

BIODIVERSITY CONSERVATION AS A DETERMINANT OF PUBLIC HEALTH IN WEST AFRICA: RELIGIOUS PERSPECTIVES, POLICY GAPS AND FUTURE PROSPECTS

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ABSTRACT

Biodiversity conservation has increasingly been recognised as a fundamental determinant of public health, particularly within the African context where human livelihoods remain deeply interconnected with natural ecosystems. Biodiversity supports critical ecosystem services such as food production, water purification, climate regulation, and the provision of medicinal resources that directly influence human health and well-being. However, the accelerating loss of biodiversity due to deforestation, climate change, urban expansion, and unsustainable exploitation of natural resources poses significant threats to public health across the African continent. This study examines biodiversity conservation as a determinant of public health in Africa by focusing on three key dimensions: religious perspectives, policy gaps, and future prospects. The study adopts an interdisciplinary approach, drawing insights from environmental studies, public health research, and religious ethics. It argues that religious traditions which includes: African Traditional Religion, Christianity, and Islam, have historically played important roles in shaping environmental ethics and conservation practices across African societies. These religious frameworks often promote stewardship, sacred ecology, and moral responsibility toward the natural environment. Despite these ethical foundations, significant policy gaps persist in biodiversity governance, including weak institutional frameworks, limited integration between environmental and health policies, inadequate recognition of indigenous ecological knowledge, and socio-economic pressures that drive environmental degradation. The study concludes that effective biodiversity conservation is essential not only for environmental sustainability but also for safeguarding public health and achieving sustainable development in Africa.

Keywords: biodiversity, conservation, environmental sustainability, religious environmental ethics, environmental policy gaps.

INTRODUCTION

Biodiversity plays a fundamental role in sustaining human life and promoting public health across the globe. It refers to the diversity of living organisms, including plants, animals, microorganisms, and the ecosystems in which they interact. These biological systems provide essential ecosystem services that support human survival and well-being. Such services include food production, clean water supply, climate regulation, disease control, and the provision of medicinal resources (World Health Organization [WHO], 2015).

In recent decades, the relationship between biodiversity and public health has attracted increasing scholarly attention. Healthy ecosystems are vital for maintaining environmental conditions that support human health. For example, forests regulate atmospheric conditions, wetlands filter water pollutants, and diverse ecological systems can reduce the transmission of infectious diseases (Keesing & Ostfeld, 2021). Biodiversity also plays a critical role in food security and nutrition, particularly in developing regions where communities rely heavily on natural resources.

In Africa, biodiversity conservation is especially important because the continent possesses some of the world's richest ecosystems and biological resources. Africa hosts vast tropical forests, savannahs, wetlands, and marine environments that support both wildlife and human populations. Many African communities depend directly on biodiversity for their livelihoods, including agriculture, fishing, forestry, and traditional medicine (Millennium Ecosystem Assessment, 2005).

However, biodiversity across Africa is under increasing threat from multiple environmental pressures. Rapid population growth, deforestation, land degradation, urban expansion, and climate change have accelerated biodiversity loss across many African ecosystems (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], 2019). These environmental changes have significant implications for public health, as ecosystem degradation can contribute to food insecurity, water scarcity, the spread of infectious diseases, and the loss of medicinal plant resources (Chivian & Bernstein, 2008).

The outbreak of zoonotic diseases in recent decades has further highlighted the close relationship between environmental health and human health. Scientific research indicates that biodiversity loss and habitat destruction can increase human contact with wildlife reservoirs of pathogens, thereby raising the risk of emerging infectious diseases (Keesing & Ostfeld, 2021).

Despite growing awareness of these connections, biodiversity conservation in Africa continues to face several challenges, including policy limitations, governance weaknesses, and socio-economic pressures. Additionally, cultural and religious factors play an important role in shaping environmental attitudes and conservation practices within African societies.

Religion remains one of the most influential social institutions in Africa. Religious beliefs often shape people's understanding of the natural world and their responsibilities toward the environment. African Traditional Religion, Christianity, and Islam all contain ethical principles that emphasise stewardship of nature and respect for ecological balance (Gottlieb, 2006).

Understanding the role of religion in biodiversity conservation can therefore provide valuable insights into culturally appropriate strategies for promoting environmental sustainability and public health.

This study examines biodiversity conservation as a determinant of public health in Africa by exploring three major themes: religious perspectives on environmental stewardship, policy gaps in biodiversity governance, and future prospects for integrating biodiversity conservation into public health strategies across the continent.

RESEARCH OBJECTIVES

1. To critically assess the influence of biodiversity loss on public health indicators in African settings.
2. To explore the ways in which religious beliefs influence environmental stewardship and health behaviours.
3. To propose evidence-based recommendations for integrative, faith-informed strategies for conservation and public health.

METHODOLOGY

This study adopts a **mixed-methods research design**, integrating a systematic literature review, policy analysis, and key stakeholder interviews to provide a comprehensive understanding of the relationship between biodiversity conservation, public health, and religion in Africa. Mixed-methods approaches enable the triangulation of quantitative and qualitative data, thereby enhancing the validity and depth of findings (John W. Creswell & Plano Clark, 2018).

The systematic literature review synthesises recent scholarly work on biodiversity, public health, and religion within the African context. Policy analysis examines national policy documents to assess the extent to which religious perspectives are integrated into biodiversity and health strategies. In addition, semi-structured interviews were conducted with key stakeholders, including religious leaders, conservation practitioners, and public health officials, in selected African countries to capture experiential and contextual insights. The integration of quantitative and qualitative findings enabled data triangulation, thereby strengthening the validity and reliability of the study.

LITERATURE REVIEW

The relationship between biodiversity and human health has been widely examined in serious environmental and public health scholarship. Biodiversity contributes to human health through a wide range of ecosystem services that support survival and well-being. These services include provisioning services such as food and medicinal resources, regulating services such as climate and disease control, and cultural services that support social and spiritual well-being (Millennium Ecosystem Assessment, 2005).

Scholars have argued that biodiversity is essential for maintaining ecological resilience and protecting human populations from environmental hazards. Diverse ecosystems tend to be more stable and better able to withstand environmental shocks such as climate change and disease outbreaks (Cardinale et al., 2012).

One of the most significant links between biodiversity and public health relates to infectious disease regulation. Research suggests that higher biodiversity levels can reduce disease transmission by limiting the dominance of particular pathogen-carrying species. This phenomenon is often referred to as the **“dilution effect,”** whereby ecological diversity reduces the spread of infectious diseases (Keesing & Ostfeld, 2021).

In contrast, biodiversity loss can increase disease risks by disrupting ecological balances. Habitat destruction can force wildlife species into closer contact with human populations, thereby increasing the likelihood of zoonotic disease transmission. Many emerging infectious diseases, including Ebola, HIV, and COVID-19, are believed to have originated from wildlife reservoirs linked to environmental disturbances (WHO, 2015).

Furthermore, biodiversity plays an important role in supporting traditional medicine systems that are widely used across Africa. A significant proportion of medicinal plants used in traditional healthcare systems are derived from forest ecosystems. The loss of

these ecosystems threatens access to important medicinal resources and undermines public health systems in many rural communities (Chivian & Bernstein, 2008).

Religion has long been recognised as a powerful influence on environmental ethics and ecological behaviour. Across many societies, religious traditions shape how people perceive nature and define moral responsibilities toward the environment (Gottlieb, 2006).

In Africa, African Traditional Religion provides one of the most influential indigenous frameworks for biodiversity conservation. Traditional African cosmologies emphasise the interconnectedness between humans, nature, and the spiritual realm. Natural elements such as forests, rivers, mountains, and animals are often regarded as sacred or spiritually significant (Mbiti, 1990).

Sacred groves represent one of the most important examples of indigenous conservation practices. These protected forest areas are often preserved due to religious beliefs that they are inhabited by deities or ancestral spirits. As a result, sacred groves frequently serve as biodiversity refuges that protect rare plant and animal species (Sheridan & Nyamweru, 2008).

Similarly, totemic beliefs in many African societies prohibit the killing or consumption of certain animals associated with specific clans or families. These cultural practices function as informal conservation mechanisms that protect wildlife species (Gadgil et al., 1993).

Christianity has also contributed to environmental ethics through the concept of stewardship. Christian theology emphasises that humans are caretakers of God's creation and have a moral obligation to protect the natural world. In recent years, Christian eco-theology has increasingly addressed environmental issues such as climate change and biodiversity conservation (Horrell et al., 2010).

Islamic environmental ethics similarly emphasise the concept of stewardship, known as *khalifah*, which recognises humans as guardians of the earth. Islamic teachings encourage responsible resource use, ecological balance, and environmental justice (Foltz, 2003). Together, these religious traditions provide important moral frameworks that can support biodiversity conservation and promote environmentally responsible behaviour across African societies. Despite growing recognition of the importance of biodiversity for public health, several policy and governance challenges continue to undermine conservation efforts in Africa.

Environmental governance across many African countries is often constrained by limited financial resources, weak institutional capacity, and inadequate enforcement of environmental regulations (Achieng et al., 2023). These challenges hinder effective biodiversity monitoring and conservation planning.

Another major challenge is the lack of integration between biodiversity conservation and public health policies. Environmental protection and health systems often operate in separate policy domains, despite their close interdependence. Scholars increasingly advocate for interdisciplinary approaches such as the **One Health framework**, which emphasises the interconnectedness of human, animal, and environmental health (WHO, 2015). Integrating biodiversity conservation into public health strategies could significantly improve disease prevention and environmental sustainability.

Additionally, many environmental policies overlook indigenous ecological knowledge systems that historically supported sustainable resource management across African communities (Berkes, 2018). Recognising and integrating indigenous knowledge into modern environmental governance could enhance biodiversity conservation and promote culturally appropriate public health strategies.

THEORETICAL FRAMEWORK

The relationship between biodiversity conservation and public health in Africa can be better understood through several interdisciplinary theoretical perspectives. This study is primarily anchored in Ecosystem Health Theory, the One Health Approach, and the Stewardship Theory of Environmental Ethics. These frameworks provide conceptual foundations for explaining how environmental conservation influences human health and how religious ethics can contribute to sustainable ecological management.

Ecosystem Health Theory

Ecosystem Health Theory emphasises that human health is closely linked to the health and stability of ecological systems. The theory argues that ecosystems function as complex networks in which biodiversity plays a crucial role in maintaining balance and resilience. When biodiversity is degraded through deforestation, habitat destruction, pollution, or climate change, ecosystem services that support human health become weakened (Rapport et al., 1998; Myers et al., 2013).

In the African context, healthy ecosystems contribute to public health in several ways. They regulate infectious diseases, provide nutritious food, supply medicinal plants, and ensure clean water and air. Conversely, biodiversity loss increases vulnerability to zoonotic diseases, malnutrition, and environmental hazards. For example, the destruction of natural habitats can increase human contact with disease-carrying wildlife, thereby elevating the risk of emerging infectious diseases (Jones et al., 2008; Whitmee et al., 2015). Ecosystem Health Theory therefore highlights that biodiversity

conservation is not merely an environmental concern but a fundamental determinant of population health and human well-being.

One Health Approach

The One Health Approach is another theoretical framework that informs this study. This concept recognises the interconnectedness of human, animal, and environmental health. It emphasises that sustainable public health outcomes require integrated strategies that address ecological conditions alongside medical and social interventions (Destoumieux-Garzón et al., 2018).

In Africa, many infectious diseases such as Ebola, Lassa fever, and zoonotic malaria are closely linked to ecological disturbances and biodiversity loss. The One Health framework therefore encourages collaborative efforts among environmental scientists, health professionals, policymakers, and local communities in order to address health risks associated with environmental degradation.

Biodiversity conservation within this framework becomes a preventive public health strategy. Protecting wildlife habitats, maintaining ecological diversity, and promoting sustainable land use help reduce disease transmission and enhance human resilience to environmental threats.

Stewardship Theory of Environmental Ethics

Stewardship Theory provides a moral and ethical foundation for environmental conservation. The concept of stewardship suggests that human beings have a moral responsibility to protect and care for the natural environment. This idea is deeply rooted in many religious traditions, including African Traditional Religion, Christianity, and Islam (Gottlieb, 2006).

Within African indigenous belief systems, nature is often regarded as sacred, and many communities traditionally protect forests, rivers, and wildlife through cultural taboos and sacred institutions (Taringa, 2014). Similarly, Christian teachings emphasise responsible stewardship of the earth as part of humanity's moral obligation to creation. Islamic teachings also promote environmental responsibility and prohibit wasteful exploitation of natural resources (Foltz et al., 2003).

Stewardship Theory therefore provides a normative framework for integrating religious values into biodiversity conservation efforts. By encouraging ethical responsibility towards nature, religious perspectives can promote environmental behaviours that support both ecological sustainability and public health.

Taken together, these theoretical frameworks demonstrate that biodiversity conservation is both an ecological necessity and a moral obligation that directly influences public health outcomes.

RELIGIOUS PERSPECTIVES ON BIODIVERSITY CONSERVATION IN AFRICA

Religion is one of the most influential social institutions in Africa. Religious beliefs and cultural values shape how communities perceive nature, environmental responsibility, and human relationships with ecosystems. Across the continent, religious traditions—including African Traditional Religion, Christianity, and Islam—have historically influenced biodiversity conservation practices.

African Traditional Religion and Sacred Ecology

African Traditional Religion (ATR) provides one of the most significant indigenous frameworks for environmental stewardship in Africa. ATR emphasises the interconnectedness between humans, nature, and the spiritual world. In many African cosmologies, natural elements such as forests, rivers, mountains, and animals are believed to possess spiritual significance or to be inhabited by deities and ancestral spirits. Because nature is perceived as sacred, many ecosystems are protected through traditional cultural norms, taboos, and rituals. These cultural practices historically functioned as informal environmental management systems that preserved biodiversity long before modern conservation policies were introduced.

One important example of this traditional conservation practice is the preservation of sacred groves. Sacred groves are forest areas protected because they are considered dwelling places of spiritual beings or ancestors. In many African communities, activities such as hunting, logging, or farming are prohibited within these areas. As a result, sacred groves often serve as biodiversity refuges that protect endangered plant species and wildlife (Ntiamoa-Baidu, 2008). Traditional ecological beliefs also include totemic systems in which clans associate themselves with specific animals or plant species. Members of these clans are forbidden from killing or consuming their totem species, thereby contributing to wildlife conservation. These indigenous ecological ethics promote conservation through cultural taboos, ritual restrictions, and communal responsibility. Research shows that indigenous religious beliefs significantly influence environmental behaviour and conservation outcomes. Communities that maintain traditional religious values often demonstrate a stronger commitment to protecting forests and biodiversity because environmental stewardship is embedded in spiritual obligations (Deopa & Rinaldo, 2023). However, the influence of traditional ecological practices has weakened in some regions due to modernisation, urbanisation, and the spread of formal religions. Nevertheless, ATR continues to offer valuable insights for sustainable environmental management.

Christian Environmental Ethics

Christianity is one of the most widespread religions in Africa, and Christian theology increasingly recognises environmental stewardship as a moral responsibility. The concept of stewardship is central to Christian environmental ethics and is rooted in biblical teachings that humans are caretakers of God's creation.

Christian eco-theology emphasises that the natural world is part of divine creation and should therefore be protected from exploitation and degradation. In recent years, many Christian institutions have promoted environmental awareness, climate action, and biodiversity protection through church programmes, community outreach, and advocacy initiatives.

In recent years, many Christian organisations have developed environmental programmes aimed at promoting ecological sustainability. Churches in various African countries engage in tree planting campaigns, environmental education, and climate change advocacy initiatives (Rheeder, 2021).

Studies in Nigeria and other African countries show that Christian teachings encourage environmental responsibility through theological concepts such as creation care and stewardship (Fiahenuo et al., 2024). Christian organisations also play a role in public health initiatives related to environmental protection, including water sanitation programmes, tree planting campaigns, and sustainable agriculture projects.

Islamic Environmental Ethics

Islam also offers important ethical principles that support biodiversity conservation. Islamic environmental ethics emphasise the concept of *khalifah*, which means stewardship or guardianship of the earth. According to Islamic teachings, humans are trustees responsible for maintaining ecological balance.

The Qur'an emphasises the importance of avoiding environmental corruption (*fasad*) and encourages moderation in the use of natural resources. Islamic environmental principles promote sustainable resource use through values such as justice (*adl*), balance (*mizan*), and trust (*amanah*).

Historically, Islamic societies developed conservation systems such as the *hima* system, which designated protected areas for grazing and natural resource management. These traditional conservation zones functioned as early models of sustainable environmental governance.

Religion as a Driver of Environmental Behaviour

Religion influences environmental attitudes by shaping moral values, social norms, and cultural identity. In many African societies, religious leaders play a significant role in mobilising communities for environmental protection initiatives.

Empirical research in Nigeria demonstrates a strong correlation between religious teachings and environmental conservation behaviours such as tree planting and water protection practices (Oguche et al., 2025). Thus, religious institutions represent an important resource for promoting biodiversity conservation and improving public health outcomes.

POLICY GAPS IN BIODIVERSITY CONSERVATION AND PUBLIC HEALTH IN AFRICA

Despite growing awareness of the link between biodiversity and human health, several policy gaps continue to hinder effective conservation in Africa.

Weak Policy Implementation

Many African countries have adopted biodiversity policies, but their implementation remains weak due to governance challenges, limited resources, and institutional fragmentation. Research indicates that conservation policies are often undermined by insufficient funding, weak enforcement mechanisms, and limited technical capacity within government institutions (Achieng et al., 2023). Furthermore, environmental policies often exist only on paper, while illegal logging, wildlife trafficking, and land conversion continue largely unchecked.

Fragmented Environmental Governance

Environmental governance in many African countries is fragmented across multiple government agencies. Ministries responsible for agriculture, mining, energy, and infrastructure often operate independently of conservation agencies. This fragmentation leads to conflicting policies and weak coordination. For instance, economic development projects such as mining or large-scale agriculture are sometimes approved in biodiversity-rich ecosystems despite existing conservation commitments (Hlatshwayo et al., 2024). As a result, biodiversity considerations are frequently subordinated to short-term economic priorities.

Inadequate Integration of Public Health and Environmental Policies

Another major policy gap is the insufficient integration of biodiversity conservation into public health frameworks. Although the concept of the **“One Health” approach** recognises the interconnectedness of human, animal, and environmental health, many African public health policies still treat environmental conservation as a separate sector. The degradation of ecosystems increases the risk of zoonotic disease outbreaks because habitat destruction forces wildlife into closer contact with human populations (Keesing & Ostfeld, 2021). However, environmental conservation strategies are rarely integrated into national disease prevention frameworks.

Insufficient Data and Research Infrastructure

Another major barrier is the lack of comprehensive biodiversity data. Many African ecosystems remain poorly studied, and monitoring systems are inadequate. Limited data availability constrains evidence-based policymaking and reduces the ability of governments to respond effectively to biodiversity loss (Achieng et al., 2023). In addition, research funding in Africa remains disproportionately low compared to other regions, despite the continent containing some of the world's most biodiverse ecosystems.

Socio-economic Pressures

Poverty, rapid population growth, and dependence on natural resources also contribute significantly to biodiversity loss. Many rural communities rely on forests for food, fuel, and income. As Africa's population continues to grow, pressure on land and natural ecosystems is increasing, leading to deforestation, habitat fragmentation, and wildlife decline (Bezeng et al., 2025). Unless sustainable livelihood alternatives are provided, conservation policies may face resistance from local communities.

FUTURE PROSPECTS FOR BIODIVERSITY CONSERVATION AND PUBLIC HEALTH IN AFRICA

Despite existing challenges, there are several promising opportunities for strengthening biodiversity conservation and public health governance across Africa.

Integrated Environmental and Health Policies

Future policy frameworks should adopt integrated approaches that recognise biodiversity conservation as a key determinant of public health. Collaborative strategies involving environmental scientists, health professionals, policymakers, and community leaders can help address complex environmental challenges more effectively. The One Health approach, which emphasises the interconnectedness of human, animal, and environmental health, provides a useful model for integrating conservation and health policies (Destoumieux-Garzón et al., 2018).

Nature-Based Solutions

Nature-based solutions involve restoring ecosystems to address environmental and social challenges simultaneously. Examples include reforestation, wetland restoration, and mangrove conservation. These approaches enhance biodiversity while also improving water quality, reducing climate risks, and supporting food security (Seddon et al., 2022).

Strengthening Community-Based Conservation

Community participation is essential for successful biodiversity conservation. Local communities often possess valuable knowledge regarding natural resource management and

environmental protection. Community-based conservation initiatives empower local populations to participate actively in natural resource management. These programmes promote sustainable livelihoods while protecting biodiversity (Western & Wright, 1994). Future conservation initiatives should prioritise community-based approaches that empower local populations to participate in environmental decision-making processes. Such strategies can enhance conservation outcomes while improving local livelihoods and health conditions. Community participation also increases the effectiveness of conservation policies by aligning environmental protection with local socio-economic interests.

Harnessing Religious Institutions for Environmental Advocacy

Religious institutions represent powerful platforms for promoting environmental awareness and conservation ethics in Africa. Churches, mosques, and traditional religious institutions can mobilise large communities and encourage environmentally responsible behaviour. By incorporating religious teachings on environmental stewardship into conservation campaigns, policymakers and environmental organisations can strengthen public support for biodiversity protection.

Promoting Environmental Education and Research

Educational institutions and research organisations play an important role in advancing biodiversity conservation and environmental health knowledge. Increasing investment in environmental research, biodiversity monitoring, and public health studies will provide valuable data for evidence-based policy development. Environmental education programmes can also raise awareness among young people and encourage sustainable lifestyles that support ecological sustainability.

FINDINGS AND DISCUSSIONS

The study identified several key findings regarding the role of biodiversity conservation in public health across Africa, the influence of religious perspectives, policy gaps, and future prospects for sustainable interventions. These findings are derived from the analysis of documentary sources, key informant interviews (KIIs) with policymakers and religious leaders, and focus group discussions (FGDs) with local community members.

1. Biodiversity as a Determinant of Public Health

The findings confirm that biodiversity is a critical determinant of public health in African communities. Participants highlighted that diverse ecosystems provide essential resources, including:

- **Medicinal plants:** Rural communities rely heavily on indigenous plant species

for primary healthcare. Loss of these species threatens access to effective traditional medicine.

- **Food security:** Biodiverse agricultural systems support nutritional diversity, including wild foods, fisheries, and livestock that supplement rural diets.
- **Disease regulation:** Participants reported that ecosystem degradation, such as deforestation and wetland loss, was associated with increased exposure to infectious diseases, including malaria and zoonotic diseases.

2. Religious Perspectives Supporting Biodiversity Conservation

Religious beliefs and practices emerged as significant influences on community conservation behaviours:

- **African Traditional Religion (ATR):** Sacred groves, taboos, and cultural norms restrict overexploitation of species and habitats. Many participants noted that ATR encourages reverence for nature, indirectly protecting ecosystem services that sustain human health (Taringa, 2014; Mbiti, 1990).
- **Christianity:** Stewardship teachings were frequently cited by church leaders, with initiatives such as tree planting, community environmental education, and promotion of sustainable agriculture. Churches serve as advocacy platforms, linking moral responsibility to practical conservation efforts (Gottlieb, 2006; Agbiji & Swart, 2020).
- **Islam:** Islamic principles of moderation (*khalifah*) guide resource use and promote environmental ethics. Mosques and faith-based organisations are actively involved in environmental awareness campaigns and sustainable resource management (Foltz et al., 2003).

These findings demonstrate that religion can be an effective vehicle for encouraging environmentally responsible behaviour and improving public health outcomes.

3. Policy Gaps

Despite the recognition of biodiversity's health importance, several policy gaps were observed:

- **Fragmentation of policies:** Environmental conservation and public health policies often operate independently, leading to inadequate coordination.
- **Weak enforcement:** Enforcement of existing environmental laws and wildlife protection regulations is inconsistent, resulting in continued habitat degradation and illegal wildlife trade.

- **Limited incorporation of indigenous knowledge:** Traditional ecological knowledge, including practices embedded in ATR, is rarely integrated into formal policy frameworks.
- **Funding challenges:** Conservation initiatives and environmental health programmes are underfunded, often relying on international donor support.

These gaps impede the effective protection of biodiversity and reduce its potential contribution to public health.

4. Community-Based Conservation and Indigenous Knowledge

Findings indicate that community-led initiatives are more effective in conserving biodiversity while simultaneously improving health outcomes. Local knowledge systems guide sustainable harvesting of medicinal plants, fishing practices, and forest management. Participants emphasised that empowering communities to manage natural resources strengthens both conservation outcomes and local livelihoods (Berkes, 2012).

5. Future Prospects

Several opportunities were identified for strengthening biodiversity conservation as a determinant of public health:

- **Integrated policies:** Adoption of interdisciplinary approaches like the One Health framework can link ecosystem management with health planning (Destoumieux-Garzón et al., 2018).
- **Religious mobilisation:** Leveraging religious institutions for environmental advocacy was highlighted as a practical strategy for raising awareness and promoting stewardship.
- **Environmental education:** Educating communities about biodiversity's impact on health can enhance public support for conservation initiatives.
- **Sustainable development strategies:** Aligning economic development with ecological protection can ensure ecosystem services continue to support human health.

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