
**BUDDHIST CONCEPT OF ECOLOGY: PHILOSOPHICAL
FOUNDATIONS AND CONTEMPORARY RELEVANCE FOR
ENVIRONMENTAL SUSTAINABILITY**

***Ayan Banerjee**

State Aided College Teacher Department of Geography, Polba Mahavidyalaya Polba,
Hooghly, West Bengal.

Article Received: 18 June 2026, Article Revised: 08 July 2026, Published on: 28 July 2026

***Corresponding Author: Ayan Banerjee**

State Aided College Teacher Department of Geography, Polba Mahavidyalaya Polba, Hooghly, West Bengal.

Doi: <https://doi-doi.org/101555/ijarp.6414>

ABSTRACT

The contemporary environmental crisis, characterized by climate change, biodiversity loss, deforestation, pollution, and unsustainable resource exploitation, has prompted scholars to revisit traditional philosophical systems for ecological wisdom. Among the world's major religious traditions, Buddhism offers a distinctive ecological perspective grounded in compassion, non-violence, interdependence, and moderation. Although classical Buddhist scriptures do not explicitly discuss ecology as a scientific discipline, their ethical teachings provide valuable principles for environmental conservation and sustainable living. Central concepts such as *Pratityasamutpada* (Dependent Origination), *Anicca* (Impermanence), *Anatta* (Non-self), *Ahimsa* (Non-violence), and *Karuṇa* (Compassion) emphasize the interconnectedness of all forms of life and advocate responsible human interaction with nature. This paper explores the philosophical foundations of Buddhist ecology and examines their relevance in addressing modern environmental challenges. It further discusses how Buddhist ecological ethics support biodiversity conservation, sustainable resource management, climate resilience, and environmental justice. By integrating Buddhist ecological principles with contemporary sustainability frameworks, including the United Nations Sustainable Development Goals (SDGs), the study demonstrates that Buddhist philosophy provides a holistic ethical foundation for promoting ecological harmony and long-term environmental sustainability. The article argues that Buddhist ecological wisdom remains highly relevant for fostering environmentally responsible societies in the twenty-first century.

KEYWORDS: Buddhist Ecology, Environmental Ethics, Sustainable Development, Interdependence, Compassion.

1. INTRODUCTION

Environmental degradation has emerged as one of the defining challenges of the twenty-first century. Climate change, rapid urbanization, deforestation, biodiversity loss, water scarcity, soil degradation, and increasing pollution threaten both ecological stability and human well-being. According to the Intergovernmental Panel on Climate Change (IPCC, 2023), anthropogenic activities have significantly accelerated global warming, resulting in severe environmental and socio-economic consequences. Similarly, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019) reports that nearly one million plant and animal species face the risk of extinction due to habitat destruction, overexploitation, pollution, invasive species, and climate change. These environmental crises underscore the need for ethical and philosophical approaches that complement scientific and technological solutions.

Buddhism, one of the oldest philosophical and religious traditions in the world, offers profound insights into the relationship between humans and nature. Although the term "ecology" is absent from ancient Buddhist scriptures, Buddhist teachings inherently promote ecological harmony through values such as compassion (*Karuna*), loving-kindness (*Metta*), non-violence (*Ahimsa*), mindfulness, moderation, and respect for all living beings. Rather than viewing humans as separate from nature, Buddhism regards all life forms as interconnected through the principle of *Pratityasamutpada* (Dependent Origination), which explains that all phenomena arise through mutual dependence and causal relationships (Harvey, 2013).

Buddhist philosophy challenges anthropocentric perspectives by emphasizing that humans are an integral part of the natural world rather than its masters. This holistic worldview encourages responsible consumption, conservation of biodiversity, and sustainable utilization of natural resources. The ethical principle of the Middle Path (*Majjhima Patipada*) discourages excessive consumption and promotes balanced living, aligning closely with contemporary concepts of sustainable development and circular resource use (Kaza, 2000).

In recent decades, Buddhist ecological thought has gained increasing attention within environmental ethics, conservation biology, and sustainability studies. Scholars argue that Buddhist values can contribute meaningfully to addressing climate change, biodiversity

conservation, environmental justice, and sustainable lifestyles (Tucker & Williams, 1997). Moreover, Buddhist-inspired conservation initiatives in countries such as Bhutan, Thailand, Sri Lanka, and Japan illustrate how religious ethics can influence environmental governance and community-based resource management. The integration of Buddhist ecological principles with modern sustainability frameworks, including the United Nations Sustainable Development Goals (SDGs), provides opportunities for developing holistic environmental policies that balance economic development with ecological integrity and social well-being (United Nations, 2015). By fostering mindfulness, compassion, and ecological responsibility, Buddhism offers valuable ethical guidance for achieving long-term environmental sustainability. Therefore, this study examines the philosophical foundations of Buddhist ecology and evaluates its contemporary relevance in addressing global environmental challenges. It highlights how Buddhist ecological ethics can inspire sustainable development and strengthen humanity's relationship with the natural environment.

2. Objectives

- To examine the ecological principles embedded in Buddhist philosophy and teachings.
- To evaluate the relevance of Buddhist ecological ethics in addressing contemporary environmental challenges and promoting sustainable development.

3. METHODOLOGY

This study is based on a qualitative and descriptive research design, employing a systematic review of secondary data to examine the ecological concepts embedded in Buddhist philosophy and their relevance to contemporary environmental sustainability. Since the research is conceptual in nature, no primary field survey or experimental investigation was conducted.

Secondary information was collected from a wide range of authentic academic sources, including peer-reviewed journal articles, books on Buddhist philosophy and environmental ethics, reports published by international organizations such as the Intergovernmental Panel on Climate Change (IPCC), the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and the United Nations (UN). Classical Buddhist texts, including the *Tripitaka*, along with scholarly interpretations of Buddhist ecological thought, were also consulted to establish the philosophical foundation of the study. The collected literature was analyzed using the thematic content analysis method. Relevant themes such as

Dependent Origination (*Pratityasamutpada*), Compassion (*Karuna*), Non-violence (*Ahimsa*), Mindfulness (*Sati*), Impermanence (*Anicca*), and Sustainable Consumption were identified and interpreted in relation to modern ecological principles and sustainable development. Furthermore, selected case studies from Thailand, Bhutan, and Sri Lanka were examined to illustrate the practical application of Buddhist ecological ethics in environmental conservation and natural resource management. The methodology ensures a comprehensive understanding of Buddhist ecological philosophy while linking ancient ethical principles with contemporary environmental issues. By integrating philosophical analysis with recent environmental literature, the study provides a multidisciplinary perspective on the contribution of Buddhist teachings to sustainable development and ecological conservation.

4. Conceptual Framework: Ecology in Buddhist Philosophy

The term ecology refers to the scientific study of the relationships among living organisms and their physical environment (Odum & Barrett, 2005). Although Buddhism predates modern ecological science by more than two millennia, its philosophical teachings embody ecological principles that emphasize harmony, interconnectedness, and ethical responsibility toward all forms of life. Rather than treating humans as separate from nature, Buddhism views the natural world as an interconnected system in which the well-being of every living being depends upon the well-being of others (Kaza, 2000).

One of the most significant ecological concepts in Buddhism is *Pratityasamutpada* (Dependent Origination). This doctrine explains that all phenomena arise through causes and conditions and that nothing exists independently. Every organism, ecosystem, and environmental process is interconnected within a web of mutual dependence (Harvey, 2013). From an ecological perspective, this principle closely resembles the modern understanding of ecosystem interactions, where disturbances in one component inevitably affect the entire system.

Another important principle is *Anicca* (Impermanence), which teaches that all natural and social phenomena are continuously changing. Forests, rivers, mountains, climates, and living organisms evolve through natural cycles of birth, growth, decay, and renewal. Recognizing impermanence encourages sustainable resource management because environmental degradation disrupts these natural cycles and threatens ecological resilience (Tucker & Williams, 1997). The doctrine of *Anatta* (Non-self) further strengthens ecological thinking by rejecting the notion of a permanent, isolated self. Instead, Buddhism teaches that human

identity is inseparable from the surrounding environment. This understanding discourages selfish exploitation of natural resources and promotes collective responsibility for environmental conservation. Buddhist philosophy also emphasizes mindfulness (*Sati*), encouraging individuals to become aware of the environmental consequences of their actions. Mindful consumption, waste reduction, energy conservation, and respect for biodiversity are practical expressions of ecological responsibility. In this way, Buddhism provides an ethical framework that complements scientific approaches to sustainability by addressing the moral dimensions of environmental behavior. Consequently, Buddhist ecology extends beyond environmental protection to encompass a holistic worldview in which humans, animals, plants, and ecosystems are regarded as interdependent members of a shared ecological community. This perspective provides a valuable philosophical foundation for achieving sustainable development in the modern world.

5. Core Ecological Principles in Buddhism

Interdependence of All Living Beings

Interdependence forms the cornerstone of Buddhist ecological philosophy. According to the doctrine of Dependent Origination, no living organism exists in isolation. Humans rely on forests for oxygen, rivers for water, soil for agriculture, and biodiversity for ecological balance. Likewise, ecosystems depend upon complex interactions among plants, animals, microorganisms, climate, and natural resources. Recognizing this interconnectedness encourages environmental stewardship rather than domination of nature (Harvey, 2013). Modern ecological science similarly recognizes ecosystems as networks of interdependent relationships. The degradation of forests, wetlands, coral reefs, or biodiversity therefore threatens ecological stability as well as human survival.

Compassion (*Karuna*) Toward All Living Beings

Compassion is one of the central ethical teachings of Buddhism. Unlike compassion limited to human beings, Buddhist *Karuna* extends equally to animals, plants, and all sentient life. Environmental destruction causes suffering not only to humans but also to countless other species. Consequently, environmental conservation becomes an ethical obligation rooted in compassion. Compassion encourages wildlife protection, habitat restoration, biodiversity conservation, and responsible use of natural resources. It also promotes environmental justice by recognizing that environmental degradation disproportionately affects vulnerable communities and future generations (Kaza, 2000).

Non-violence (*Ahimsa*)

The Buddhist principle of *Ahimsa*, or non-violence, discourages harm to any living being. While often associated with interpersonal ethics, *Ahimsa* also has profound ecological implications. Activities such as deforestation, excessive mining, pollution, illegal wildlife trade, and unsustainable exploitation of ecosystems represent indirect forms of violence against nature. Practicing *Ahimsa* encourages sustainable agriculture, ecological restoration, ethical treatment of animals, pollution control, and conservation of natural habitats. It also supports environmental policies that minimize ecological damage while promoting long-term sustainability (Tucker & Williams, 1997).

The Middle Path and Sustainable Consumption

The Middle Path (*Majjhima Patipada*) advocates moderation by avoiding both excessive indulgence and extreme deprivation. Applied to environmental management, this principle encourages responsible consumption and discourages overexploitation of natural resources. Modern environmental challenges are closely linked to unsustainable production and consumption patterns. Excessive extraction of fossil fuels, deforestation, overconsumption of water, and accumulation of waste exceed the Earth's ecological capacity. Buddhist teachings encourage individuals and societies to satisfy genuine needs while avoiding unnecessary consumption, thereby reducing ecological footprints and supporting sustainable lifestyles (United Nations, 2015).

Respects for Biodiversity and Nature

Buddhist literature frequently portrays forests, mountains, rivers, and wildlife as sacred spaces for meditation and spiritual development. Many Buddhist monasteries historically protected surrounding forests, indirectly contributing to biodiversity conservation. Respect for biodiversity reflects the understanding that every species possesses intrinsic value within the ecological system. Contemporary conservation efforts inspired by Buddhism emphasize wildlife protection, afforestation, watershed conservation, and community-based forest management. These practices contribute to ecological resilience while maintaining harmony between humans and nature (Chapple, 1993). Collectively, these ecological principles demonstrate that Buddhism offers not merely a religious doctrine but a comprehensive ethical framework capable of supporting contemporary environmental sustainability, conservation, and responsible development.

Table No. - 1. Selected Environmental Indicators and Their Relevance to Buddhist Ecological Ethics.

Environmental Issue	Latest Data	Buddhist Ecological Principle	Source
Global average temperature increase	Approximately 1.1°C above the 1850-1900 average (2011-2020)	Middle Path, mindful consumption	IPCC (2023)
Species threatened with extinction	About 1 million species are threatened globally	Compassion (<i>Karuṇā</i>), Non-violence (<i>Ahimsa</i>)	IPBES (2019)
Global forest area	Forests cover about 31% of the Earth's land area	Interdependence, forest conservation	FAO (2020)
Annual forest loss	Around 10 million hectares per year (2015-2020)	Respect for nature, sustainable resource use	FAO (2020)
Bhutan's constitutional forest cover	Minimum 60% forest cover mandated	Buddhist environmental ethics	Ura et al. (2012)
Sustainable Development Goals	17 SDGs adopted by the United Nations	Responsible living and ecological harmony	United Nations (2015)

Source: Food and Agriculture Organization (FAO). (2020), Global Forest Resources Assessment 2020. Rome: FAO.

Intergovernmental Panel on Climate Change (IPCC). (2023). Climate Change 2023: Synthesis Report.

6. Buddhist Ecology and Environmental Sustainability

Buddhist ecological philosophy offers practical ethical guidance for addressing contemporary environmental challenges. Its emphasis on compassion, interdependence, non-violence, and moderation aligns closely with the principles of sustainable development. As environmental degradation intensifies due to climate change, biodiversity loss, pollution, and unsustainable resource exploitation, Buddhist values provide a moral framework that complements scientific and technological approaches to environmental management.

Climate Change Mitigation: Climate change has become one of the greatest threats to humanity and ecosystems. Rising global temperatures, extreme weather events, melting glaciers, sea-level rise, and changing rainfall patterns affect biodiversity, agriculture, water resources, and human livelihoods (IPCC, 2023). From a Buddhist perspective, climate change is closely linked to greed (*Lobha*), ignorance (*Moha*), and excessive consumption, which encourage overexploitation of natural resources. The Buddhist principle of the Middle Path advocates moderation in consumption and encourages individuals to reduce unnecessary use of energy and natural resources. Mindful living, reduced carbon footprints, renewable energy

adoption, and sustainable lifestyles reflect Buddhist ecological ethics. By promoting simplicity rather than materialism, Buddhism supports global efforts to mitigate climate change and encourages responsible environmental citizenship.

Biodiversity Conservation: Biodiversity is essential for maintaining ecosystem stability and supporting human well-being. However, habitat destruction, pollution, invasive species, climate change, and overexploitation have accelerated species extinction worldwide (IPBES, 2019). Buddhist teachings emphasize compassion toward all living beings and recognize the intrinsic value of every species. The principle of *Ahimsa* discourages unnecessary harm to animals and plants, while *Karuna* encourages protection of wildlife and ecosystems. Conservation of forests, wetlands, rivers, and endangered species reflects Buddhist ethical responsibility. These teachings reinforce modern biodiversity conservation strategies by promoting coexistence between humans and nature.

Sustainable Resource Management: Unsustainable extraction of forests, minerals, freshwater, and fossil fuels has contributed significantly to ecological degradation. Buddhist philosophy encourages mindful use of natural resources and discourages greed-driven exploitation. The doctrine of Dependent Origination reminds individuals that environmental damage ultimately affects human societies because ecosystems are interconnected. Sustainable agriculture, water conservation, waste reduction, recycling, afforestation, and ecosystem restoration represent practical applications of Buddhist ecological ethics. Such practices contribute to long-term ecological resilience while ensuring that future generations can meet their needs.

Environmental Education and Ecological Ethics: Environmental sustainability requires not only scientific knowledge but also ethical awareness. Buddhism emphasizes mindfulness (*Sati*), encouraging individuals to recognize the consequences of their actions on both society and nature. Environmental education inspired by Buddhist values promotes ecological responsibility, conservation ethics, and sustainable behavior among communities. Educational institutions, monasteries, and community organizations can integrate Buddhist ecological principles into environmental awareness programs. Such initiatives foster respect for biodiversity, responsible consumption, and active participation in environmental conservation, thereby strengthening the relationship between humans and the natural environment.

Table No. - 2. Buddhist Ecological Principles and Their Contemporary Environmental Applications.

Buddhist Principle	Ecological Meaning	Contemporary Environmental Application	Related SDG(s)
<i>Pratityasamutpada</i> (Dependent Origination)	All beings and natural systems are interconnected	Ecosystem-based management, integrated watershed management	SDG 15, SDG 13
<i>Ahimsa</i> (Non-violence)	Avoid causing harm to living beings	Wildlife conservation, reduction of deforestation, sustainable agriculture	SDG 15
<i>Karuna</i> (Compassion)	Compassion for all forms of life	Biodiversity conservation, animal welfare, environmental justice	SDG 15, SDG 3
<i>Metta</i> (Loving-kindness)	Universal goodwill towards all living beings	Community-based conservation, environmental education	SDG 4, SDG 15
<i>Majjhima Patipada</i> (Middle Path)	Moderation in consumption and lifestyle	Sustainable production and consumption, waste minimization	SDG 12
<i>Sati</i> (Mindfulness)	Awareness of one's actions and their impacts	Responsible resource use, energy conservation, low-carbon lifestyles	SDG 12, SDG 13
<i>Anicca</i> (Impermanence)	Recognition of continual environmental change	Climate change adaptation and disaster resilience	SDG 13
<i>Anatta</i> (Non-self)	Humans are inseparable from nature	Holistic environmental planning and ecosystem conservation	SDG 15

Source: Adapted from Chapple (1993), Harvey (2013), Kaza (2000); Tucker & Williams (1997), United Nations (2015).

7. Buddhist Ecology in Practice

Thailand provides one of the most recognized examples of Buddhist-inspired environmental conservation. Since the 1980s, Buddhist forest monks have actively protected forests from illegal logging and land encroachment. A unique conservation practice known as tree ordination involves wrapping saffron robes around large trees, symbolically ordaining them as monks. This religious act discourages tree cutting by associating forests with spiritual significance. These initiatives have strengthened community participation in forest conservation, increased awareness of biodiversity protection, and reduced deforestation in several regions of Thailand (Darlington, 2012). The movement demonstrates how Buddhist ethics can influence environmental governance through cultural and spiritual values rather than legal enforcement alone. Bhutan integrates Mahayana Buddhist philosophy into national

development through its concept of Gross National Happiness (GNH). Unlike conventional economic indicators, GNH balances economic progress with environmental conservation, cultural preservation, and social well-being. The Constitution of Bhutan requires that at least 60% of the country's land remain under forest cover, making it one of the world's leading examples of conservation-oriented governance. Bhutan is also recognized as a carbon-negative country, absorbing more carbon dioxide than it emits due to extensive forest conservation and renewable hydropower development (Ura et al., 2012). Buddhist values of harmony with nature have significantly shaped these environmental policies. In Sri Lanka, Buddhist temples and monastic communities have historically contributed to the conservation of forests, sacred groves, reservoirs, and wildlife habitats. Many sacred forests surrounding ancient temples have been protected for centuries because of their religious importance. Modern Buddhist organizations in Sri Lanka continue to promote tree plantation campaigns, watershed conservation, plastic waste reduction, and environmental education. Community participation inspired by Buddhist teachings has strengthened local conservation efforts while preserving ecological and cultural heritage (De Silva, 1998). These case studies illustrate that Buddhist ecological principles are not merely philosophical ideals but practical approaches that can effectively support biodiversity conservation, sustainable resource management, climate action, and community-based environmental governance.

8. DISCUSSION

The analysis demonstrates that ecological consciousness is deeply embedded in Buddhist philosophy, despite the absence of the modern term ecology in early Buddhist scriptures. Core doctrines such as *Pratityasamutpada* (Dependent Origination), *Anicca* (Impermanence), and *Anatta* (Non-self) collectively emphasize the interconnectedness of all life forms and the dynamic nature of ecosystems. These principles encourage humans to recognize that environmental degradation ultimately affects all living beings, including themselves. Ethical values such as *Karuna* (Compassion), *Metta* (Loving-kindness), and *Ahimsa* (Non-violence) further strengthen the ecological dimension of Buddhism by promoting respect for biodiversity and discouraging the exploitation of nature. The Middle Path advocates moderation in consumption, which directly supports sustainable resource use and responsible lifestyles. Consequently, Buddhist philosophy provides a comprehensive ethical framework that complements scientific ecology by integrating environmental responsibility with moral and spiritual development. The study indicates that Buddhist ecological ethics remain highly relevant for addressing modern environmental crises. Contemporary issues such as climate

change, biodiversity loss, pollution, deforestation, and unsustainable consumption are fundamentally linked to excessive materialism and irresponsible resource use. Buddhist teachings encourage mindfulness, simplicity, and moderation, thereby promoting environmentally sustainable behavior. The case studies from Thailand, Bhutan, and Sri Lanka illustrate the practical application of Buddhist ecological principles in forest conservation, biodiversity protection, and environmental governance. Bhutan's Gross National Happiness model demonstrates how Buddhist ethics can influence national development policies by balancing economic growth with environmental sustainability. Similarly, community-based conservation initiatives led by Buddhist monks show that religious values can effectively mobilize public participation in ecological restoration. Furthermore, Buddhist ecological philosophy aligns closely with several United Nations Sustainable Development Goals (SDGs), including SDG 13 (Climate Action), SDG 15 (Life on Land), SDG 6 (Clean Water and Sanitation), and SDG 12 (Responsible Consumption and Production). By fostering ecological awareness, ethical responsibility, and harmonious coexistence between humans and nature, Buddhist philosophy offers valuable guidance for achieving long-term environmental sustainability.

Table No. -3. Synthesis Matrix of Buddhist Ecological Concepts and Environmental Outcomes.

Buddhist Ecological Concept	Environmental Value Promoted	Environmental Challenge Addressed	Expected Sustainability Outcome
Dependent Origination	Ecological interconnectedness	Ecosystem degradation and habitat fragmentation	Improved ecosystem resilience and integrated ecosystem management
Compassion	Respect for all living beings	Biodiversity loss and wildlife exploitation	Enhanced biodiversity conservation and species protection
Non-violence	Prevention of harm to nature	Deforestation, pollution, and overexploitation	Reduced environmental degradation and ecological restoration
Mindfulness	Environmentally responsible behaviour	Excessive consumption and waste generation	Sustainable consumption and reduced ecological footprint
Middle Path	Moderation in resource use	Unsustainable production and consumerism	Efficient resource utilization and circular economy practices
Impermanence	Adaptation to environmental change	Climate variability and natural hazards	Greater climate resilience and adaptive

			environmental planning
Non-self	Human-nature unity	Anthropocentric exploitation of ecosystems	Strengthened ecological ethics and environmental stewardship
Loving-kindness	Social and ecological harmony	Human-wildlife conflict and environmental injustice	Inclusive conservation and community participation

Source: Author's compilation based on Chapple (1993), Kaza (2000), Tucker and Williams (1997), Harvey (2013), IPCC (2023), IPBES (2019).

8. CONCLUSION

The Buddhist concept of ecology presents a holistic and ethically grounded approach to understanding the relationship between humans and the natural environment. Although developed centuries before the emergence of modern ecological science, Buddhist philosophy embodies principles that are remarkably consistent with contemporary sustainability concepts. Teachings on interdependence, compassion, non-violence, mindfulness, and moderation encourage responsible environmental behavior and emphasize the intrinsic value of all forms of life. In the context of escalating global environmental challenges, Buddhist ecological ethics provide a meaningful framework for integrating moral responsibility with environmental conservation. The successful conservation initiatives observed in Buddhist societies demonstrate that spiritual values can significantly contribute to biodiversity protection, climate resilience, and sustainable development. Therefore, incorporating Buddhist ecological wisdom into environmental education, policy formulation, and community participation can strengthen global efforts toward achieving ecological balance and environmental sustainability for present and future generations.

REFERENCES

1. Chapple, C. K. (Ed.). (1993). Buddhism and ecology: The interconnection of dharma and deeds. Harvard University Press.
2. Darlington, S. M. (2012). The ordination of a tree: The Buddhist ecology movement in Thailand. State University of New York Press.
3. De Silva, L. (1998). Buddhist and ecological perspectives. World Fellowship of Buddhists Review, 35(2), 12-20.
4. Harvey, P. (2013). An introduction to Buddhism: Teachings, history and practices (2nd ed.). Cambridge University Press.

5. Intergovernmental Panel on Climate Change. (2023). Climate change 2023: Synthesis report. IPCC.
6. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (2019). Global assessment report on biodiversity and ecosystem services. IPBES.
7. Kaza, S. (2000). Dharma rain: Sources of Buddhist environmentalism. Shambhala Publications.
8. Odum, E. P., & Barrett, G. W. (2005). Fundamentals of ecology (5th ed.). Thomson Brooks/Cole.
9. Tucker, M. E., & Williams, D. R. (Eds.). (1997). Buddhism and ecology. Harvard University Press.
10. United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. United Nations.
11. Ura, K., Alkire, S., Zangmo, T., & Wangdi, K. (2012). A short guide to Gross National Happiness Index. Centre for Bhutan Studies.