

“The role of Environmental and Spiritual Ethics in Galvanizing Nature Based Solutions”

Introduction

We are currently facing unprecedented multiple crises of climate change, pollution, biodiversity loss, zoonotic diseases amongst many others. Unsustainable human activities continue to degrade vast areas of the planet and if left unchecked could result in widespread ecosystem collapse and further biodiversity loss. The climate crisis continues to be the greatest existential threat to humanity and will exacerbate challenges of poverty, food security, water supplies, natural disaster resilience and peace. This crisis transcends all barriers and will negatively impact everybody as despite drastic developments over time, all civilisations remain firmly rooted in nature and cannot afford to destroy it. We must act quickly to reverse this trend before the negative impacts on human beings, and the planet, become irreversible.

Many consider humanity to have entered the age of the Anthropocene, whereby the human race is the single most influential factor dictating the current and future state of planet earth. There are no quick technical fixes to solve the climate crisis and our overexploitation of natural resources. We cannot afford to be complacent and hope that science and technology alone will solve these pressing problems. Instead, transitioning to a more sustainable future requires the engagement of the full spectrum of society and the employment of innovative approaches that address climate change and protect the natural environment based on behavioural and environmentally ethical changes in production and consumption patterns. One of these approaches, and the focus of this paper, is that of Nature-Based Solutions (NBS), an emerging concept with great potential. This paper will outline what NBS are, how the UN is supporting these practices, how FBOs are already engaging with NBS and what can be done to scale up action. This will be framed in the context of environmental and spiritual ethics that will help galvanise momentum to adopt nature-based solutions.

What are Environmental and Spiritual Ethics?

Environmental ethics can be described as a set of norms describing how humans should behave towards nature and its resources. These norms reflect a moral attitude concerning what is viewed as good/permisible or bad/sinful ^[1]. Given that the climate crisis is rooted in a complex web of economic, social and cultural factors, as well as belief systems, social attitudes and perceptions, it is worth considering how these ethics impact our ability to address it. The unsustainable socio-economic systems, and consumption and production patterns that dominate much of the world today, arguably reflect belief systems and social attitudes. To make global human activity more sustainable therefore requires an examination and potential return of the values, beliefs and ethics that drive human beings and their relationship with the natural environment.

For many people, these values and ethics will be derived from or inspired largely by their particular faith. There exists a multitude of different spiritual traditions and religions throughout the world, varying in size from a few hundred adherents to many millions, reflecting the incredibly diverse cultures of the world. Overall, roughly 85% of the global population is affiliated with a religion or faith, with spiritual beliefs influencing people’s worldviews and decisions ^[2]. Despite the great diversity of religions and beliefs, virtually all share a common ethic based on harmony with nature and an obligation to preserve it from destruction. All faith beliefs explore the relationship between man and nature and whilst these perspectives vary,

each acknowledges that environmental destruction will have negative impacts. However, most religions arose at a time when people were much more intimately connected to the natural world, gaining their livelihoods directly from it. With technological progress, the impacts of globalisation, ever-growing urbanisation and increasing mechanisation of agriculture and food production, people today, particularly in mega and big cities, are more detached from nature than ever before. Therefore, there often exists a disconnect between what is contained within religious texts and teachings, and the current practices of the adherents of those religions ^[1].

Therefore, in this time of unprecedented global environmental degradation, a new environmental ethic based on universally shared values is required, one that places a greater value on nature and connects to spiritual beliefs. This duty of care must be expanded to all places and not only address today's pressing challenges, but factor in future generations that are to come so they do not inherit a severely damaged planet. This means re-evaluating the irrationality of valuing economic growth and material wealth over the health of the natural ecosystems, upon which all life relies. This is where religious teachings can play an important role in helping people rediscover old ties with nature still dormant in the collective human conscience and found in scripture. A collective environmental ethic does not mean homogenising the diverse perspectives religions offer. Rather it entails embracing diversity and creating a common notion of a moral duty to protect the environment that can serve to bridge religious divides whilst incorporating the expertise, knowledge and practices that different faiths provide. The ultimate aim should be that humans learn to live in harmony with nature and with one another. The destruction of nature is a catalyst for most issues facing the world, and there is an intricate linkage between a healthy environment, peace, prosperity and development ^[1]. Therefore, all faiths should acknowledge the universal threat posed by the environmental crisis and collectively resolve to address it. As shall be discussed and demonstrated, nature-based solutions are one area where faith actors can draw on ethical traditions and spiritual guidance. Combining these with contemporary scientific knowledge and best practice will serve to make faith contributions even more effective.

The most common perspective is that of stewardship in Abrahamic religions, or interdependence in Buddhism and Hinduism. As advocated by Pope Francis in his encyclical *Laudato Si, On Care for Our Common Home*, this position holds that God gave earth to man to care for, and that destruction of the natural environment is a destruction of God's own creation. The *Laudato Si* explains the linkages between injustice, poverty, exclusion and environmental degradation and is highly critical of excessive consumerism and materialism. This grants an intrinsic value to nature, but still acknowledges that humans have a special and unique responsibility in protecting **all** creation as the dominant species. As we enter the dawn of the Anthropocene, this responsibility is more significant than ever and believers are compelled to consider their role as environmental stewards ^[3]. Our religions, or secular moral philosophies can guide us to make more responsible choices regarding the environment.

The UN and Environmental Ethics

The call for the consideration of environmental ethics and connection to spiritual beliefs is not new. Several global conferences, seminars and publications have addressed different elements over the past thirty years. In this section, a list of where the UN and in particular UNEP, has contributed to the dialogue is mentioned.

The World Charter for Nature, 1982, emphasised that "Every form of life is unique, warranting respect regardless of its worth to man, and to accord other organisms such recognition, man must be guided by a moral code of action" ^[4].

The UNEP Seoul Declaration on Environmental Ethics was adopted in 1997. The declaration proposed to develop a new value system: where 'human greed and excessive materialism' are replaced by 'an ethical paradigm' ^[5].

The 1998 General Assembly (GA) resolution 53/22, proclaimed 2001 as the UN Year of Dialogue among Civilizations. The resolution called on governments and the UN to plan and implement cultural, educational and social programmes to promote the concept of dialogue among civilizations, including through conferences and seminars and disseminating information ^[6] (UN, 1998).

The 2000 Millennium Declaration included respect for nature among the six fundamental values essential to international relations in the twenty-first century ^[7].

In 2000, UNEP, The Parliament of World's Religions, Yale Forum on Religion and Ecology and other partners published "Earth and Faith: A Book of Reflection for Action" ^[8] introduced these issues and made linkages between spiritual beliefs, environmental issues and the moral responsibility towards them. This effort, twenty years later, has resulted in a newer version titled "Faith for Earth: A Call for Action" ^[9] that is being launched during the Faith for Nature conference.

There were several international conferences on Dialogue among Civilizations, including: Vilnius, Lithuania (2001) ^[10]; Tokyo and Kyoto, (2001) ^[11]; and Tehran (June 2001) ^[12], which adopted the Tehran Declaration on Environment, Religion and Culture. The latter, promoted environmental education and religion and called for environmentally responsible behaviour.

Furthermore, the International Conference on the "Dialogue among Civilizations, Cultures and Peoples" in 2005 and the subsequent Forum in the same year emphasised, the need for a new shared vision of a common destiny ^[13].

UNEP, UNESCO and other partners held in 2016 in Tehran the second International Seminar "Environment, Culture and Religion – Promoting Intercultural Dialogue for Sustainable Development" examined the nexus of environment, religion and culture, as a direct response to the 2030 Agenda for Sustainable Development ^[14].

What are Nature-Based Solutions?

Nature-Based Solutions is an umbrella term for various approaches that share common features and are designed to protect the natural environment whilst addressing societal challenges. These approaches are inspired and supported to work with nature itself and its capacity to self-heal. Human wellbeing and biodiversity depend directly on healthy, diverse and resilient ecosystems, with [Nature-Based Solutions](#) acting to protect, restore and sustainably manage them and the range of essential services they provide. NBS can become an important strategy in climate change mitigation and adaptation, ecosystem restoration and fighting pollution by addressing major related issues such as food and water security or natural disaster resilience. Nature-Based Solutions should be flexible, locally adapted, systemic and grounded in the best

environmental science and knowledge to ensure they are properly implemented to create the most benefits, for people and planet ^[15].

By drawing upon nature itself, NBS' also have the potential to be one of the most cost-effective and efficient strategies we have against climate change and environmental degradation. They primarily work with and around natural systems, instead of relying on expensive technologies, feats of engineering or the use of conventional infrastructure materials of steel and concrete. Therefore, investing in Nature-Based Solutions means utilising renewable natural processes and local resources whilst decreasing the use of costly external inputs of energy, money, materials and human management. This makes Nature-Based Solutions very appealing routes to sustainable development and one that is more open to broader participation given they are more environmentally affordable than other strategies ^[16].

Many Nature-Based Solutions draw upon historical knowledge and practices. With a well-developed strategy and a deep understanding of local ecosystems, organisations can contribute to these processes. Nature-based solutions should be employed not only to protect existing ecosystems, but restore previously degraded ones.

An example of an effective nature-based solution is [mangroves](#). Mangroves have long acted as a great buffer between the land and sea, serving to protect local communities from strong winds, storms and coastal erosion. They also support fishing, supply water resources, provide timber, are effective carbon sinks and important sites of biodiversity. Therefore, when mangroves are degraded and their resources depleted, local communities risk food and water insecurity, as well as becoming much less resilient to natural disasters. So, mangroves supply critical services and their destruction is bad for both the environment and people in surrounding areas ^[17]. Restoring them creates benefits across the board, ensuring a more sustainable future. Nature-based solutions can also be synergised with *grey* infrastructure when necessary to create *hybrid* solutions. An example of this would be the systems of dikes and sea gates constructed along the [Dutch coast](#) ^[18].

The UN and Nature-Based Solutions

The United Nations has embraced the benefits of Nature-Based Solutions, with the [Climate Action Summit](#), convened by the UN Secretary-general, in September 2019, bringing NBS to global political attention as an important strategy in climate change mitigation and adaptation. To this end an NBS Coalition co-led by China and New Zealand, launched the [NBS for Climate Manifesto](#) that seeks to mobilise support from governments, the private sector, civil society and international organisations to massively scale up land restoration activities worldwide ^[19]. This has already been accompanied by nearly [200 initiatives](#) from around the world, and organisations of any size can draw inspiration from these as an example of best practice ^[20].

Indeed, the UN Environment Programme has also called for “an urgent, massive investment effort to conserve and restore biodiversity and ecosystems, and drastic change in the way we interact with and depend on nature, to unlock its full potential” ^[16]. UNEP estimates that by working with nature, we have the potential to reduce emissions by more than a third by 2030. This is especially important as the United Nations has recently launched its [Decade of Ecosystem Restoration](#) and is reviewing national commitments to the Paris Agreement and the Sustainable Development Goals ^[21]. See the various ways how UNEP, with its partners, is committed to nature-based solutions [here](#).

UNEP is working from the ground up, with small communities and at the highest levels, to carry out nature-based solutions. This can be through raising awareness around NBS and supporting a wide range of restoration initiatives such as agroforestry, reforestation and afforestation programmes, particularly in tropical region, to reduce land degradation while soaking up carbon. UNEP is also assisting countries define, implement and monitor their national biodiversity action plans and ecosystem-based climate change adaptation plans ^[16].

Finally, *Strengthening Actions for Nature to Achieve the Sustainable Development Goals* is the theme for the upcoming United Nations Environment Assembly (UNEA5) to be held in February 2021. This session is intended to “mobilize, motivate and energize member States and stakeholders into sharing and implementing successful approaches and Nature-Based Solutions that contribute to the achievement of the 2030 Agenda” ^[22]. This will bring NBS further into the forefront of global policymaking and environmental action.

Other Multilateral Engagement with Nature-Based Solutions

The European Union is also increasingly invested in nature-based solutions which it describes as “living solutions inspired by, continuously supported by and using nature, which are designed to address various societal challenges in a resource efficient and adaptable manner and to provide simultaneously economic, social and environmental benefits” ^[23]. The European Union believes NBS is a realistic sustainable pathway that will allow for targets of job creation, growth, competitiveness and innovation, whilst tackling global environmental challenges. This forms part of the EU’s *Biodiversity Strategy to 2020*, *Horizon 2020 Programme* and *Green Infrastructure Strategy* for a more sustainable Europe. Significant funding, research and innovation programmes have been directed towards implementing NBS within and beyond EU boundaries ^[23].

There are other multilateral entities that are advocating for NBS. The African Development Bank has also explored whether nature-based solutions are the key to Africa’s climate response ^[24]. Simultaneously the Asian Development Bank has also explored the role of NBS in building resilience, particularly in the greater Mekong sub-region ^[25].

These are important developments as in order to stay within safe planetary boundaries, nature itself, must be brought into development, policymaking and climate solutions in a coherent way and at unprecedented scale ^[26]. The ongoing Covid-19 pandemic has emphasised humanity’s unhealthy relationship with nature and despite immense changes in countries around the world, the climate crisis continues unabated. NBS offers a chance to rethink this relationship and offers numerous opportunities to forge a new sustainable future, one that still accounts for the four dimensions (social, economic, environmental and cultural) of sustainable development.

Faith-Based Organisations and NBS

The Faith for Earth Initiative aims to build on this momentum and increase faith engagement with the ideas and practices of NBS. Fortunately, we have a lot to draw upon as faiths have long been engaged in NBS practices, even if they weren’t necessarily described as such. This following section will demonstrate historical and contemporary examples of faith communities using Nature-Based Solutions and why FBOs can become incredibly important actors in this field.

Roughly 85% of the global population is affiliated with a religion or faith, with spiritual beliefs influencing people's worldviews and decisions. Further, 5% of commercial forests, 10% of habitable lands belong to FBOs and 50% of schools are run by FBOs ^[27]. These figures highlight why FBOs can be an indispensable power in the implementation of nature-based solutions given the extensive land and resources under their control and the educational leverage they have. The influence of faith leaders and the substantial wealth of natural assets of some FBOs are further resources to assist faith actors in such ethical environmental action. However, the influential outreach, credibility and connection with faith followers are the most essential resources that can lead to behavioural change in believers.

Indeed, the concepts and practices of proactive environmental conservation within religions appeared much earlier than the first modern conservation movements in the West during the mid-19th century. Many of these conservation movements themselves emerged from religious organisations and were inspired by faith teachings. As stated above, there is a clear history of environmental consideration within religions and folk traditions, reflected in scriptures and practices, some which pre-date contemporary religions. This rich history is further manifested in the location of sacred sites of worship, many of which are found in areas of natural beauty.

Examples of Faith and Nature-Based Solutions

Ancient Sanskrit texts from India (Mahabharata, Ramayana, Vedas, Upanishads, Bhagavad Gita, Puranas and Smriti), explicitly address the relationship between humans and nature. These are considered some of the oldest religious texts in the world, from which much of Hinduism is descended. Ecology is central to the spiritual worldview in Hinduism and there is significant emphasis concerning environmental ethics, with people expected to live in harmony with nature and recognise that divinity prevails in all elements, including plants, animals, rivers and other natural features. Perhaps the most notable example is the river Ganges being personified as the goddess **Ganga** ^[28]. The Bhagavad Gita instructs to not exploit and shape the environment to fulfil human needs, but instead advocates for a balance in earth's ecosystems and has many prohibitions on harming the environment. There are clear messages of conservation embedded, which can even be viewed as nature-based solutions. For example, there is guidance on not uprooting trees by rivers as it can cause erosion and flooding, as well as preventions on polluting. There are even messages on not harming the sky, which today we might consider the atmosphere. Overall, there is a spirit of non-violence within Hinduism, that extends to all living beings and emphasises that humans are not above nature. This spirit extended to neighbouring religions of Jainism and Buddhism ^[28].

Muslim spiritual ethics teach that such environmental care is not for people alone, but for all life. People are instructed to act as *Khalifa*, or trustee of God, and entrusted with the safekeeping of life on earth ^[1]. The first Global Environmental Forum from an Islamic Perspective, held from 23 to 25 October 2000 in Jeddah, Saudi Arabia, with UNEP as a partner, adopted the Jeddah Declaration on the Environment from an Islamic Perspective. That Declaration advocates for environmental protection and notes that sustainable development from an Islamic perspective is the development and rehabilitation of the Earth in a manner that does not disrupt the equilibrium established by God ^[29].

Faiths and Forests

Another environmental principle that features in Hinduism, and indeed a majority of spiritual and indigenous traditions, is viewing trees as sacred and providing many benefits, both spiritual

and material. Trees and forests have often been revered and protected by various religions, with mention of them regularly found in scriptures. Building on these historical traditions, tree planting and protection initiatives are increasingly popular amongst faith-based organisations. Such initiatives are also affordable and can easily mobilise members of a faith-community to climate action.

Sacred groves are found all throughout the Indian subcontinent and South-East Asia with reference made to them in Hindu, Jain, Daoist, Sikh and Buddhist sacred texts. These groves are usually associated with local temples, monasteries or shrines and situated in pristine natural environments. They are communally protected, with unsustainable practices being banned, such as hunting, logging, clearing or irrigation systems ^[30]. Traditionally they served as sites of prayer and contemplation, as well as providing medicines and renewable resources such as fruits, dry-wood and honey. Today many act as biodiversity hotspots as more and more species are threatened with habitat destruction, both flora and fauna. In areas like Rajasthan, they have also helped prevent desertification and can be considered a precursor to bold initiatives such as the Great Green Wall ^[31].

Japanese Shintoism is grounded in rural agricultural tradition, with ceremonies and practices that guide the relationship between people and nature. A key component of this is the establishment of [Sacred forests](#) (鎮守の森) that have been inherited generation by generation, preserving ancient trees and plants, as well as sustaining animals that rely on them. Many Shinto shrines are built of wood and situated in forests or groves, and spirits (*kami*) are believed to reside in trees ^[32]. These sites serve to emphasise the mutual relationship that binds humans and nature, and these customs and practices could be embedded into nature-based strategies. Further, they also act as biodiversity reservoirs and communities/societies with declining biodiversity are seen to be in decline themselves ^[1].

In Ethiopia, of the only 3% of primary forests that remain, the majority are found in groves protected by [Orthodox churches](#). Ethiopian Orthodox churches were historically designed as symbols of paradise, resembling the garden of Eden and these church forests are closely tied to spiritual practices. Often these tiny native forests lie on only a few hectares adjacent to a church. Yet these forests contain the endemic biodiversity of the Ethiopian highlands that are increasingly being lost to agriculture, cattle grazing and industry ^[33]. Building simple stone walls around them prevents cattle from eating new growth and allows trees to flourish undisturbed, slowly increasing the size of these church forests. This cost-effective nature-based solution is a mild adaptation of a religious practice that has been ongoing for hundreds of years and another example of why faith actors can be so important moving forward ^[34].

The Hima (reserve) system in Islam is another demonstration of organized protected areas that dates back thousands of years. The word “*hima*” in Arabic means a “protected or forbidden place”. Hima was developed by early Muslims to protect trees, regulate grazing and provide socio-economic and environmental benefits for the entire society in the highly arid Arabian Peninsula where conservationist water practices are essential. Different types of Hima existed to stop desertification, deforestation, allow bee-keeping and regulate grazing ^[35]. One criteria for establishing Himas is that it must be established in the way of God; for [public welfare](#). Two examples of large scale Himas established by prophet Mohammad are the cities of Makka and [Medinah](#).

The Maronite Church of Lebanon has protected the forests of Harisa, a WWF Mediterranean Programme “forest hot spot” for over 1000 years. Indeed, the Lebanese flag today features a Cedar tree at the center ^[1].

In Pakistan, rare species of original trees are still found in old Muslim graveyards, due to prohibitions against cutting such trees. This is another example of where endemic species have been preserved due to religious guidance ^[1].

Further, inspired by the scriptures or spiritual principles, some religious sites have been built for novel plantations. Over 50 plants are mentioned in the Qur’an and Sunnah and over 120 in the Bible ^[36]. There now exist Islamic, Biblical, as well as Baha’i botanical gardens, which serve as repositories of biodiversity and offer pilgrims a destination for eco-tourism and a chance to see rare flora.

Eco-Sikh’s [Guru Nanak Sacred Forest](#) project draws upon Sikh principles whilst using the renowned Miyawaki Method in their forestry work. The Eco-Sikh initiative draws upon religious ethics in their integrated approach. This approach centers around a holistic vision that demands that injustice against the environment and people be combatted together. All life relies upon a bounteous nature, and when it is degraded it is the poorest who suffer first and foremost. Hence why Sikh tradition has placed great emphasis on recycling, avoiding waste and limiting the use of resources, alongside a spirit of community sharing of resources. The Guru Nanak Sacred Forest project is reflective of a broader environmental ethic within Sikhism. One that believes that an awareness of the sacred relationship between humans and the environment is necessary for the health of our planet and humanity’s survival. This ethic is not confined to the Sikh community alone, but to all of humanity and nature, advocating that people cease to exert mastery over nature and exist in harmony instead ^[37].

Last but not least, in terms of restoration at a large scale, over the last decade, FBOs have invested finance, lands and labor into scientifically based plantation initiatives. Christian and Muslim groups across Africa have committed themselves to planting millions of trees over the last decade ^[33]. Contemporary Tu BiShvat (New Year of the Trees) in Judaism is also celebrated through tree planting for this ecological awareness day ^[38].

Interfaith Efforts

Overall, many faith communities have long attached importance to trees and protected them for the multiple benefits they provide. These traditions contain a big reservoir of knowledge and best practices that can be drawn upon when implementing nature-based solutions. Whilst, the above examples demonstrate individual faith practices that involve protecting forests and trees, there are also interfaith initiatives. The most notable of these is the Interfaith Rainforest Initiative. The IRI was founded to nurture a worldwide movement for the protection of tropical forests, grounded in the values, ethics and moral guidance of faith communities ^[39]. This initiative is currently working in Brazil, Colombia, Democratic Republic of Congo, Indonesia and Peru in coordination with some of the world’s leading interfaith organisations, including Religions for Peace and the World Council of Churches.

UNEP Faith for Earth, FAO, the Global Catholic Climate Movement and several charitable organizations are engaging with the [Living Chapel](#) on creating a global interfaith movement for creating Living Sacred Spaces. The programme aims to create environmental impacts on a large scale by performing concrete environmental actions promoting peace-building and

environmental sustainability. These Living Sacred Spaces will be hubs for community-led action utilizing recycled materials, wastewater reuse, tree plantation, use of renewable sources of energy and creating new job opportunities for local communities ^[40].

Given the essential role forests play in regulating our environment, the increased interest in forestry amongst FBOs is a positive development. However, it is essential to ensure that tree planting initiatives are done in a rigorous and [scientific manner](#). There are many factors to be considered and we encourage all organisations to thoroughly [inform](#) themselves before starting a project ^[41]. When correctly implemented, combining the traditions of faith with the principles of nature-based solutions, faith based organisations can sustainably transform places they control and be significant contributors to NBS.

[Food Consumption](#)

Faith traditions also impact on food consumption practices. The doctrines of Mahayana Buddhism, Jainism and Hinduism all recommend a vegetarian diet amongst followers due to ahimsa (non-violence) towards human being and all nature ^[1].

Islamic (Halal and Tayyaba) and Jewish (Kosher) norms also prohibit the consumption of pork and mandate certain food preparation methods and dietary regulations. These reflect dietary ethics and laws as regulated in the respective religious texts of each: the Qur'an and Sunnah for Islam and the Torah and Talmud for Judaism. Whilst there exist differences in these regulations, within and between the two faiths, they draw upon religious mandates that exist to prevent corrupting that which God has created ^[42].

Whilst, a plant-based diet has the least negative environmental impacts, there can exist regulations that do minimal ecological harm without being vegetarian or vegan ^[43]. In Christianity during the period of Lent, adherents fast or abstain from certain foods at a time of reflection. Some of these traditions emerged out of a necessity to protect or use a resource sustainably or from a cultural aversion ^[42]. Regardless, these spiritual norms are embedded in everyday life and can be expanded upon to incorporate new developments on sustainable and ethical consumption.

For example, Korean Buddhist monasteries long situated in remote areas have developed diverse and unique culinary styles utilising local, seasonal ingredients. As an increasing number of Koreans take pilgrimages to such sites, they are exposed to this cuisine and faith inspired eating practices. Korean temple foods are celebrated for being sustainably and locally grown, low in calories, modestly portioned and healthy due to its vegetarian principles. This traditionally religious inspired food is becoming an important part of consumer's lifestyles ^[44]. The concept of *alaya consciousness* within (Mahayana) Buddhism sees the enlargement of human desires as the root cause of environmental problems ^[45]. This concept can refer to a more general need to reduce materialism and excessive consumption and serve as an environmental ethic that people can adopt, regardless of their religious perspectives.

Many FBOs have long contributed to addressing [food security issues](#) and hunger around the world. This remains one of the major challenges of the 21st century as the global population continues to grow rapidly and more and more land is allocated for unsustainable agricultural practices. However, a startling third of all food produced goes to waste, enough to feed the world's hungry. Thus, what is required is more equitable distribution of food and a reduction in waste and overconsumption. Sharing food is a recurring and often fundamental part of many

world religions, with adherents encouraged to share amongst those less fortunate. These values can be expanded to include guidance on reducing food waste. Indeed, Pope Francis stated in 2013 that excessive food waste was “like stealing from the table of the poor and hungry” [46]. Religious organisations should encourage their followers to consider food consumption and production patterns and how they can be more ethical and sustainable in their choices. As previously mentioned, faith actors have an important role to play in these processes.

At a time when the world has been devastated from the outbreak of a zoonotic disease (COVID-19), it is essential to consider new food consumption patterns with spiritual traditions able to provide inspiration. The world's faith traditions promote different practices of eating ranging from what to eat during the Christian lent season, to Muslim's fasting during Ramadan or vegetarianism practiced by followers of Hinduism and Buddhism. The core values of religions are demonstrated in adopting a sustainable lifestyle that respects the health of the people and the health of the planet. A comprehensive overview on this matter is addressed by Todd Levasseur's “Religion and Sustainable Agriculture: World Spiritual Traditions and Food Ethics (Culture of the Land)” [47].

Sustainable living:

Lifestyles identify how we live — a set of behaviours, choices, and habits shaped by social, economic, and political spheres of life, reflecting who we are and the society we live in. Lifestyles, individual and collective, are a key element in actualizing the social-ecological transformation toward sustainability that the UN Sustainable Development Goals (SDGs) and Agenda 2030 seek. Targeting a change in lifestyles is an ultimate long-term solution to achieve planetary health and global sustainability. Many of the world's religions and faith traditions harbour untapped resources for implementing more sustainable living and lifestyles [2]. They contain teachings regarding care of the Earth, wise use of natural resources, working for the common good, social justice, and well-being for all which speak to the four dimensions of sustainable development (environmental, social, economic, and cultural sustainability).

The idea of an “ecological civilization” based on Confucianism is finding its way into many levels in China's state administration, the higher education system, and more widely into the whole society. The aspirations of this “ecological civilization” are in accordance with the SDGs of the Agenda 2030 and have made sustainable behaviours and consumption the spine of the religion [48].

In 2015, Hindu leaders published the *Bhumi Devi Ki Jai – A Hindu declaration on climate change*, starting with a famous quote from the Atharva Veda stating that “the Earth is my Mother and I am its creature” [49]. It underlines the fact that what will be done to the planet will be done to humans through the principle of interdependency. These beliefs give significant importance to nature and the planet and are setting the stage for sustainable lifestyles within the context of Hinduism.

Jainism has a lot to contribute to the development of sustainable lifestyles in a faith-based perspective. Jain lay persons, for example, are enjoined to engage in occupations that are not associated with violence and/or destruction of life, and follow a vegetarian diet [50].

A key Buddhist environmental ethic, that of the “principle of circulation”. This is related to the Buddhist view on the cycles of life and the idea of reincarnation or rebirth. If one considers that they will one day be reborn, then one's future prospects are determined by behaviours of

oneself in the present. Therefore, to live in an unsustainable and environmentally unethical way will negatively impact one's future self. Thus, there exists an individualistic as well as collective ethical pressure to care for the environment ^[45].

Some native peoples, especially the Lenapes, indigenous people of the north-eastern woodlands in Canada and the United States, think that all energy on Earth comes from the sun ^[51]. From their point of view, our dependence on fossil fuels is unjustified and problematic. Human activities consume currently about 12.8 terawatts of energy when the sun continuously provides around 800 terawatts to the Earth. We just need to find innovative ways to use this energy effectively.

Faiths celebrate their respective religious festivals throughout the year. For instance, some celebrate the birthday of their religious leader, others celebrate an ancient miracle that changed the lives of early believers. Just like the reasons behind the celebrations, the way people celebrate differs from faith to faith and culture to culture. Some sacrifice animals, some dance, some have family gatherings. Yet these celebrations have become a source of consumption, with large amounts of waste generated and sent to landfills. While celebrating the holy days, we can be conscious of the environment and think about the impact of our actions and festivities.

Almost all faiths have their holy destinations and call their followers to visit these sites. Believers from a variety of cultures and residency locations travel long distances to pray and to redeem their sins. Yet, these holy journeys contribute to environmental degradation through greenhouse gas emissions, since in our modern world we travel long distances by plane, car, or train. It is no longer possible to pilgrim on foot for weeks and months. Moreover, our choices in the pilgrimage site have an impact on the environment. Hotels, restaurants, the means of transportation within the site/city, the products and services we use – all have a certain impact on the environment. Yet, in most cases, we only consider factors like cost, availability, convenience, time efficiency, congestion, and comfort. It is up to us to consider our environmental impact before and during our pilgrimage.

The Green Guide to the Hajj, the first guide to an environmentally sustainable Hajj, was launched in November 2011 to encourage Muslim pilgrims to reduce their impact on the Earth, while arriving in Mecca in Saudi Arabia. The Green Guide for Hajj, a new version, was launched by Global One 2015 and EcoMuslim at the Sacred Land Launch and Celebration of the Green Pilgrimage Network, in Assisi, Italy ^[52], organized by the Alliance of Religions and Conservation (ARC). The Hajj - one of the five pillars of Islam – is amongst the biggest annual pilgrimages in the world (in 2010 some 2.5 million pilgrims attended it), and such massive human activity inevitably has an impact on the environment. This guide offers pilgrims the chance to be mindful of the potential environmental impact of their journey and to make choices to limit any damage.

Integrating sustainability into lifestyles and cultures can be achieved by every individual in his/her everyday life and actions, beyond faith-based aspects of life and living. Promoting sustainable lifestyles needs cross-cutting methods and domains through which each aspect of daily life can be addressed. These methods and domains provide further tools for those practitioners who intend to internalize sustainable lifestyles in their personal lives and own community. Particularly, education, finance, partnerships, and advocacy are key domains in convincing people to live their lives in a sustainable way.

Greening Houses of Worship

In recent years there has been growing momentum for FBOs to [“green” their sites and Houses of Worship](#). A House of Worship is a building, or a structure especially constructed or converted into a place where individuals or a group of people perform religious rituals of devotion. They usually serve as the spiritual centre for communities. Such houses of worship can occupy land as small as a few meters, to structures and facilities that expand for thousands of acres. These are now being transformed into beacons of sustainability through practices of worship and teaching/preaching about environmental care. Further, Houses of Worship are increasingly using sustainable designs, with buildings being constructed or converted to be more eco-friendly, often incorporating principles of Nature-Based Solutions ^[53].

Christian churches have been particularly active in this field, with adherents from all denominations participating in *greening* their churches and surrounding communities. There exist different perspectives on Christian environmental ethics that inspires them to act and this is a rich and growing field of discussion ^[3]. Other massive initiatives have been started in the Islamic world to green mosques around the globe by installing solar systems, water saving devices and planting trees. While many temples and sanctuaries around the world rely on nature for their daily practices, needs and conservation efforts.

Indigenous

One of the most important contributors to nature-based solutions are indigenous people throughout the world. Many indigenous belief systems have long held a reverence for nature, with populations directly sustaining their livelihoods from it. The natural environment provides much of the food and medicine they consume, and the materials required in daily life. Given they are more intimately connected, indigenous people act as environmental guardians with a deep understanding of local ecosystems. Their unique value and belief systems have enabled them to respect and live in harmony with nature, utilising natural resources, but conserving the diversity of life upon which they depend. This involves protecting sacred areas by prohibiting logging, fishing, hunting or even entrance to certain sectors of forests, rivers and streams. Environmental degradation is the main threat to indigenous cultures and ways of life throughout the world and they are heavily invested in protecting it ^[1].

Furthermore, owning, occupying or using around 22% of the world’s surface areas, indigenous people safeguard 80% of the world’s biodiversity and are essential to protecting it ^[54] ¹. However, these areas are often contested, and indigenous people face regular threats to their land rights. Yet “lands managed by indigenous peoples and local communities with secure rights experience lower rates of deforestation, store more carbon, hold more biodiversity, and benefit more people than lands managed by either public or private entities” ^[54]. Overall there is close correlation between areas of biological and cultural diversity with most indigenous populations found in areas of megadiversity. These species-diverse environments in which indigenous peoples live are deeply tied to productive activities and spiritual values. From that

¹ Figures vary on the percentage of land owned by indigenous people given debates on the definition of indigenous and that such populations frequently suffer from a lack of land rights and illegal encroachment into their territory. Some figures state that indigenous groups and local communities amounting to 2.5 billion people, customarily manage over 50% of the global land, but legally on just 10% ^[56]. Other figures again, state that 350 million indigenous people live in over 70 countries, inhabiting nearly 20% of the world’s surface area and 85% of its protected areas frequently in highlight biodiverse tropical rainforests ^[1].

perspective, all creation is sacred and the sacred and secular are inseparable with belief systems preventing the overexploitation of resources.

There has been a tangible uptick in attention concerning the involvement of indigenous knowledge in environmental governance. Many organisations, NGOs and initiatives are now committed to working with indigenous groups to protect their land rights and work together for climate action. A number of international governmental and non-governmental organizations, such as the United Nations Commission on Human Rights, UNESCO, the International Labour Organization (ILO), the Commission on Sustainable Development and its forums on forests, the United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), the World Bank, WWF, IUCN and others, have also integrated the promotion of the rights of indigenous peoples into their respective activities ^[1].

The input of indigenous people has been an important contribution to REDD+ and ICPP ^[55] When indigenous people seek to adapt to novel challenges like climate change, they look for holistic solutions to increase resilience to a wide range of stresses. The intimate knowledge they have of their environment can enable them to make observations and interpretations of natural phenomena that might otherwise pass under the radar of external scientists. For instance, the sensitivity on regional warming by Tibetan pastoralists and exhaustive understandings about the Greenland shark by Pangiirtung Inuit of southern Baffin Island, are astonishing findings for scientists ^[57]

Therefore, climate scientists advocate the respectful acknowledgment of their distinctiveness and rationalization, or the direct assimilation of local knowledge systems into western worldviews of environmental management, and then the expansion of options for governance and action. As such, indigenous knowledge would serve as local expertise, a source of climate history and baseline data, give insights into impacts and adaptation in communities, and in the interim, contribute to formulating research questions and hypotheses, and long-haul community-based monitoring as well ^[58].

Agriculture is a sector that could particularly benefit from the adoption of indigenous practice and knowledge. Globally important indigenous agricultural heritage systems not only sustain livelihoods and preserve the cultural legacy of indigenous people, but also protect fragile landscapes and agrobiodiversity. Amid those, hybrid systems, such as agroforestry and agri-aquaculture have been recognised as effective carbon sinks/sequestration methods. Unlike many contemporary single-species, high input, high-throughput agriculture systems, the agropastoral system of the Maasai, the Dong's rice-fish-duck in China and northern upland agroforestry systems in Tanzania are a few example that take advantage of the ecological characteristics of each species, and make full use by recycling waste generated from food production ^[59]. Whilst these hybrid nature-based systems don't produce food at the necessary scale to feed many populations, there are certainly lessons to be learnt that could be applied in other contexts.

Simultaneously, indigenous fire management practices create a network, or mosaic, of burnt firebreaks, reducing hazardous blazes in the dry-season and modifying the landscape to encourage vegetation regrowth and a more nutrient-rich habitat for all ^[60]. Since unforeseen bushfires have recently taken massive tolls on worldwide forests, these traditional approaches would be viable methods for ecosystem conservation and reforestation of forests. Ultimately principles of nature conservation are intrinsic to indigenous ethics and their input is invaluable for effective nature-based solutions.

Conclusion and Recommendations

Many religions consider humans as stewards of the creator on Earth. Others believe that everything is managed by a higher divine spirit. But all agree that there is an individual and communal responsibility for the future and future generations. This responsibility for future generations is perhaps best manifested by the example from the Iroquois tribe in North America, who would plan ahead for the seventh generation when making decisions, ensuring that they do not tarnish the sacred land upon which future generations will depend ^[1].

The wellbeing of humanity and the functioning of the economy and society ultimately depend upon the responsible management of the planet's finite resources. This involves recognising that environmental conservation is not an impediment to development, but a moral duty and crucial component for future generations by staying within safe planetary boundaries. Every sector and social group in the world have a responsibility to contribute towards a greener, more sustainable future, and religious organisations are no exception. This paper has begun to outline the many ways faith communities can and have contributed to nature-based solutions and the environmental ethics contained within faith traditions that can contribute towards these processes. Now FBOs must look at how they can accelerate and scale-up these contributions, as well as reducing practices that harm the environment.

Recommendations:

1. Interfaith collaboration to form a global platform “Faith for Earth Coalition” to bring the common understanding of religions towards our spiritual and moral responsibility toward earth.
2. Leverage the unique ability of religious institutions to mobilize social networks in addition to a distinct moral standing.
3. Financial resources of faiths be mobilised and invested into new, innovative partnership platforms and sustainability initiatives, such as NBS.
4. Strengthen interfaith collaboration in the implementation of the SDGs contributing to peace-building and environmental sustainability.
5. Inter and Intra-Faith collaboration on building the capacity of faith leaders at all levels to understand the ethical, moral and spiritual responsibility towards earth.
6. Religious and cultural leaders to strengthen educational materials building on ethics, values and cultural norms that raise a future generation linked to moral standards and not material world.
7. Religious scholars to continue engaging with scientists in building guidance for sustainable development that addresses the moral, ethical, spiritual, and practical responses needed to adopt nature-based solutions to environmental challenges and build common ground for collective action
8. Governments embrace religious and cultural diversity, knowledge and sustainable practices as important contributions in building back a better future.
9. Empower UNEP and its partners to continue engaging with religious leaders and engage religious leaders in policy dialogue through the United Nations Environment Assembly.
10. We be self-reflective and question our own ways of thinking. Building systematically updated knowledge and ensuring a self-reflective view around the pros and cons of

engagements must be a constant and deeply contextualized process. There is no one size fits all approach ^[61].

Religion remains one of the most powerful forces in the world that drives social values and behaviour. Today we need profound shifts in values and behaviour to transition to a sustainable future and no institutions are better placed to catalyse such changes than religious ones. Indeed, adherents of a faith need only look into the scriptures for inspiration as all faiths contain a series of ethics relating to the natural environment and guidance on how humans should interact with it. Now is the time to engage and act, for a greener, better and sustainable future.

What is the Faith for Earth Coalition?

The Faith for Earth Initiative established by the United Nations Environment Programme (UNEP), and the expected Coalition, is tasked to strategically engage with faith-based organisations (FBOs) and partnering with them to contribute towards the achievement of the Sustainable Development Goals (SDGs) and Agenda 2030. Various faiths acknowledge humanity’s obligation as environmental stewards and the Initiative seeks to mobilise these faith actors and resources, united around the common goal of sustainable development.

The Faith for Earth programme is a global interfaith initiative aiming at introducing the cultural, spiritual, and ethical dimensions of sustainable development into the means of implementation of the SDGs, especially those related to climate change, life under water and life above land. Faith for Earth has three main goals including: 1) inspiring environmental action by faith leaders and their institutions, 2) green faith-based investments and assets as part of financing for sustainable development, and 3) providing knowledge resources between the scientific-based evidence and religious teachings and sacred scripts. When integrated into the normative work and decision support system of the global environmental governance, these faith-value systems present an important tool for an ethical and transformative approach to finding long-lasting environmental solutions.

The Faith for Earth Coalition is a global multi-stakeholder platform to realize this common vision with the overall aim to facilitate partnerships with faith leaders, faith-based organizations and people of faith at global, regional and local levels in order to inspire, empower and strengthen action and behavioral changes towards achieving the SGDs.

The intended impact shall be achieved through establishing a multi-stakeholder platform for global interfaith dialogue and cooperation between Faith Leaders, faith-based organizations, young people, scientists, policy makers and environmentalists on issues that contribute to solving global environmental challenges. The Faith for Earth Coalition will facilitate policy dialogue and public engagement on environmental sustainability, encouraging innovative approaches to finding long-lasting solutions.

The Faith for Earth Coalition comprises four Coalition Councils:

- The Council of Eminent Leaders: Composed of high-level faith leaders representing major and minor world religions.
- The Youth Council: Composed of young faith leaders and members of youth movements advocating for the protection of the Earth.
- The Network of FBOs: Composed of faith-based organizations with a focus on the environment or those working with (local) faith communities responding to the Sustainable Development Goals.

- The Faith-Science Consortium: Composed of religious scholars, scientists and environmentalists to bridge the gap between environmental science and religions.

The unique value-added of the Faith for Earth Coalition is its impact on interfaith collaboration regarding environmental issues. The Faith for Earth Coalition is an innovative platform for bringing together diverse stakeholders with different backgrounds and beliefs around the issue of environment which undoubtedly affects all humans regardless of worldview. Caring for the Earth, as a common home to all religious followers, is a concern that brings faith-based organizations and religious and spiritual leaders together in mutual understanding, collaboration and respect.

Practices and spiritual expressions by different religions align with many important concepts of environmental ethics, including the value of the natural world, the continuity between human and non-human forms of life, the moral significance of all living beings in the eyes of God and/or in the cosmic order, and the responsibility to live in balance with nature. The Faith for Earth Coalition connects the intrinsic linkages between faith concepts of stewardship and duty of care and environmental sustainability with governmental and multilateral duty holders, to improve the living conditions of all – and leaving no one behind.

Involving young people – a sector of the world population that numbers over three billion – through the establishment of a Youth Council mobilizes a generation of environmentally conscious leaders who will better influence environmental decision-making processes and act responsibly to promote sustainable development.

The Faith-Science Consortium is established as a bridge between the traditionally secular world of science and the world of faith. Policy dialogue and public engagement take place to link environmental policy and science to faith principles and ethical values and vice versa, while scientific findings and traditional faith-based messages around nature and sustainable living are translated into contemporary language that is actionable by people, such as low plastic waste, food waste prevention, low carbon mobility, energy efficiency and circular economy.

The Faith for Earth Coalition builds on the recognition that the full, meaningful and equal participation and leadership of women in all aspects of the Coalition’s governance and outputs is vital for achieving the targeted impact. Recognizing that environmental conditions have different impacts on the lives of men and women due to existing gender inequality, the aim is to create an enabling environment for improving gender equality and the situation of women and girls everywhere, including in rural areas and local communities and among indigenous people and ethnic minorities.

Finally, ending with a quote from the Earth Dialogue of 2002 that declared: *“We do not have the luxury of time. Action is urgently needed, and to make it possible will require: a strong ethical framework; political courage on the part of world leaders; reform of the current systems of global governance and financial regulation; increased and better targeted official development assistance; and heightened individual awareness and commitment worldwide.”* – Earth Dialogue Forum, in Lyon, 2002.

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