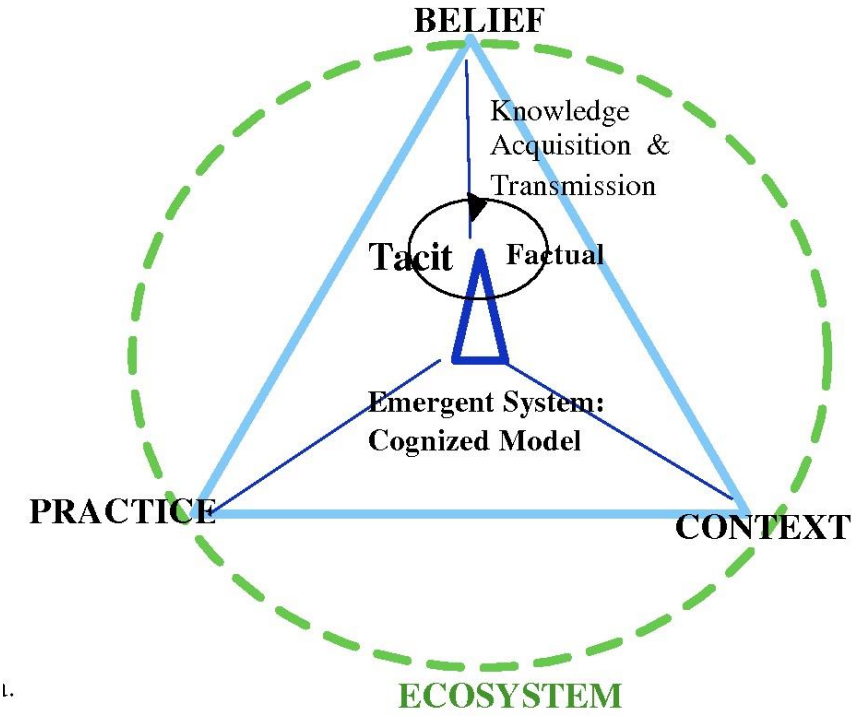

Figure 2: Indigenous Ecological Knowledge Framework

Woodley (2004)

2.6.3 Indigenous worldview

Even though Indigenous Peoples are incredibly diverse, their worldviews and ways of being share some similarities. According to indigenous worldviews, a person's entire being—physical, emotional, spiritual, and intellectual—is related to the earth and to other people (State

of Aboriginal Learning in Canada, 2009). Porter et al (2017) argued that indigenous worldview consists of beliefs, attitudes and norms that guides the way of life of indigenous people. Indigenous knowledge is shaped by a worldview. Worldviews, according to Clark (2002), are the beliefs and preconceptions that a person uses to create a sense of events that are buried deep inside the cultural legacy of the surrounding society. Worldviews, according to Schlitz, Vietzen, and Miller (1999), are a compilation of perspectives, or ideas, premises, emotions, ideals, and concepts that work together to develop a complete model of reality. According to Clark (2002), worldviews are the common ideals and assumptions that underpin a society's practices, norms, and institutions. "Origin myths, narrative stories, linguistic metaphors, and cautionary tales" are all subtly communicating worldviews, according to Clark, and they "establish the ground rules for shared cultural meaning." She went on to say that cultures are products that live within bigger contexts.

2.7 Indigenous planning and Degrowth (Conservation)

It is impossible to overstate the importance of indigenous planning systems. Its good effects can be evident in all elements of life's growth. However, because the focus of this research is on degrowth, the advantages of indigenous knowledge systems will be examined in this context. Indigenous knowledge has traditionally focused on the evolution of human behavioral traits with the goal of modifying how people respond to natural biodiversity resources. It imposes a moral responsibility on those who use it, assisting in the creation of a "moral economy" (Materer et al, 2002). Furthermore, indigenous planning is a valuable type of wealth since it benefits government agencies in saving billions of dollars by reducing the corrosive effects of moral decadence, which deplete the environment's valuable biodiversity resources.

Indigenous knowledge systems, according to Ajani et al (2013), can be extremely valuable to conservationists and planners. They emphasize the cost-effectiveness of indigenous planning,

as well as its participatory and long-term benefits. It is participative in the sense that it serves as the framework for decision-making in local communities. Furthermore, indigenous planning fosters a culture of communalism or social work, making the execution of planned conservation techniques possible (Battiste, 2002).

Indigenous planning systems have been used to protect culturally significant species of flora and animals, as well as their environments. This is due to the fact that aspects of the environment (land, waterbodies, plants and animals) are culturally linked with the people's rituals and beliefs (Wilder et al, 2016) which Awuah-Nyamekye (2012) described as sasa, a belief that some plants and animals have spirits. These belief systems lead to the formation of taboos that frequently govern how people interact with the environment (Colding and Folke, 2001). Taboos are rules that, when broken, instantly place the offender in a condition of ceremonial incapacity that can only be cured by a purifying ceremony. They clearly state what is permitted and prohibited and are not to be confused with social norms (Webster 1973). Similar perspectives are discussed by Douglas (1966), Adler and Fardon (1999), and others. Webster (1973) asserts that taboos have economic and social dimensions , the former pertaining to "food restrictions" while the latter, to a frame of mind that incites everybody to unquestioningly obey, making taboos self-enforcing moral codes. In terms of conservation, Colding and Folke (2001) provided six categories of habitat and resources taboos and their function. These are defined in the table below.

Table 1: Categorization of taboos by Colding and Folke (2021)

Habitat and resources taboos	Function
Habitat taboo	Limit access and use of resources in a specific location
Method taboo	Limit resource extraction methods
Temporal taboo	Prevent the extraction of resources at the particular point in time and season.
Segment taboo	Control resource extraction
Specific species taboos	Total protection to species in time and space
Life history taboos	Control the extraction of vulnerable life species

The participatory aspect of indigenous planning systems, according to Ajani et al (2013), calls for the highest level of local participation in conservation programs. Every compact society appreciates food cooked in their own pots and will enthusiastically support its implementation. As a result, Wilder et al (2016) advise scientists and project planners to include indigenous planning systems in biodiversity conservation policies and plans while collaborating with local people in their planning and development. Rather than declining their engagement and

experiencing failures and revenue losses, this will assure a seamless deployment and success (Golo and Yaro, 2013).

Indigenous planning systems also have the value of serving as a checker for scientific analysis conducted out in local areas (G'Nece, 2012). This is crucial because a scientific study may be incorrect when applied to a specific local population. In this sense, local people's indigenous knowledge can provide a rich source of information and insight to compensate for the shortcomings of scientific analysis, which, when applied generally, cannot address the unique peculiarities of each ethnic culture.

Indigenous planning has such a high importance that international authorities and agencies that are in charge of biodiversity conservation have recommended planners to take it into account when planning and formulating national biodiversity conservation plans and policies. For example, Article 8 of Chapter 10 of the United Nations Convention on Biological Diversity urged each contracting party to "respect, preserve, and maintain knowledge, innovations, and traditional lifestyles of indigenous and local communities relevant to the conservation and sustainable use of biological diversity ”

2.7.1 Risks of Indigenous planning

Indigenous planning has its own constraints, much like mainstream planning, and these must be acknowledged. Because of erroneous beliefs that everything indigenous people do is inherently compatible with the environment, indigenous planning is sometimes accepted without question (Desta and Smithson, 2010). Though valuable, it is often overvalued and misused which does more harm and retards the development and progress of the local people. Stated differently, there is a serious risk of overvaluing and over-romanticizing indigenous planning in practice because it is so appealing as a substitute (Briggs, 2005). As Hountondji points out, there is a temptation to "overvalue our heritage" when considering the potential and

contributions of indigenous planning in relation to sustainability and sustainable development. We should also keep in mind that indigenous knowledge "can be said to be less systematic than scientific knowledge" (Hountondji, 2002, p. 25). This is consistent with Sillitoe's advice to "beware of any romantic tendency to idealize it." (Sillitoe, 1998, p. 227). Again, indigenous planning does not entail that all local values and beliefs should be accepted without question and that all outside growth possibilities should be disregarded (Hooft, 2006).

The problem is that indigenous planning is frequently not problematized but rather taken for granted as harmless, acceptable, and ready to be utilized knowledge (Schroeder, 1999). Indigenous peoples have also violated environmental laws by overgrazing, overhunting, or over cultivating the land, according to historical and modern evidence. Thinking about indigenous planning as always being "good," "right," or "sustainable" is misleading (Thrupp, 1989). It is erroneous to think of indigenous planning as an uncontaminated, pure knowledge system. Indigenous planning cannot be assumed to automatically offer a long-term solution to production issues in underdeveloped areas (Briggs, 2005)

Similar to scientific knowledge, occasionally the knowledge that local people rely on is incorrect or even dangerous. Practices based on incorrect knowledge, flawed experimentation, or false beliefs, for instance, might be risky. When the environment degrades, some Indigenous planning systems that were once well-adapted and efficient become inappropriate (Thrupp, 1989). Although Indigenous planning systems are somewhat adaptable to ecological change, when change is very rapid or drastic, the knowledge may become inappropriate and even harmful (Sillitoe, 1998). There has evolved a perception of indigenous planning as static and ageless, seemingly locked in time, possibly as a result of its romanticization (Bebbington, 1993, Kalland, 2000). Such depictions are detrimental because they convey a picture of a rigid traditional community.

The tendency of indigenous planning to be firmly ingrained in the community in which it has been formed makes it a crucial component, and as such, it must be viewed in its economic, political, and cultural settings (Bebbington, 1993; Davies, 1994). This is a challenge for development practice since it makes it challenging to apply indigenous planning broadly across diverse geographic, cultural, and economic circumstances (Briggs, 2005).

In spite of the fact that indigenous planning is sometimes offered as a legitimate and pertinent alternative to conventional planning, it should actually be viewed as something more subtle, pragmatic, and versatile, even tentative, extremely modifiable, and fluid. It will therefore be up to advocates of indigenous planning to decide whether to make the argument for indigenous planning as a radical alternative to western planning and knowledge or whether to work toward integrating it into mainstream planning practice (Briggs, 2005)

2.8 Contribution of theoretical framework to planning theory

The theoretical framework in this study, as discussed previously, covers the concepts of degrowth, Sustainable Development, Indigenous planning and their relationships with each other. Critically defining concepts is important to highlight studies relevant to this research. First, indigenous planning attempts to understand conservation from a spatial perspective. During the planning process, planners often have to deal with emotionally challenging circumstances , such as political conflicts and interpersonal challenges based on communicative rationality (Allmendinger and Tewdwr Jones, 2002). To emphasize, Horlings (2015) introduced an interdisciplinary approach named “value oriented approach” to put the significance of local people’s involvement in the planning processes. Based on this explanation, emotions developed through local worldview and knowledge are inevitable during any decision-making process. Planners have to consider this element in daily planning practice. Second, Moore

(2021) emphasizes again the importance of citizen participation, seeing from the concept of place attachment in planning practice, similar to the research by Horling (2015). Manzo and Perkins (2006) also agreed that place meaning and attachment play prominent roles in planning processes. According to Woodley (2004), planners are mostly outsiders and must move from the expressive side to the reflective side of planning (Dobbins, 2009) by using the Forester's metaphor "making sense together" which will provide a more in depth insight into what the local people appreciate, feel responsible for and are willing to commit to in the context of their place (Horlings, 2015).

2.9 Conceptual framework

The below conceptual model displays 3 fundamental concepts and their relationships with each other. The feedback loop in this conceptual model can be seen from how the arrows move downward in linear and ends at the outcome (degrowth) First, indigenous planning setting based on the theoretical perspective (see chapter two) is made up of three main components: local actors/ institutions, worldview and knowledge. These three components result in the formulation and establishment of practices, behaviors and regulations which have both direct and indirect effect on degrowth hence conservation.

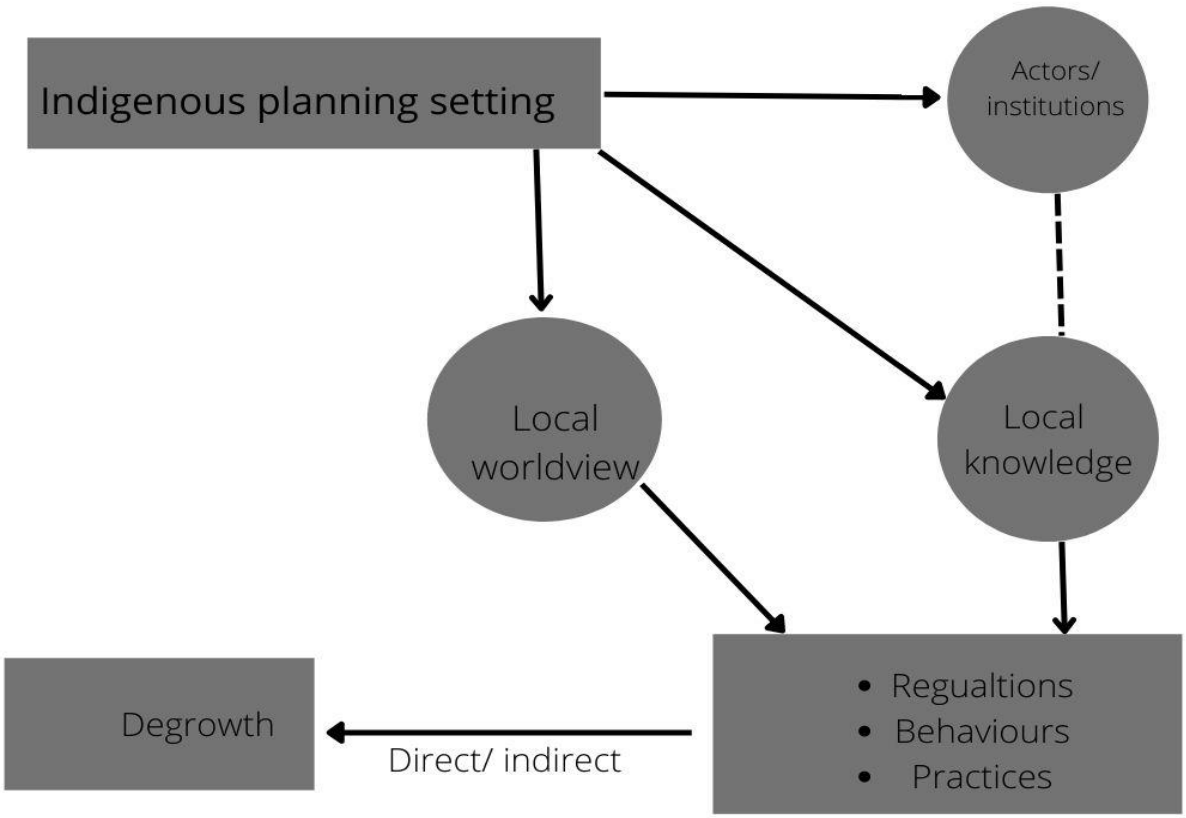

Figure 3: Conceptual framework

Source: Author (2022)

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3. METHODOLOGY

This chapter gives an overview of how the research was carried out. Following that, a description of the research methodologies used to address the research question is provided. In addition, the data collection and analysis are discussed in this chapter.

3.1 Introduction

Two types of data collecting can be separated in academic research: qualitative and quantitative approaches (Clifford, French and Valentine 2010). Whereas quantitative research is defined by the application of statistics or numerical methods, qualitative research focuses on the exploration of meanings and values via the examination of a limited number of in-depth situations (Clifford et al., 2010). According to O' Leary (2010), it is false that quantitative designs simply ignore language whereas qualitative designs have no room for numbers. According to O' Leary (2010), quantitative research is only a coding system for qualitative research, and therefore avoiding numbers in qualitative research is absurd. Qualitative research, according to Hox and Boeije (2005), focuses primarily on how people assign meaning to their surroundings and what behavior arises from this. Second, research methodologies that can analyze people's perspectives are applied. Third, the study's goal is to characterize and, if feasible, explain the phenomenon (Hox and Boeije, 2005). The central research question for this study is:

What is the role indigenous planning on degrowth in Ghana?

It is apparent from the research question that this research is qualitative. The goal of this study isn't to come up with new hypotheses or to evaluate existing ones. Because the research consists of a small number of examples that are thoroughly examined, it is analytic and descriptive in character. The goal of this research is to produce descriptive analysis (Henning, Van Rensburg, and Smith 2004)

3.2 Case Selection and Justification

Although the study is about Ghana, a case study design was used in the research. The unit of analysis was indigenous knowledge system and its role in the conservation of resources (degrowth). Due to a time constraint, the researcher separated Ghana's ecological zones into three primary segments based on the preponderance of ethnic groups who live there based on the climatic map of Bessah et al (2022).

1. Coastal locations, where the Ewes, Fante, and Ga Adangbes live in large numbers.

2. The Akans live in the majority of the forest lands

3.Savannah lands – Savannah lands are inhabited by Northerners.

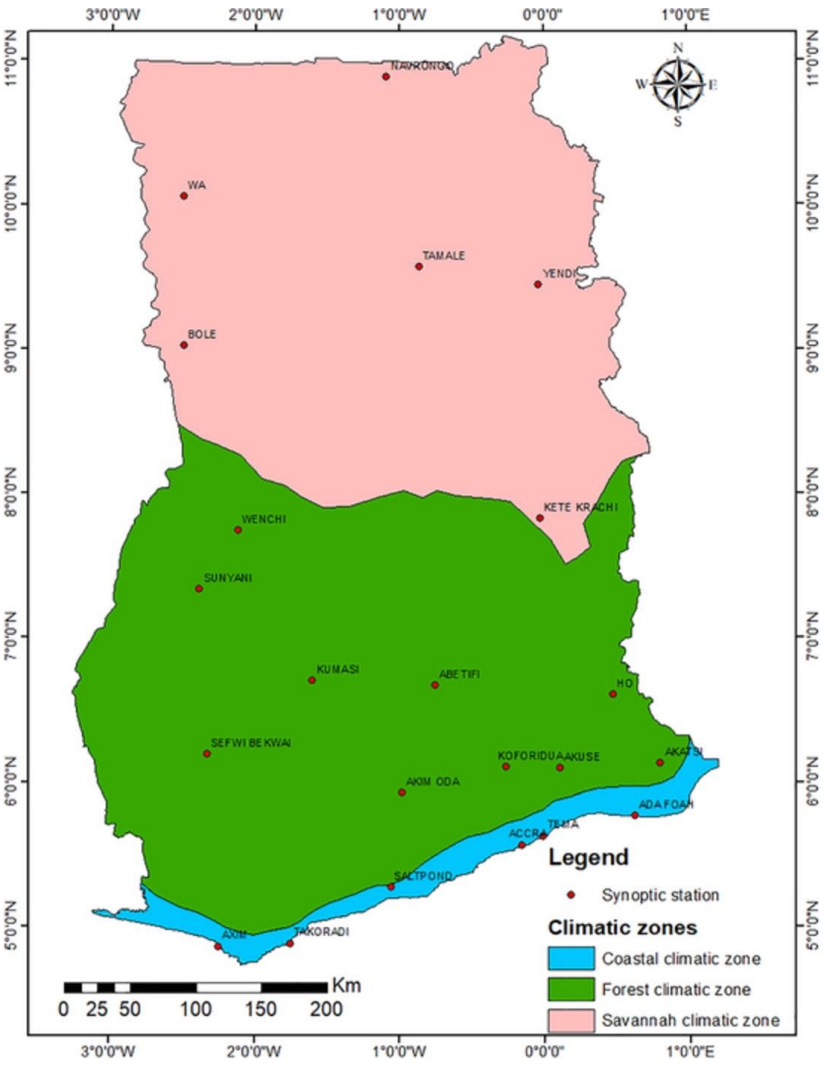

Figure 4: Map showing the three main climatic Zones in Ghana

Source: Bessah et al (2022)

The researcher then chose one traditional locale from each of the Zones on purpose. Any local territory led by a paramount chief is referred to as a traditional area. Indigenous knowledge, traditional governance systems, and other cultural realities that have affected natural resource protection were used to choose the research areas (traditional areas). The researcher chose the Eguafo traditional area in the coastline areas, the Asante Bekwai traditional area in the forest lands, and the Tallensi traditional area in the Savannah lands. The data were collected in the headquarters of the traditional areas.

Table 2 : Ecological Zones and the study area

Ecological Zones	Traditional areas	Study area
Coastal areas	Eguafo traditional area	Elimina
Forest lands	Asante Bekwai Traditional area	Bekwai
Savannah Lands	Tallensi traditional area	Gbeogo

3.3 Research Design

Scientific research employs a variety of methodologies, as previously stated. It is possible to do research using secondary data, such as policy documents and databases, according to Clifford et al., (2010). Furthermore, employing primary data has the advantage of allowing researchers to collect information for the specific aims of their research. In essence, the information gathered through primary data research is tailored to the study questions (Clifford et al., 2010). According to Baarda (2010), using both primary and secondary sources increases the credibility of a study. Furthermore, mixed methods research might provide a more comprehensive picture of the situation (Yin, 2014). As a result, primary and secondary data are used in this study. Qualitative semi structured interviews serve as the primary source of information and Academia, Google scholar, Research gate, and Science direct will be used to find journals, theses, and books relevant to the topic which made up the secondary data.

3.3.1 Literature review

The answers to sub questions one and two are based on scientific literature. This material was used to learn about planning, sustainability, culture, and the relationships between these concepts. A literature review, according to Oliver (2012), is built on multiple theories and concepts that must be contrasted, resulting in a theoretical framework. Finding relevant papers, critically assessing them, and describing what you discovered are all part of writing a literature review (Oliver, 2012). A good literature review, according to Oliver (2012), does not just summarize sources. It examines and evaluates to provide a clear picture of the current state of knowledge on the topic.

The credibility of sources is determined by reading the abstracts of numerous papers critically. When an article was found to be trustworthy and informative, it was stored on the computer and organized by topic. As a result, the researcher will be able to simply consult publications again (Oliver, 2012). Reading the introduction, discussion, and conclusion of the literature has also been used to analyze the identification of disagreements and gaps.

3.3.2 Interviews

Interviews are used to learn how participants in a study feel, think, and know about certain topics, events, or people (Longhurst, 2010). There is a differentiation between organized, semi-structured, and unstructured interviews, according to Clifford et al. (2010). A semi-structured interview is a verbal exchange in which the interviewer uses questions to try to elicit information from another individual. Because of two factors, semi-structured interviews were used in this study. First, while the interviewer prepares a list of predefined questions, semi-structured interviews are conducted in a conversational style, allowing participants to explore issues that are significant to them (Longhurst, 2010). Second, according to Clifford et al. (2010), this type of interviewing has the advantage of allowing the researcher to obtain data that is

relevant to his or her goals. This kind of interviewing, on the other hand, could show up in unexpected and fascinating talks. An interview guide is created with questions based on the literature review and research questions in a semi-structured interview. Under each research question, there are probes to delve deeper into the issue.

Interviews with conventional opinion leaders were done in-depth. The information was gathered through key informant interviews. The study employed the Key informant approach to gather relevant data from knowledgeable individuals with in-depth opinions on indigenous development processes and ethics. 15 in-depth interviews were done in total, five in each community. These interviews lasted anything from 45 to 60 minutes each. They were all recorded on audio and later transcribed for additional study. The interviews were conducted in English, Twi and Ewe by a group of qualified researchers in Ghana.

3.4 Sampling procedures

The traditional areas were chosen using a process called purposive sampling. Purposive sampling is a non-probability method that focuses on picking specific categories of respondents who are relevant to the study's goals (Leedy and Ormrod, 2005). As a result, traditional areas that were known to continue traditional religious activities were picked. The research sites and communities were chosen based on geographical and operational trip considerations, as well as interviewee availability. The key informant and semi-structured interviews with traditional and community development leaders were conducted using the same sampling strategy. Traditional leaders are skinned (installed traditional leaders using animal skin as a stool) or enstooled (men and women) from royal families, whereas community development leaders are appointed or nominated individuals in charge of community development efforts in indigenous communities.

3.5 Data analysis

The study used a variety of data analysis techniques. The initial study was crucial in constructing a narrative account of indigenous knowledge in the three traditional areas and its role in natural resource conservation (degrowth). The data was analyzed using thematic analysis , which entailed discovering themes that emerge from the data rather than starting with hypothesized categories (Corbin and Strauss, 1990; Bryman, 2008). To ensure that data acquired from diverse sources was correct and to preserve some level of consistency, a triangulation approach was adopted (Bengtsson, 2016). Pseudo Variables were employed to guarantee participant confidentiality.

Table 3: A table showing research participant and Pseudo variables for confidentiality

Participants	Pseudo names
Traditional leader (Egua traditional area)	TlE
Traditional leader (Asante Bekwai)	TlA
Traditional leader (Tallensi)	TlT
Community leaders (Eguafo)	ClE1, ClE2, ClE3, ClE4, ClE5
Community leader (Asante Bekwai)	ClA1, ClA2,ClA3, ClA4 ClA5
Community leader (Tallensi)	ClT1, ClT2, ClT3, ClT4, ClT5

3.6 Validity and Reliability

Controllability and researcher independence have been highlighted as flaws in the case study approach. When compared to quantitative methodologies, this is due to the researcher's large degree of freedom when doing research (Verschuren, 2003). The researcher, on the other hand, overcomes these shortcomings in a number of ways. To begin, the researcher conducted a literature review on the topic, which aided in the theoretical formulation of the phenomenon. The ideas were defined in terms of the study's context (stipulative definitions), effectively limiting and narrowing the inquiry. This reduced the possibility of gathering data that was irrelevant to the research question. Internal validity was the goal of the study. Data was gathered from a variety of trustworthy sources, using a variety of complementary methodologies. Data from numerous sources was triangulated in order to provide consistency, validity, and all-encompassing knowledge on the topics under research.

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4. RESULTS

4.1. Introduction

Empirical results are elaborated below to support answering the research questions. Further explanation will be gathered from interview results (the process of qualitative data analysis explained in chapters 3.5) particularly linking indigenous planning systems to conservation hence degrowth. Here, a general interpretation of the semi structured interview will be included to better understand the relationship between indigenous people, their environment and degrowth (Conservation). Moreover, the comparison between data and analysis will be elaborated on in the last section of this chapter .

4.2 Study area

Despite the fact that the study is about Ghana, three traditional areas were used as case studies. Traditional areas in Ghana are the traditional administrative borders for Traditional Leaders, and all land within the bounds of the Traditional Area is subject to the Traditional Leaders' jurisdiction. Despite the fact that all Traditional Leaders represent community leadership and oversight in matters relating to land and community governance, there are times when land and community governance oversight is split among different leaders. Some Traditional Leaders are known as Paramount Chiefs, while others are known as Overlords, Family Heads, or Clan Heads.

4.2.1 Eguafo traditional area

The Eguafo traditional territory lies in Ghana's Central region, which is bordered to the north by the Ashanti and Eastern regions, to the west by the Western region, to the east by the Greater Accra region, and to the south by the Gulf of Guinea. Elimina is the traditional area's headquarters and the location where data was gathered. Elmina is a fishing port located on Ghana's south coast in West Africa. It is noted for its beaches as well as its significance in the previous transatlantic slave trade, as it is home to Ghana's first castle.

4.2.2 Asante Bekwai traditional area

The Asante Bekwai traditional area is one of 35 traditional areas in Ghana's Ashanti Region. The traditional territory of Bekwai is found in the southern section of the Ashanti Region. The traditional region is shared with Bosomtwe District to the north, Adansi North District to the south, Bosome-Freho District to the east, and Amansie Central District and Amansie West District to the west. The traditional Bekwai territory is located between latitudes 6 00N and 6 30N, and longitudes 100W and 135W. The area has a total land area of 535.2 square kilometers, accounting for 2.2 percent of the region's total land area (Ashanti). As a result, the population density in the Bekwai traditional area is 220.5 persons per square kilometer. Asante Bekwai is an agricultural mining town and the capital of the Bekwai Municipality District. The population of the town is currently 14, 391 people. Asantes make up 89 percent of the population, with Ewes, Guans, Mande, Gurma, Grusi, and Mole Dagbani accounting for the remaining 11 percent. Residents of Asante Bekwai are known for their agricultural activities, cultivating crops such as oil palm, maize, cassava, pepper, garden egg, cocoa, citrus, and cocoyam. There were two large forest reserves in the Bekwai traditional area where the research was conducted. Bosumtwe forest reserve and Asantemanso forest reserve (Essumeja) (Abono). The Asante's

indigenous knowledge, including taboos, cosmological beliefs, and the totemic system, has helped to safeguard these forest regions.

4.2.3 Tallensi traditional area

The Tallensi Traditional Area is a northern Ghanaian region where the Tallensi people live. It's mostly made up of open savanna. The Tongo areas' topography is characterized by scattered rock outcrops and upland slopes, as well as gently undulating plains with gentle slopes ranging from 10 to 50 gradients. The soil in the district is primarily composed of granite rocks, and it is shallow, low in soil fertility, weak, with low organic matter content, and predominantly coarse in texture. In the district, erosion is a problem. Soils in valley locations range from sandy loams to saline clays. They have high natural fertility, but they are more difficult to cultivate and are prone to seasonal flooding and water logging. The White Volta and its tributaries are the district's primary rivers. Although the land has been deforested, sacred groves, which are remnants of the biosphere, have survived.

4.3. Beliefs and nature

Unlike Christianity, which teaches that man is to govern and subdue the world, the 15 traditional leaders in the three study areas saw the natural environment as more than just a resource to be exploited for profit; they saw it as a self-sufficient and deserving existence in and of itself. According to the respondents, indigenous Ghanaians believe in a plethora of spirits that reside everywhere in the environment, which the Akan refer to as Sasa, and that these spirits possess great powers that can be employed to benefit or harm humans. The spiritual realm is also manifested in the rocks, animals, and plants, according to respondents.This means that wild animals and plants are revered and feared at the same time. It is clear that religion is not just an important component of the lives of Ghana's traditional societies, but that nature is also an important part of this religion.

4.4 Objectives reported to be Sasa-infested

The respondents believe that Sasa is present in many plants, shrubs, and animals, as stated in the opening section of this chapter, and they are cautious in their interactions with these things. Local notions and interpretations of nature are intricately linked with the cultural, economic, and religious lives of Ghana's ethnic groupings and tribes. Rivers, trees, and animals are revered as sources of power by the locals, who believe they can indeed be gods or even have the potential to become gods. Rivers are revered as great gods, and river-gods are regarded as the most essential of all the mediating gods connecting man and the Sky God.

4.4.1 Trees

The plant Odum (Chlorophora excelsa) is said to have a spirit. The odum is revered as a god, according to the respondents. They went on to say that the Odum can transform into a human being at night and visit a village king, informing him of all illicit actions in the society. As indicated by one respondent:

> *A ruler is meant to be aware of everything that is going on in his or her community. One of the sources of information is the odum tree. As a result, the Asantes plant the tree on the edge of towns* (CIA2, 2022)

According to one respondent, the Costus afer, also known locally as Sumee, is thought to have the ability to drive evil spirits out of a village:

> *When a village is swept by sickness, the sumee and debris are stacked on the outskirts. It is thought that by performing this ritual, the evil spirits that had been tormenting the hamlet with the disease would have been driven away (CIA3, 2022)*

Some trees are also valued for providing spiritual protection to individuals or families. The Alstonia boonei was once extensively utilized as an altar to God in practically every Ashanti compound, from whom they sought spiritual protection.

4.4.2 Water bodies

In Ghana, there are ideas that the bulk of water bodies are deities. Rivers are said to take on the role of god, reigning over the state's different duties. This is a popular practice among the Akans (Eguafo and Bekwai), who safeguard and worship them at many locations along their routes. This custom has been employed to conserve the headwaters of various river bodies, particularly those that provided drinkable water to a community or a group of villages. The lake Bosumtwe and the Tano River are likewise cherished and protected as sources of life and fertility; childless women bathe in these waters in the hopes of becoming pregnant.

4.4.3 Land

The study's findings also revealed that most Ghanaian tribes see land as sacred and cherish it as the source of life. Land is regarded to belong to the living, the dead, and the unborn generations among the Akans. In actuality, the living are thought to be just caretakers of the land on behalf of the two other parties, and people who mismanage or misappropriate land are thought to be punished by the ancestors, who are thought to be deeply interested in topics relating to land, as demonstrated by the respondents:

> *The true owners of the lands in this area are our forefathers. We, the living, are merely caregivers. Lands are viewed as a common resource that is managed by chiefs, who are referred to as custodians. The chiefs, we feel, act as a link between us and our forefathers. Even the constitution recognizes chiefs as stewards of the country's territory(CLE2, 2022)*

Ownership and use rights are carefully restricted in the tallensi traditional territory by clan and kinship ties, as well as the moral and ritual ideals of the ancestor religion and earth cult. As a result, land sales are prohibited, and individuals may only get land through their family heads or clan chiefs (CLT1, 2022)

In Ghana, indigenous knowledge holds that the earth is a woman and a deity known as Asase Yaa. Yaa is an Akan name for a female who was born on a Thursday. Traditional agricultural practices in Akan were created with the belief in and respect for Asase Yaa, allowing her to continue to perform a motherly role while also enhancing biodiversity.

4.4.4 Forest reserve/ sacred groves

Forests are perceived generally amongst most tribes in Ghana to be the abode of spirits such as dwarfs.Forests are said to be the home of spirits such as dwarfs by the majority of Ghana's tribes. In the Tallensi traditional area, sacred grooves are areas where sasa is thought to exist. Each sacred grove has a name and a story about how it came to be. Folklore has it that groves began because an ancestor died there, had good luck there, or was the first to establish on the grove site. The holy groves, which are presided over by the Ndaan, represent the community's spiritual hub. The Ndaan, who acts as a link between the physical and spiritual worlds, is chosen from the local community to perform rites for devotees' spiritual needs.

Vegetation is grouped into three basic types among the Akan (Asante Bekwai), who live mostly in the country's forest belt: forest, savanna, and transition between forest land and savannah. According to the answers, the forest is the most important culturally, economically, and ecologically. Forest trees, particularly large trees, are thought to possess spiritual powers that can be harnessed for a variety of purposes. The respondents nominated two key forest reserves in the Asante Bekwai traditional area: Asantemanso and Bosumtwe forest reserves. They said that indigenous knowledge, such as taboos, cosmological beliefs, and the totemic system, had

contributed to the preservation of these forest areas. The Oyoko clan, which has the Falcon as its symbol, is represented by the inhabitants of Asante Bekwai Traditional Area. As a result, it is not supposed to be slain alongside other similar birds in the same family. Adopting this animal as its symbol seeks to represent the magnificent traits of the Asantes such as focus, power, resolve to succeed, strength, and supremacy. This explains why there are so many birds in the Bekwai traditional area. Hunters should avoid killing these birds in particular.

4.5 Cultural traditions

This research discovered prohibitive practices (environmental taboos and social taboos) and regulatory conventions in the study areas for resource conservation and environmental protection. The difference between prohibitive practices (taboos) and regulatory conventions is that breaking taboos results in divine punishment, whereas breaking regulatory conventions communicates a message of poor grove management. Using the classification of Colding and Folke (2001) (see section 2.7, paragraph 3), the study identified three main prohibitive taboos : Method taboo, Habitat taboos and temporal taboos that helped in the conservation of resources within the three traditional areas.

4.6 Practices that are prohibited

The spiritual connections connected with sacred sites, as well as the notion that they symbolize the houses of the gods, force people to revere and safeguard the natural environment, particularly at these sites, according to the 15 respondents. The indigenous Ghanaians believe that these spirits look for the natural environment, hence permission is requested before touching trees, plants, river bodies, or animals.

4.6.1 Method taboos

Respondents described a number of other taboos restricting harvesting of resources and farming. Using toxic chemicals on fish in some rivers, for example, is prohibited because fish are typically seen as offspring of the river deity, defending the rivers from pollution. The Ashanti regard Lake Bosomtwi in the Asante Bekwai traditional territory as sacred, and fishing is only permitted using specified methods, like wooden boards.

Clearing and using sites next to water sources for cultivation and logging is also prohibited. There are taboos against clearing vegetation for agriculture all the way up to the banks of streams and rivers. Farmers were instructed to leave a 30-meter strip of land on both sides of the water sources that should not be touched, according to the reply. Women who used to frequent streams and rivers are forbidden to do so while using black marijuana and during their menstrual cycle. Women are considered dirty during this time, according to the responses, and may anger the river goddess, who is revered as holy and pure. Rivers and streams were also mentioned by the respondents as sources of water.

4.6.2 Habitat taboos

These sacred natural locations are one of the most important techniques used by Ghana's indigenous people to promote environmental protection by limiting land conversion to agriculture and prohibiting natural resource gathering. Forests are perceived generally amongst most tribes in Ghana to be the abode of spirits such as dwarfs. Forests are said to be the home of spirits such as dwarfs by the majority of Ghana's tribes. In the Tallensi traditional area, sacred grooves are areas where sasa is thought to exist. Each sacred grove has a name and a story about how it came to be. Folklore has it that groves began because an ancestor died there, had good luck there, or was the first to establish on the grove site. The holy groves, which are presided over by the Ndaan, represent the community's spiritual hub. The Ndaan, who acts as a link

between the physical and spiritual worlds, is chosen from the local community to perform rites for devotees' spiritual needs.

4.6.3 Temporal taboos

The findings also found that there are taboos in place that limit residents from using resources at a specific moment or over a period of time. The Eguafo traditional territory, a coastal region in Ghana, has taboo days when no fishing is allowed. Several coastal towns consider Tuesday to be the sacred day of the sea god. This is supposed to have the effect of providing a day of rest for both fishermen and fished, as well as, as indicated above for farming groups, likely helping communal solidarity if the rest day is observed. This period of relaxation corresponds to the time when fish lay their eggs. On Thursday, the Asante Bekwai traditional area's belief in mother earth (Asase Yaa) precluded farming. People believe that this will allow Asase Yaa to rest, safeguard the land, and provide them with more food. The respondent made this point quite clearly:

> *This is a coastline location, as you are aware. Tuesdays are forbidden for fishing, and fishing is also prohibited for several months so that the river goddess can rest (TLE, 2022).*
>
> *Even though farming is our primary source of income, we avoid going to the farm on thursday days and seasons so that the gods can protect the land and provide us with extra food (*ClT4, 2022)

According to the respondents, these taboos have religious origins, requiring people to closely follow particular laws in order to avoid the gods' wrath. They benefit biodiversity conservation directly by protecting or restricting the harvesting of certain living things, preserving quality of the water, and enabling natural resources to restock. Various shrines are also built by the

community to protect woodland groves and water features. Shrine sites are built in their communities for individual spirits (particularly dead spirits) who reside in natural places and items such as rivers, forests, rocks, mountains, and the sea.

> *locals logged enormous amounts of timber and other flora species in the forest reserve at night. Strangely, some of the perpetrators were discovered dead one morning. We attributed it to the ancestors' anger being released. As a result, the surviving woodland has remained undisturbed (* ClA1, 2022)

> *A woman in this traditional area experienced swellings on her limbs and was referred to a hospital and a herbalist for treatment, but neither was successful. The family sought the advice of a soothsayer, who told them that she had taken wood from the Kpalyeong forest in Sakoti (which she admitted) and that the wood should be returned and a sacrifice made in exchange for her recovery. They transported all the firewood to the grove and performed a sheep sacrifice because all the wood in the house had been stacked together and they could not really determine which was from the grove. The swellings began to fade after three days, and she was able to return to work (CLT2, 2022)*

4.6.4 Regulatory practices

While traditional societies participate in these acts for religious reasons, they also appear to place a high value on other cultural services provided by nature, such as aesthetic benefits. Respondents specifically stated that they adore the physical beauty of trees, blossoming flowers, the calmness and coolness of rivers, the serenity of forests and groves, as well as the creatures that dwell in them, and that they would go to great lengths to safeguard them. The extent to which some areas of the surrounding countryside have remained unaffected by development was widely mentioned as a key aspect of its worth. Although these aesthetic, recreational, and

physiological benefits gained from the natural environment are not directly tied to religion, they can help to improve spirituality. Sacred natural locations are also regarded to protect people's spiritual bonds with their surroundings:

> *The lush forests were areas where the gods provided protection to our ancestors. As a result, sacred locations are an important component of the community's cultural past and give a sense of place, or affinity to that location (CLT, 3)*

These cultural benefits including natural setting, place identity, cultural identity, wellness, pleasure, and aesthetic benefits may assist in preservation by giving societies an additional reason to safeguard the environment.

4.7 Effect of social change

Despite the prevalence of significant socio-cultural practices aimed at safeguarding the natural environment, respondents noted that development pressures such as mining, road construction, and stone quarrying had had a negative influence on many cultural sites and nature reserves in Ghana in recent years. According to the beliefs of Ghana's indigenous people, all human activities at sacred areas should be limited. Respondents report that many previously uncultivated or sacred sites are becoming increasingly threatened as a result of increased development pressures and a reduction in appreciation for traditional religious practices. For example, mining has taken place near waterways that have traditionally been regarded as sacred by indigenous peoples. Furthermore, respondents stated that the growing popularity of other religions, such as Christianity, has weakened the power of social taboos that once protected sacred locations :

> *Despite the fact that traditional Tallensi society is gradually changing in terms of exposure to western education, multiple faiths, and migration, residents still see the*

groves as the spiritual heart of their villages, protecting them from destruction (CLT1, 2022)

The indigenous people's exposure to imported religions, formal education, and greater migration have all had an impact on the forest reserves in this traditional area (CLA2, 2022)

The rate at which things are going, we have to go back to how things were done in the past else we will leave nothing behind for the future generation. These traditional knowledge systems should not be dismissed as superstitious foolishness, but rather should be included into modern conservation laws and procedures to make them easier to apply for local people. (CLE4, 2022)

4.8 Comparative analysis

4.8.1 Benefits of indigenous planning

The study's findings demonstrated that although there are taboos protecting resources against overexploitation in terms of habitat, temporal and methods taboos in the study areas, these restrictions are specific to the traditional areas and depend on the kinds of resources that are available, the types of land cover that is present, and the belief systems that exist there. The three study regions were chosen from three zones with various land cover and features, as was previously discussed in the methodology (see chapter three, case selection). Because they are location-based techniques for conservation, the prohibitive practices or taboos in one traditional area cannot be upheld or successful in another.

The belief systems controlling them differ even in traditional areas where there exist identical vegetative cover. In the forest zone (Asante Bekwai traditional area), for example, the prohibitive practices are primarily geared towards the forest reserves, and in the coastal area

(Eguafo traditional area), the prohibitive practices are geared toward the sea. In the Tallensi traditional area, however, the prohibitive practices are mainly oriented towards sacred groves. The similarities among the indigenous planning systems in the traditional areas is that they are geared towards conservation and they have a direct impact on conservation hence degrowth.

4.8.2 Risks

According to the study, totemism is a conservation method meant to foster harmony between tribal people and the environment. The plants and animals from which their totems were created are revered greatly by people. They are forbidden from harming, consuming, or killing resources from their own totem animal or plant .This revealed that while some species are viewed as relatively more valuable than others in terms of conservation and cultural significance, there is still a belief system in the traditional area that believes that all plants, animals, and water bodies have spirits dwelling in them. For instance, Asante Bekwai traditional area residents represent the Oyoko clan, which has the falcon as its totem. Therefore, it is forbidden to kill the falcon along with other members of its family who are also like the falcon . However, because it has no cultural significance in other traditional areas in Ghana, it is permissible to slaughter these birds in other traditional areas. Pythons are also a totem for the Tallensi traditional area since it is thought that after death, clan elders and caretakers transform into them.The pythons, however, are killed in other traditional areas since they are thought to pose a threat to other inhabitants.

On the other hand, forests are perceived generally amongst most tribes in Ghana to be the abode of spirits. Forests are said to be the home of spirits such as dwarfs by the majority of Ghana's tribes. This is a strong believe by the people of Asante Bekwai traditional area who are located in the forest belt of Ghana while in the Tallensi traditional area located in the savannah zone where there are lush green grasses and few wooded areas with no forests, sacred groves are

believed to be the homes of spirits. These findings demonstrate that, despite their value, indigenous planning systems are imperfect and cannot guarantee the conservation of all threatened species in the ecosystem . The study demonstrates that only resources that are valuable to the traditional areas are protected and conserved while others that are not really valuable or having any cultural significance are at the risk of becoming endangered species.

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5. DISCUSSION

5.1 Introduction

This section covers the discussions of the results linking it to the literature in chapter two. This section also covers the conceptualisation of the result. Finally, the conclusion explains the closing remarks, research limitations, and future research.

5.2 Benefits of indigenous planning on degrowth

This study revealed that socio-cultural traditions can be effective in preventing the overexploitation of resources for economic pursuit confirming the arguments of previous ethnographic studies and research on environmental issues in the realm of religion and ecology (see Materer et al., 2002, Ajani et al., 2013, Woodley, 2004). Specifically, it revealed that socio-cultural activities driven by religious and spiritual beliefs have both direct and indirect benefits on conservation of resources hence degrowth. The ban of resource extraction and pollution through societal taboos are direct benefits. This study identified habitat taboos, which restrict access and use of resources in a specific location, such as sacred groves, method taboos, which restrict resource extraction methods, such as prohibiting artificial chemicals for fishing, and temporal taboos, which prohibit resource use at specific times, such as certain months when fishing is prohibited.

Since it was outside the scope of the study, the researcher did not expressly quantify conservation or ecological consequences. However, based on the activities indicated by respondents and the benefits discovered in prior studies, the study is able to infer possible conservation benefits and its role in degrowth . Rather than assessing the ecological results of these conservation measures, the study looked at the human-nature relationship in order to better understand the mechanisms that lead to conservation practices which is called value - oriented or symbolic approach in mainstream planning (Horlings, 2015).

This study, on the other hand, demonstrates that environmental conservation is not merely a result of socio-cultural behaviors, but also an important process in communities' relationships with their surroundings. The study found that without this connection, traditional societies' indigenous planning system (norms, beliefs, and taboos) are at risk of degeneration. From a conservation standpoint, the shift in this connection suggests a loss of practices that aid in the preservation of natural resources.

Traditional sacred sites in Ghana are under threat, according to this study, from economic growth and activities such as mining, road construction, and stone quarrying, as well as the strong influence of other religions. Previous studies have described such socioeconomic and cultural shifts as risks to sacred groves and local resources . Many unique features of particular geographies are under threat of being lost, despite the fact that they are highly cherished by communities. Protecting such locations, according to this study, may not only help to conserve particular sites, but also contribute to the protection of the broader environment in which traditional societies live by assisting in the preservation of traditional religious beliefs. Stress relief and relaxation for example, visiting sacred water bodies are among the various cultural goods and services that traditional Ghanaian people obtain from nature, according to the study analysis, as does aesthetic appreciation of the beautiful, natural surroundings. The religious and spiritual ideas linked with nature, however, appeared to be the most substantial cultural benefits.

Figure 5 depicts the research's conceptualization of this relationship. The study revealed that the indigenous knowledge system, which includes customs, beliefs, and taboos, leads to certain socio-cultural activities that have direct or indirect conservation advantages. Unlike Christianity, which teaches that man is to rule and control the world, indigenous Ghanaian societies consider the natural environment as more than a resource to be exploited for profit; they see it as a self-sufficient and deserving existence in and of itself, according to the study. Indigenous Ghanaians believe in a profusion of spirits known as Sasa that live everywhere in the environment, and that these spirits have immense powers that may be used to help or harm mankind. This view is disintegrating at a faster rate, according to the study, due to the arrival of Christianity, formal education, and migration. As a result, natural resources that were once conserved have been overexploited.

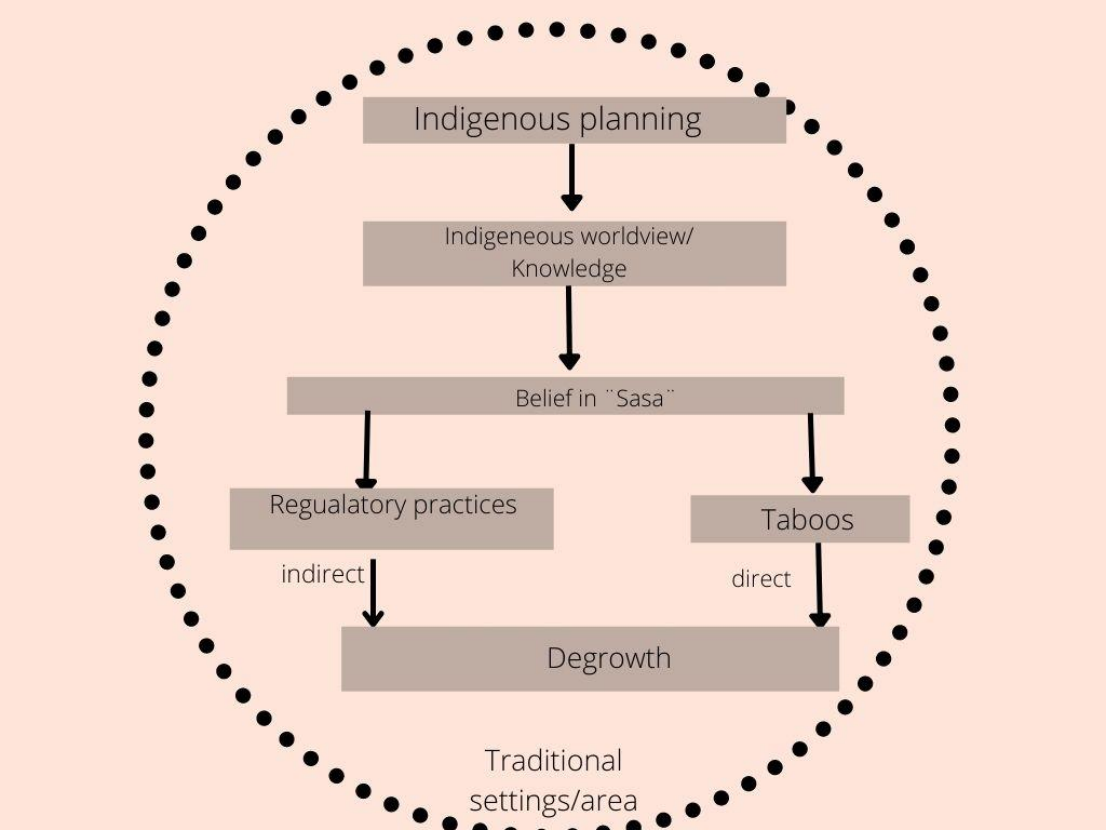

Figure 5: Summarization of results

Author (2022)

5.3 Risks of indigenous planning system

In earlier studies, indigenous planning was generally seen as a straightforward strategy with no issues. The results of the study, however, demonstrated that neither mainstream nor indigenous planning are perfect systems that can solve all sustainability challenges. According to the study, Ghana's traditional areas' indigenous planning systems are based on the areas' history, religious beliefs, and geographical features. The study also revealed that indigenous planning is context specific. The systems existing in the three traditional areas though closely related are different and unique to each traditional area based on the nature of the land and resources available. This makes it difficult to apply it in development practices, confirming the argument of Briggs (2005) that it is challenging to apply indigenous planning broadly across diverse geographic, cultural, and economic circumstances. The study also found that one risk of indigenous planning systems is that they are stagnant and rigid because they are overvalued, which paints a picture of strict traditional communities and supports the claims made by Bebbington (1993) and Kalland (2000).

According to Thrupp (1989), through overhunting and over cultivating, indigenous people have also broken environmental rules. The study's findings clearly demonstrated this. The study's findings showed that, despite widespread belief that some spirits reside in plants, animals, and water bodies(ecological systems), some of these ecological systems are more significant than others in terms of conservation and cultural value. This is exemplified by totemism, a belief system where a plant or animal is believed to interact with a particular kin group or a certain person and act as their emblem or symbol. People hold a high regard for the plants and animals that served as their totems. The resources of their own totem animal or plant may not be harmed, eaten, or killed. This illustrates how other species that are not culturally significant to certain

places might suffer harm or be threatened. The results displayed examples of the falcon and python from the traditional areas of Asante Bekwai and Tallensi, respectively. This supports Thrupp (1989) claim that thinking about indigenous planning as always being "good," "right," or "sustainable" is false and that it cannot address all sustainability-related problems.

5.4 Spatial planning (insights)

Due to the fact that a sizable amount of the country's land is held under customary tenurial arrangements, traditional authorities (chiefs) in Ghana have an outsized influence on land management and spatial planning. National constitutional provisions that recognize chiefs as trustees of the land held under customary tenure grant traditional authorities' role in land management and spatial planning legal significance. The integration of behaviors and ideas influencing spatial structure can be characterized as spatial planning in the three traditional areas. The decision-making process for bettering the physical, social, and economic circumstances of the places were facilitated by indigenous planning based on indigenous knowledge, beliefs and practices.

Sasa, a traditional idea that some plants, animals, and water sources among others have souls and should be respected and treasured, is what defines the indigenous planning approach in Ghana. The primary tenet of sasa ideology is that nature has social, spiritual, and economic values in addition to its utility, and that these values help people feel a connection to, and give people a feeling of belonging in their surroundings. This idea directs spatial planning in Ghanaian local communities. The belief in spirit and gods which leads to the establishment of taboos by the traditional areas is considered irrational and superstitious by the scientific community. The importance of taboos in the practice of spatial planning is emphasized in Kimmerer's (2002) article on Traditional Ecological Knowledge and Science. He continued by saying that the effectiveness of programs that are clearly linked to conventional worldviews

depends on nonscientific knowledge. To accomplish their objectives in local communities, planners must take into account superstitious beliefs like these.

In planning theory, these superstitious beliefs can be traced to the value-oriented and symbolic approach by Horlings (2015), where individuals give locations based on values and beliefs a subjective cultural meaning. These values and beliefs have a geographic dimension and were developed as a result of people's interpretation of social processes through oral transmission. To put it another way, the indigenous planning methods used by these three groups are site-specific and will not work elsewhere. This is due to the fact that although the study was carried out in Ghana, the three traditional regions' residents do not share the same history, culture, or topography. Because they were created using these criteria (history, culture and topography) , the spatial planning procedures used in these traditional areas are context- and location-specific.

This method of spatial planning delivers "useful" information for place-based governance initiatives and sheds light on the motivations and dynamics that shape people's perceptions of a place. With tendencies toward self-organization, self-efficacy, and the participatory society, where individuals are expected to take responsibility for their surroundings, individually and collectively, such a value-oriented view on place-shaping will likely become increasingly relevant. According to Woodley (2004), planners are mostly outsiders in local communities and must move from the expressive side to the reflective side of planning (Dobbins, 2009) by using the Forester's metaphor "making sense together" which will provide a more in depth insight into what the local people appreciate, feel responsible for and are willing to commit to in the context of their place (Horlings, 2015)

5.5 Critical reflection

Western planning has often been portrayed as a villain in the African continent that needs to be replaced with indigenous planning. However, it is impossible to overthrow this system for a completely new one because this system is rooted in the judicial and legislative system of countries. It is also impossible to assume that indigenous planning system has all the solutions to the problems facing the African continents as shown by the results of this study. It is worthy to note that the African continents cannot be identified from the light of only indigenous knowledge because the history that brought her into contact with western values and principles cannot be ignored or erased. Contemporary African society is a unique product of the two (Indigenous and western values). Therefore, in order for African civilizations to experience real progress, it is necessary to build an ideology that may inspire the creation of institutions that are the result of the fusion or reconciliation of these two segments, or at least to view them as complementary to one another (Bamikole,2012).

According to Robbins (2021), degrowth will also disturb the planet so we must embrace new conditions for the planet to stay healthy. African society needs to develop and at the sametime these resources need to be conserved, as a result it is important for planners and local actors to operate in the pragmatic zone as shown in the diagram below. There is nothing fundamental about planning that compels practitioners to prioritize social fairness as a goal in addition to environmental preservation or economic growth. Instead, planners operate in the "planner's triangle," with sustainable development at its heart, which is the conflict that arises between these three fundamental goals. This core can only be roughly and indirectly reached after a prolonged period of confronting and resolving the tensions in the triangle (Campbell, 1996).

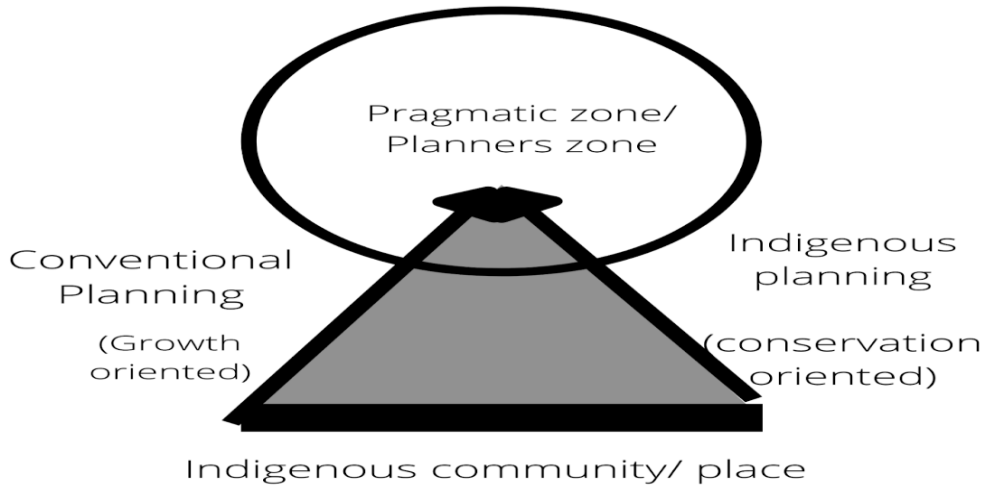

Figure 6: Proposed approach

Author (2022)

5.6 Conclusion

These sub-questions, taken together, provide an answer to the main study question: *What is the role of indigenous planning on degrowth in Ghana?* The findings revealed that indigenous planning systems, which are made up of taboos, beliefs, and norms, had both direct and indirect effects on resource conservation and thereby degrowth. The local populations were urged to observe the taboos by their faith in Sasa and the conventions of seeing nature not simply as a resource to be exploited but as something deserving of existence on its own. However, the study revealed that conservation efforts are guided by totemism. The study also revealed that indigenous planning process is context specific and unique. Stated differently, indigenous planning process is not a universal principle and cannot work or be successful everywhere

because indigenous people have developed these systems based on their histories, beliefs and topographies which vary from one group to another.

5.7 Recommendations

Some recommendations can be made based on these findings. First and foremost, research participants acknowledged that the indigenous knowledge system that had previously been employed to protect resources is progressively eroding and that it is necessary to regain it. This can be accomplished by incorporating viable indigenous knowledge into current biodiversity conservation policies and plans developed by conservation bodies, planners, and technical specialists. Cultural experts must be included in the team that develops conservation policies so that they can advise on which indigenous knowledge systems are viable in modern Ghanaian settings and demonstrate how the synergy of Western scientific knowledge and indigenous knowledge can be implemented effectively.

The past relationship between local people and nature, according to this study, served to enforce taboos and customs that aid to conserve resources and the environment. However, modernity, Christianity, and formal education have become the greatest opponents of traditional belief systems. As a result, religious leaders, such as pastors, priests, imams, traditional authorities, and others, are encouraged to preach more about sections of the Bible and other belief mediums that see human existence as inextricably linked to the natural environment, and thus the provision of other environmental services that people require for survival on Earth.

More importantly, the government should embrace a conscious effort to integrate modern laws and traditional norms and beliefs in natural resource conservation and management into a single policy framework enforceable by law through the Ghana Tourism Authority, District Assemblies, and the Ghana Museums and Monuments Board. Furthermore, by doing so, rural populations in areas where these resources are found will actively and voluntarily participate in

the management and conservation of natural resources for the benefit of both the living and the yet-to-be born.

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6. REFLECTION

6.1 Reflection on outcomes and research process

Looking back on the findings of this study, it is evident that indigenous knowledge is a large research area in the context of degrowth and resource conservation. Each facet of the indigenous knowledge system, such as method restrictive practices, regulatory practices, and the human-nature link, deserves its own research. Although the broad focus on many aspects of indigenous knowledge and conservation is one of the research's strengths, it is also a disadvantage because it provides less in-depth information about each area than would be expected when researching independently. The data collection was a challenge for me as a result I had to contact two researchers in Ghana to assist in the data collection. However, I contacted two interviews online.

The mixed-method approach used in this study is a strength. A comprehensive and in-depth picture of distinct indigenous knowledge systems and their function in conservation was constructed through literature searches and semi-structured interviews. Furthermore, focusing on indigenous knowledge systems in distinct traditional locations with different strategies and tactics was a fascinating perspective, indicating that while the research areas are located in Ghana, the people who live there have different lived experiences and belief systems. Because it was outside the scope of the study, the researcher did not expressly quantify conservation or ecological consequences. However, based on the activities indicated by respondents and the

benefits discovered in prior studies, the study is able to infer possible conservation benefits and its role in degrowth.

6.2. Recommendation for further research

The study's findings emphasized the necessity of governmental actors in integrating indigenous knowledge systems into conservation efforts. Governmental actors were not interviewed for this study. State actors may be especially relevant in countries where corruption is a major issue and when the state still wields the majority of power. This is a problem that still exists in many places of the world. As a result, more research is needed to gain a better understanding of these state actors' perspectives and how they could influence inclusive conservation outcomes

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Appendix 1: Interview Guide

Dear respondent,

Thank you for your participation! I am very grateful for your time to participate in this interview. Your contribution is essential for this research.

About the researcher

My name is Benolia Adjei -Cudjoe. I am a Ghanain but currently studying in the Netherlands. I am a Master's student in Society, Sustainability, and Planning at the Faculty of Spatial Sciences, University of Groningen and this research is conducted for thesis purposes. However, because I can make it to Ghana to collect the data myself, I have employed these two researchers (names) to help with the data collection.

Research purpose

I am so passionate about conservation and degrowth specifically in Africa which is currently facing environmental challenges and biodiversity loss due to the focus on economic growth. The purpose of this research is to understand the role of indigenous planning system in degrowth in Ghana using your traditional area as a case study.

How does the interview work?

You will be asked to answer some questions under four main themes based on the research objectives. This will take about 30 - 45 minutes. The first part of the interview is general information about the traditional area. The second part investigates how nature is

conceptualized in this traditional area. The third and four parts are location based questions on the indigenous planning systems and their role on conservation hence degrowth and the last part covers how social change is affecting these systems. It is important that you complete all the questions as accurately as possible and to the best of your knowledge. Your answers will help to direct good research.

Privacy

The information that you share in this research is anonymised using pseudo names. This means that they cannot be traced back to you. Your personal information will remain confidential and will not be shared. Completely anonymised data can be shared with other researchers or published in a scientific journal.

Informed Consent

I have read and understood the above information. I agree to participate in this study and I confirm the use of the data collected from this interview

Tick the box Yes/No

Personal information

- How long have you been playing this role in this traditional area?
- Can you give us a brief description of this traditional area?

How is nature conceptualized in this traditional area

- What is the perceived human-nature relationship in this area?
- What is the belief that guides this relationship?
- For how long has this belief existed?

Indigenous planning processes within the traditional areas?

- What are the indigenous planning processes within the traditional area?
- What is the structure of these system

Role in conservation of local resources

- What is their role in conservation?

Social change

- *What is the effect of social change on these systems*

Appendix 3: Interview Response

Eguafo traditional area

1.How does the perception of nature differ when it comes to indigenous views in Ghana and what is generally stated?

Response 1 :The Akan are Ghana's largest ethnic group and tribe. We Akan believe in Sasa or tumi, and that everything in our environment has spirits. To endanger the environment for our own selfish benefit is a sin (Community Leader Eguafo 1)

Response 2: We consider nature to be unique. It is unlawful to hurt nature in the same way as it is unlawful to kill another person (Community Leader Eguafo 3)

Response 3: Being a coastal region, we are fortunate to have some forest land in addition to the water. We think that the woodlands and the sea in this region are home to a number of spirits (Traditional leader)

Response 3: The true owners of the lands in this area are our forefathers. We, the living, are merely caregivers. Lands are viewed as a common resource that is managed by chiefs, who are referred to as custodians. The chiefs, we feel, act as a link between us and our forefathers. Even the constitution recognizes chiefs as stewards of the country's territory(community leader 2)

2. What are the differences and similarities between indigenous planning processes within the traditional areas?

Response 1 : We are in Ghana. Although we are one people, our varied history and religious beliefs cause us to differ a little from one another. Our local planning process is based on the resources available to us, our histories, and our beliefs (community leader Eguafo 1)

Response 2: As I mentioned earlier, the sea is a key source of livelihood for the men and women in this region, therefore we are fortunate to have it. In addition to this, the sea holds considerable cultural and spiritual value for the locals. Since we have access to the sea, we have belief systems and procedures in place to safeguard it, which, in my opinion, are lacking in places that don't (traditional leader)

Response 3: Not just one traditional area, but all traditional areas strongly believe in spirits and gods that reside in animals, plants, and other ecosystem elements, and all of these traditional places have procedures in place to protect these resources from being destroyed. Despite their differences, these systems are interconnected and have the same purpose of protecting the ecosystem (community leader 5)

3. What is their role in conservation of local resources and biodiversity ?

Response 1: In addition to the sea, there are numerous minor rivers that are important to the locals on a spiritual and cultural level. The rivers here are gods. For the locals, the rivers assume the role of gods and serve many purposes. We have taken steps to protect them from pollution.(Traditional leader)

Response 2: When a lady is menstruating or using a black pot to collect water from these rivers, it is considered improper. The gods or elders harshly punish women who are proven guilty. People have been attacked by the river goddess in various instances for breaking these rules (Community leader, 4)

Response 3: The sea is a god that guards and regulates fishing operations. Today's fishermen and fisher folk still adhere to the prohibition against fishing on Tuesdays. Consequently, the sea goddess can take a break and give us more fish. (Community leader 1)

Response 4: There are times when we prohibit fishing activity. You need to rest to replenish your strength when you work Monday through Friday, correct? for the sea to provide more fish for the residents, it also needs this relaxation (community leader 3)

4. What is the effect of social change on indigenous planning systems in the traditional areas?

Response 1: Ghanaians recognize this area (the central region) as a hub for education. This area is home to Ghana's leading colleges. Some taboos and behaviors linked to the sea have been eroded as a result of the region's vast educational initiatives. Even though modern fishing men still follow the no-fishing-on-Tuesday rule, their agitated behavior makes it a little unsettling. It is important to remember that some history and traditions cannot be obliterated, and we work to uphold this principle.(traditional leader)

Response 2: The rate at which things are going, we have to go back to how things were done in the past else we will leave nothing behind for the future generation. These traditional knowledge systems should not be dismissed as superstitious foolishness, but rather should be included into modern conservation laws and procedures to make them easier to apply for local people. (Community leader 4)

Asante Bekwai traditional area

1.How does the perception of nature differ when it comes to indigenous views in Ghana and what is generally stated?

Response 1 : The Asantes have a unique connection to their surroundings. We are blessed to live in Ghana's woodland region. We are fortunate to have a variety of forests with various plant and animal species. Despite not having access to the sea, we are fortunate to have a wide variety

of bodies of water, the most notable of which are lake Bosomtwe, the river Offin, and the Tano, to name just a few (Traditional leaders)

Response 2: The Asantes are religious people who revere the Supreme Being, their ancestors, minor gods, and the impersonal forces that operate behind magic, witchcraft, voodoo, spells, and charms. These appear through plants and animals, which may sound weird to outsiders (community leader 1)

Response 3: We Asantes consider the existence of spirits to be widespread. Based on the strength of their power, these spirits are organized in a hierarchy. For instance, God, the highest deity, is first, then the ancestors, minor spirits, animism, sorcery, and witchcraft (community leader 3)

Response 4: Like other traditional Ghanaians, the Asantes hold certain trees and animals in high regard because they are thought to possess some form of tumi (spiritual power). We believe that some types of trees and animals have greater spiritual power than others (Community leader 2)

Response 5 : It is crucial to remember that humans possess sasa in addition to animals and plants. Thus, neither the plants nor the animals in their ecosystems nor humans are superior. We must protect this species since we are one with it, much like the proverb says, "You are your brother's keeper." (Community leader 5)

2. What are the differences and similarities between indigenous planning processes within the traditional areas?

Response1 :We are situated in the country's wooded land, as I mentioned earlier. The Asantes classify vegetation into three fundamental categories. We have the savanna, the forest, and the area between the two. The forest is the most significant from an ecological, economic, and

cultural perspective. It is believed that forest trees, especially great trees, have spiritual qualities that can be used for a variety of purposes.(Traditional leader)

Response 2: We Asantes believe in totems, which are rare animals, birds, plants, or artifacts that a specific ethnic society, family, or clan revere as sacrosanct because they may have offered that particular ethnic society, family, or clan a unique help that ensured its existence. The aid that a specific animal, plant, or object provides to the people is another justification for a family or clan choosing it as a totem. Even the Asantes have different totem animals. The falcon is our totem animal in our traditional territory. The indigenous planning systems are formed based on these disparities, and other traditional territories in the Ashanti region have the hawk, leopard among others as their totemic animals (community leader, 1)

Response 3: Contrary to others who live in coastal locations, we do not engage in any customs or rituals that forbid us from accessing the sea. Our local planning system was developed based on the resources that were available to us because we are situated in a forest zone with a few water bodies. This implies that compared to other traditional locations, our planning structure may be different. Due to the existence of various clans with various belief systems, there are minor differences even among Asantes (community leader 4)

3. What is their role in conservation of local resources and biodiversity ?

Response1 : In this traditional region, we hold the Asantemanso and Bosumtwe forest reserves in high regard. Additionally, the falcon is our totem animal. Because they have previously protected us, the trees in these forest reserves, especially the odum, have great spiritual and cultural meaning for us. To intentionally step on a totemic plant seedling or kill a totemic animal is therefore considered wrong. The traditional priest performs specific ceremonial and pacification ceremonies on behalf of the offender in order to make peace with his or her totemic animal or plant that was unintentionally killed (Traditional leader)

Response 2: People in this traditional area primarily work in agriculture. We employed taboos to protect the earth, who the Asantes revere as a goddess or mother, so that she could fulfill her role as a mother by continuously providing resources to meet the needs of her human offspring. The native Asantes hold a high regard for taboos because they see them as directives from the gods and the ancestors (Community leader 1)

Response 3: Every Ghanaian knows the history surrounding the formation of the Lake Bosomtwe which is translated in English as an antelope deity in this traditional area in 1640. The large forest tract and the lake are treated as sacred and revered among the people. Taboos and traditional beliefs govern the forest reserve. There are various taboos governing the Bosumtwe forest reserve. It is taboo for a woman in her menstruation period to fetch water from the lake or even look at it from a short distance, and collect firewood from the forest tract (community leader 2)

Response 4: Additionally, it is forbidden to dump anything like bottles, trash, unclean materials, or foreign objects into the lake or the woodland area. It was forbidden to wash, bathe, swim in, or urinate within sight of the lake or its surrounding forest (community leader 3)

Response 5: Even though fishing is permitted in the lake, it must be done responsibly and is forbidden on Tuesdays and Sundays. Except for harvesting firewood for personal use and not for commercial purposes, vigorous farming operations are prohibited near the reserve. Despite not being prohibited, hunting must be limited to a few hunters who are under the careful supervision of the Abono traditional council (community leader 4)

4. What is the effect of social change on indigenous planning systems in the traditional areas?

Response : In the past, the Asante predecessors' primary tools for controlling and keeping an eye on the biological resources in the Asante Bekwai traditional territory were taboos, cosmological beliefs, and totems. In most of the forest reserves in the Ashanti region, these Asante indigenous knowledge systems were and remain resilient and proactive in addressing the destruction of biodiversity. But the arrival of Christianity, education, and migration—most importantly—is causing these structures to be gradually destroyed (Traditional leader).

Response 2: The indigenous people's exposure to imported religions, formal education, and greater migration have all had an impact on the forest reserves in this traditional area (Community leader 2)

Tallensi traditional area

1.How does the perception of nature differ when it comes to indigenous views in Ghana and what is generally stated?

Response 1 : This area is situated in the savannah region. We take our Tenggbama (Sacred groves) seriously because of the years-long deforestation in this region. The Ndaan is in charge of the sacred groves, which represent the community's center of spirituality. To carry out rituals pertaining to believers' spiritual requirements, the Ndaan, the intermediary between the physical and the spiritual, is recruited from the community (traditional leader)

Response 2: In the traditional area, each sacred grove has a name and an origin story. The groves were created as a result of an ancestor dying there, experiencing luck there, or settling there first. The Dunkpaliga is Tallensi's most potent grove (community leader 1)

Response 3: Natives frequently use the phrase "ti ba nam" meaning our ancestors to invoke the spirits of their ancestors in their daily talks. However, because ancestors led moral lives and

passed away peacefully as they aged, they are revered rather than idolized. They are well suited to mediate for the living because of their moral fortitude (Community leader 2)

Response 4: One tree can be revered as sacred. Additionally, the naked earth can be revered and is typically surrounded by a pile of stones. This traditional location has several sized sacred groves, but the Dunkpaliga grove is the most potent one there. (Community leader 3)

2. What are the differences and similarities between indigenous planning processes within the traditional areas?

Response1 : We also hold a totemism belief. The python is our totem. It is forbidden to hurt pythons since we think they once saved our forefathers. And we have heard of instances where pythons have been murdered in other, traditional locations because they were viewed as threats (community leader, 1)

Response 2: This traditional area's established practice and belief systems are built on the history of our ancestors. Not to brag, but groves in the Tallensi area are perceived as being more strong and having tougher laws than groves in the Nabdam area in terms of culture, economics, and social prestige. Therefore, while the procedures vary, they are always geared on preserving the groves (Traditional leader)

3. What is their role in conservation of local resources and biodiversity ?

Response 1: Taboos and spiritual practices are crucial to the preservation of holy places in nature. Locals frequently described groves as "dense," "wet," "black," or "green" when asked to compare them to the surrounding flora, showing that groves stand out from the rest of the environment (Traditional leader)

Response 2: In these traditional locations, there are taboos that restrict how to use groves. They outline what can, should, and should not be done. This has long provided the groves with protection (Community leader 1)

4. What is the effect of social change on indigenous planning systems in the traditional areas?

Response 1:The survival of the groves is threatened by new religions and formal education. However, the bulk of Ghanaians still hold to their traditional worldview (Traditional leader)

Response 2: Despite the fact that traditional Tallensi society is gradually changing in terms of exposure to western education, multiple faiths, and migration, residents still see the groves as the spiritual heart of their villages, protecting them from destruction (CLT1, 2022)

Appendix 3: Coding Tree

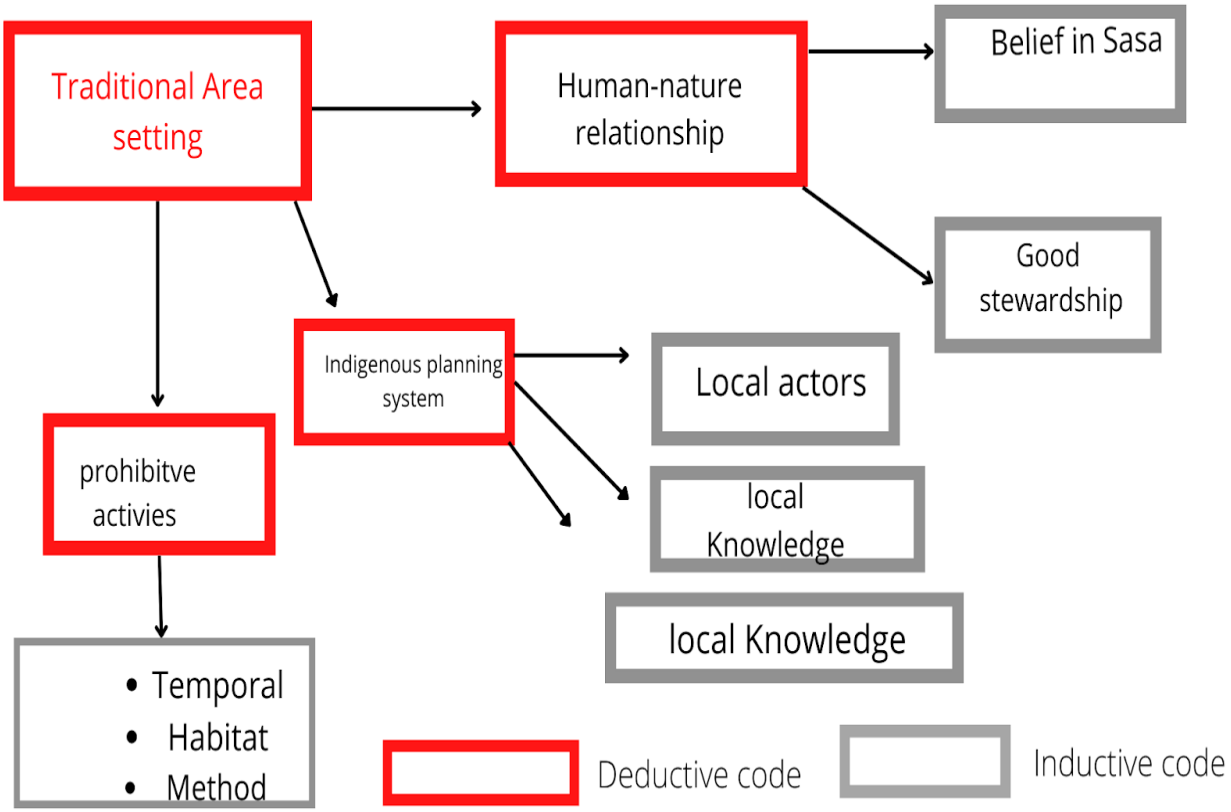

Figure 7: Coding tree