

*Active Compassion: Empowering Buddhist Nuns through STEM Education*

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**Abstract**

This study advocates tertiary Science, Technology, Engineering, and Mathematics (STEM) education for Buddhist nuns in the Himalayan Region and links it to international initiatives to advance gender equity and equality, as well as women's empowerment. It examines the perspective of His Holiness the Dalai Lama on science education for monastics and advances an interdisciplinary perspective on Buddhist and Western scientific or secular education. Current opportunities for Buddhist nuns to receive tertiary education in the STEM fields are explored as well as the evolving roles and perspectives of Buddhist nuns in the twenty-first century. This study advances the idea that nuns empowered with STEM expertise can be significant actors, honoring their monastic vows to care for sentient beings, through leadership roles in sustainable development and infrastructure projects.

Keywords: STEM education, Buddhist nuns, women's empowerment, gender equality, sustainable development

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## Introduction

In 2005, Buddhist scholar Elizabeth J. Harris asked, “What is the challenge or model that Buddhist women should express to society through their lives and practice?” (p. 275). For the past 2,500 years, Buddhist nuns have selflessly attended to a range of religious and secular functions in Buddhist-run schools, orphanages, and medical clinics. Today more than 160,000 Buddhist nuns worldwide (Karma, 2010) work, in all its multiplicity, as a manifestation of their monastic vows to alleviate the suffering of sentient beings and to engage in *active compassion*, a core Buddhist practice that involves feeling compassion and acting on it. Yet, the contributions Buddhist nuns have made to Buddhism largely go unacknowledged within their religious and secular communities, which all too often regard women and Buddhist nuns as second-class citizens. While there are well-publicized international imperatives advancing education for women and girls in Science, Technology, Education, and Mathematics (STEM) fields, rarely is STEM education linked with empowering Buddhist nuns. This study explores STEM education in the context of expanding postsecondary or tertiary educational opportunities for Buddhist nuns and preparing Buddhist nuns to engage in leadership roles in sustainable development projects, particularly in the Himalayan Region. This study examines STEM educational opportunities for women and girls in Buddhist institutions, and explores the question: What agency could nuns advance through their humanitarian work if they could gain tertiary knowledge and experience in the STEM fields?

This study advances all levels of teaching and learning, particularly in tertiary education, for Buddhist nuns and novices in STEM fields. It regards education as a basic human need and concurs with Karma Leshe Tsomo, one of the earliest and forthright advocates of the education of Tibetan Buddhist nuns, that equitable educational opportunities for women is a human rights issue (Haas, 2013). This study regards STEM education as a kind of transformative education devoted to relieving material and social suffering in the world. More specifically, it advances STEM education that helps women and girls to achieve their spiritual goals, develop their identities with greater latitude, and prepare them with requisite scientific knowledge in STEM fields for leadership roles, not just in science education but also in infrastructure and sustainability projects.

This cross-cultural exploratory and experimental study is firmly rooted in international initiatives to advance women’s rights and empowerment. It explores the Dalai Lama’s perspective on Western, scientific curriculum and pedagogy within the monastic community. It provides an interdisciplinary justification and pedagogical framework that advances pragmatic approaches to STEM teaching and learning in Buddhist contexts. It regards STEM education as instrumental in the twenty-first century in empowering Buddhist nuns as significant moral and ethical actors in fulfilling their vows to improve the spiritual and material conditions for all sentient beings. It also acknowledges the potential of STEM education to broaden and enrich the secular curriculum in Buddhist schools. Moreover, this study links STEM education in Buddhist contexts with sustainable development initiatives, which strive to improve the quality of life and education for women and girls, and to address issues of social justice, poverty, and human suffering in their communities in ways that, as the Buddhists might say, are non-harming to the environment. Further, this study is

predicated on the idea that women's equity, equality, and empowerment can be advanced by preparing Buddhist nuns for leadership roles that require knowledge and experience in STEM fields. in infrastructure and sustainable development projects. Moreover, these educational initiatives engage Buddhist women in addressing the "business as usual" corruption and fraud routinely associated with sustainable development and infrastructure projects in the Himalayan Region and recognize the untapped potential of Buddhist nuns as major catalysts of transformative sociocultural change.

### **Dalai Lama's Support of STEM Education for Buddhist Monastics**

Nothing in core Buddhist teachings excludes or restricts women from educational opportunities (Gross, 1993, 2007; Mon, 2015), and His Holiness the Dalai Lama has taken deliberate and progressive steps toward modernization by supporting secular, or Western scientific education, in monastic schools. He has long held a personal interest in science and admitted that under different circumstances he likely would have been an engineer (Singer & Ricard, 2015). His commitment to science education is reflected in his views before 1959, the year he fled Tibet and entered India in exile, when

It was clear to me and others in the country that one of the underlying causes for Tibet's political tragedy was its failure to open itself to modernization. As soon as we arrived in India, we set up Tibetan schools for refugee children with a modern curriculum, which included scientific education for the first time. By then I had come to recognize that the essence of modernization lies in the introduction of modern education, and at the heart of modern education there must be a command of science and technology. My personal commitment to this educational project has led me to encourage even the monastic colleges, whose primary role is to teach classical Buddhist thought, to introduce science into their curriculum. (Dalai Lama, 2005b, p. 3)

"Not only have I sought to grasp specific scientific ideas," the Dalai Lama observed, "but have also attempted to explore the wider implications of the new advances in human knowledge and technological power brought about through science" (Dalai Lama, 2005c). Further, demonstrating his commitment to secular or scientific education, the Dalai Lama writes,

Seeing the tremendous importance of science and recognizing its inevitable dominance in the modern world fundamentally changed my attitude to it from curiosity to a kind of urgent engagement... I wanted to understand science because it gave me a new area to explore in my personal quest to understand the nature of reality. I also wanted to learn about it because I recognized in it a compelling way to communicate insights gleaned from my own spiritual tradition. (p. 9-10)

Through ongoing conversations initiated in the late twentieth century, the Dalai Lama has actively advanced reciprocal dialogue and forged ideological common ground between Western science and Buddhism. In the early twenty-first century, he famously asserted, "If science proves some belief of Buddhism wrong, then Buddhism will have to change" (Dalai Lama, 2005a, p. 1), a point clarified in the following passage:

If scientific analysis were conclusively to demonstrate certain claims in Buddhism to be false, then we must accept the findings of science and abandon those claims... the empirically verified insights of modern cosmology and astronomy must compel us now to modify, or in some cases reject, many aspects of traditional cosmology as found in ancient Buddhist texts. (Dalai Lama 2005a, p. 3)

The Dalai Lama explains that like science, religion relies on empirical methods of critical investigation, the unbiased findings through observed reality and rational analysis (Yee, 2009; Tibet-Institut Rikon, 2016) that include observation and inference as well as experimental repeatability and verification (Dalai Lama, 2005b, 2005c). Significantly, the Dalai Lama (2005b, p. 208) regards science and spirituality as aspects of one reality as well as mutual sources of knowledge and well-being. Just as “modern science can benefit from Buddhist perspectives” ([www.scienceformonks.org](http://www.scienceformonks.org)), scientific insights have enriched his Buddhist worldview, from subatomic particles that correspond to Buddha’s teachings on the dynamic and impermanent nature of the universe and the human genome, a manifestation of the human equality (Dalai Lama, 2005b). With “wisdom grounded in and tempered by compassion” (Dalai Lama, 2005b, p. 208), religion helps to address the formidable moral dilemmas posed by science. The Dalai Lama (2005b) said, “My plea is that we bring our spirituality...to bear upon...science and the directions of technology in human society. In essence, science and spirituality, though differing in their approaches, share the same end, which is the betterment of humanity” (p. 208). Recognizing the potential of both religious and secular education to be emancipatory, he finds that scientists, like monastics, have a “special responsibility, a moral responsibility” to serve the interests of humanity in the best possible ways (Dalai Lama, 2005b, p. 207).

Among his support of more recent reforms in Buddhist education, in 1995 the Dalai Lama sent a message to the first annual international conference on Buddhist nuns declaring the nuns’ right to religious and secular education (Vonnak, 2014). In 1998, the Dalai Lama prompted educational reforms to the Buddhist curriculum, which in some cases had not changed for centuries (Yee, 2009; Tibet-Institut Rikon, 2016). The Dalai Lama stated, “The Dharma [Buddhist teaching] is at a critical juncture. You might think that it would be good to spend the rest of your life as a hermit, but we also need qualified people to teach others” (Choegyul, 2014). Amid “outmoded scientific pronouncements or social norms” (Gross, 1993, p. 39), Buddhist academic centers began modernizing their curricula by including secular education. By 2000, “Initial resistance from some senior monks and fears of diluting traditional studies in monasteries have gradually eased” (Yee, 2009) as formal scientific education was integrated into the curriculum of many Buddhist monastic academic centers.

One measure of the Dalai Lama’s commitment to science education is indicated by his financial support. In 2009, the Dalai Lama provided \$150,000 for the Mind and Life Institute, a neuroscience research center at Stanford University that seeks to establish connections “between the empiricism of contemporary scientific inquiry and the contemplative, compassion-based practices of Buddhism” (Singer & Ricard, 2015). In 2012, the Dalai Lama received the \$1.7 million-dollar Templeton Prize. While he donated \$1.5 million dollars to the Save the Children Fund, he also appropriated \$200,000 in prize money to the Mind and Life Institute, which for

decades has promoted collaborations between science and spirituality. Further, he gave approximately \$75,000 to support the science education of Tibetan monks (but not nuns), explaining, “we have been teaching science to selected monk students and are now expanding that effort by introducing modern science within the general monastic education curriculum” (The Dalai Lama, 2012).

No other spiritual leader of this era has approximated the Dalai Lama’s groundbreaking pronouncements in support of science as well as the sense of urgency to cultivate the interdisciplinary symbiosis of science and religion to deepen human knowledge and solve global sustainability issues. He has provided a “vision and directive for the exiled Tibetan monastic community in India to engage science, and to initiate science trainings that would eventually support new learning at the frontiers of science and Buddhism” ([www.scienceformonks.org](http://www.scienceformonks.org)). Moreover, he has clearly conveyed his support of secular education in Buddhist monastic institutions as well as the need for mendicants to apply science education in local and global community contexts (Jamyang Foundation, 2015). It is clear that the Dalai Lama supports secular education within Buddhist institutions, yet, what have the Dalai Lama’s educational reforms meant for women and girls in the Himalayan region?

### **Status of Educational Opportunities for Buddhist Nuns in the Himalayan Region**

More than ever before, Buddhist nuns have greater access to secular education (Karma, 2004) and are earning university degrees (LeVine, 2004; Vonnak, 2014). In addition to performing their traditional roles in the sangha and lay community, nuns increasingly utilize their advanced educational degrees by providing health care as well as P-16 secular and religious education in their communities. Once educated, the status of nuns noticeably improves in the sangha and the secular community (Jamyang Foundation, 2015). While monks traditionally garner more respect than nuns, educated nuns tend to be more respected than uneducated nuns in their communities (Haas, 2013). Similarly, Cheng (2007) found that compared to less educated nuns, educated nuns tend to have greater social prestige and are better treated by the laity. In fact, while the laity traditionally prefers and requests the services of monks as opposed to nuns, an unintended consequence is that it affords nuns comparatively more time to devote to their studies (Cheng, 2007).

Despite these positive educational outcomes, the majority of Buddhist nuns in the Himalayan region are relatively deprived, receiving only a rudimentary education with little or no opportunity to continue in higher education or receive instruction at any level in the STEM fields. There is a perennial shortage of qualified religious and secular teachers (Gross, 2006), particularly in the most cloistered and remote areas of the Himalayan region. Compared to Buddhist monks, nuns have precious few educational prospects and spiritual leadership roles, both circumstances linked to pervasive and historical discrimination against females in Himalayan cultures. While Sexism and gender bias are at the heart of presumptions that women do not want to study in the STEM fields, nuns are stigmatized as less worthy than monks of receiving an education, in part because females are often perceived as inferior students. It is not uncommon for science curricula and materials to be provided to monks, not nuns, or for the nuns to get the cast-off materials from monks when they get new materials (Cheng, 2007). Further, monks often receive substantially more financial support from the laity but also from governments that provide more financial aid to monestary schools for monks than for nuns (Cheng, 2007). Despite their hard

work and potential, by many measures the Buddhist nuns of the Himalayan region have been disenfranchised, denied “the support and respect that nourishes the highest aspirations of the Buddhist sangha” (Dinsmore, 2012).

This study identifies five programs that currently provide grass-roots, micro-level support of STEM education for Buddhist mendicants. The surveyed programs include “Science Meets Dharma” (SmD); learning opportunities offered by the Jamyang Foundation; the Emory-Tibet Science Initiative (ETSI); the Social Work and Research Centre (SWRC); and Science for Monks. These science education programs offer a wide variance of concentrations, motivations, goals, and strategies, and some of are not necessarily compatible with the approach this study advocates. For example, this study endorses empowering women through tertiary education, a model the SWRC, a non-sectarian program, fervently rejects.

While some programs are less well known others are world famous, such as the SWRC program and its founder Sanjit “Bunker” Roy, who conducted a popular TED talk in 2012 and National Public Radio interview in 2014 (Roy, 2015; Castonguay, 2009). Of these programs, the SWRC program provides the most statistical data indicating the success of its programs, for example, in terms of the number of schools it operates in India, girls it educates, and women it has trained as solar engineers. The target demographic varies from program to program. For example, the SWRC has found it more productive to center on recruiting middle-aged grandmothers. Other programs tend to cater primarily to young adult monks (represented in photographs on the websites of these educational programs), such as the Science for Monks program, focusing exclusively on science education for monks not nuns. While some programs claim that nuns are eligible, it appears that in reality few nuns participate in most monastic science education programs, due in no small measure to cultural influences in the male-dominated sangha if not Himalayan culture in general. The SmD program requires a prerequisite “Nun Empowerment” course, designed to help nuns to develop a more self-confident self-image ([tibet.institut.ch](http://tibet.institut.ch)) and overcome their adherence to patriarchy prior to studying science education.

There are significant pedagogical distinctions in these programs, involving factors, such as teacher- or student-directed learning and experiential learning experiences. Some programs emphasize the importance of immersive educational and cultural experiences within their science educational programs, involving teacher exchanges in which Western teachers teach in Buddhist institutions in Asia, while others involve Asian mendicant students and teachers visiting Europe and the U.S. Some programs were developed under the auspices of the Dalai Lama, and some were not. Interestingly, of the five programs surveyed, it is the only one featured in the 2015 book *Caring Economics, Conversations on Altruism and Compassion, Between Scientists, Economists, and the Dalai Lama*. Moreover, some programs appear to have been designed primarily if not exclusively by Westerners, whereas the design of other programs seems more inclusive. The SmD program is distinct in that its goals include creating autonomous science education programs, designed and taught by monastics, that eventually exist without SmD oversight. The duration of some programs ranges from several days to years. Of these five programs, the SWRC can be considered the most unorthodox in that it does not employ university-educated teachers or conventional teaching strategies, nor is it designed exclusively for Buddhist mendicants. The SWRC weighs in as a significant educational model based on the

Dalai Lama's endorsement, its global celebrity, and its measurable successes in empowering women and implementing transformative social change. Yet, of the five programs, the SmD and ETSI models may be the most progressive and applicable for developing the kind of tertiary education for Buddhist nuns in STEM fields that this study endorses.

### **“Twenty-First Century Nuns”**

Based on fieldwork I conducted in Kathmandu, Nepal, in 2014, Buddhist nuns are gaining greater access to education and are earning advanced degrees, yet tertiary education in the STEM fields is widely unavailable. While the nuns that I interviewed focused intently on the various dimensions of their own spiritual development, they seemed keenly aware that it is in their best interests to study religious and secular subjects to achieve their monastic and human potential. They are increasingly supportive of women's teaching and learning and are evolving into new models of female monastic leadership, confirming Karma's claim, “As nuns have become better educated, they have developed new attitudes towards their roles and their potential” (Karma, 2004, p. 357). These nuns call each other “Twenty-first century nuns,” aware of how they differ from their predecessors in terms of their evolving understandings about and attitudes toward, for example, “ungenderizing” (Gross, 2016) social organizations, disciplinary knowledge, professions, and Buddhist teachings. Further, they are changing in terms of increasingly valuing secular educational studies and engaging these subjects, as well as selfless service to local and global communities, in ways that are more in keeping with core Buddhist teachings (Gross, 2006, p. 361). Their views seem compatible with predictions that, “Buddhist women will lead more and more and will create new places for themselves under the umbrella of their religion...in Buddhist Asia” (Barnes, 1996, p. 287) and “Buddhists will take up issues that have not been central in earlier times and will think about them in Buddhist ways” (Gross and Ruether, 2001, p. 208). For centuries, Buddhist nuns supported the sangha largely through subsistence farming, but by many measures twenty-first century Buddhist nuns in the Himalayan region are embracing seismic changes in their monastic lives and work.

### **Sustainable Development and STEM Educational Initiatives for Women**

Sustainable development is defined as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987, p. 43). The major challenges of sustainable development include but are not limited to natural disaster resiliency, energy consumption, water management, sanitation, climate change, poverty, and social exclusion. Sustainable development projects involve social and economic sectors, including housing, health, education, human rights, and cultural heritage as well as agriculture, irrigation, commerce, industry, tourism, and finance. Sustainable development projects involve typically infrastructure sectors, including electricity, communications, transportation, water, and sanitation (Government of Nepal National Planning Commission, 2015).

While tertiary STEM education for Buddhist nuns can help nuns to fulfill their monastic vows and live the Eightfold Path, it also supports the international women's educational and sustainable development initiatives advanced by scores of

governmental, international governmental, and nonprofit organizations. For example, this tertiary STEM education program is compatible with the Education for Sustainable Development (ESD) program, part of UNESCO's strategy for the Decade (2005-2014), which defines education for sustainable development as, "a process of learning how to make decisions that consider the long-term future of the economy, ecology and equity of all communities. Building the capacity for such futures-oriented development is a key task of education" (UNESCO, n.d.). Additionally, this STEM education program advances the Sustainable Development Goals unanimously approved by the United Nations in September of 2015. It is also compatible with the women's empowerment goals of the 2005-2014 Decade of Education for Sustainable Development (DESD), the international women's educational initiatives advanced by the Global Fund for Women, UNICEF, the United Nations Girls' Education Initiative, Women's Empowerment International, Women's Empowerment International Foundation, Education International, and the Center for Women's Leadership Initiatives.

### **Corruption in Sustainable Development and Infrastructure Projects**

Sustainable development and infrastructure projects seek to improve the quality of life in communities, yet too often these projects are mired in corruption. In 2003, the World Bank reported that, generally speaking, such projects are fraught with fiduciary risks, including bribery, theft, fraud, breaking the law, lack of accountability, and lack of transparency. Sarah Chayes' book *Thieves of State; Why Corruption Threatens Global Security* (2015) explores corruption, often linked to global sustainable development and infrastructure projects. In every case, Chayes concludes, the scourge of corruption is the cause not an effect of global instability. While this study endorses Chayes' (2015) assertion that ending such corruption requires thinking, "more creatively in terms of innovative, broad-based, nonviolent citizens' movements" (Chayes, 2015, p. 196), it advocates strategies to counteract corruption based on a Buddhist conception of the Noble Eightfold Path, which includes practicing right speech, action, livelihood, effort, mindfulness, (Bhikkhu, 2007, p. 2737). Living the Eightfold Path corresponds to individual and social morality centered on causing no harm and working to benefit all sentient beings (Gross, 1993). Further, this study is also predicated upon a Buddhist understanding of corruption as a manifestation of greed, hatred, and delusion, the root causes of "all manner of suffering and unhappiness for ourselves and others" that impede individuals from liberation and transformation (<http://www.sunyatacentre.org/the-three-poisons/>). The Dalai Lama is quoted as saying that a positive action requires the development of a positive vision, which this study supports in terms of tertiary STEM educational opportunities for Buddhist nuns.

### **Development Projects and Chronic Corruption in Kathmandu, Nepal**

For many residents of Kathmandu, it is a tough place to live in the best of times considering Nepal is one of the poorest and most corrupt Asian countries. In 2014 the International Corruption Perceptions Index rated Nepal 126 out of 175 countries, indicating it as one of the most corrupt (International Corruption Perceptions Index, 2014). The Nepalese government, described as "unbelievably corrupt, slow-moving and frustrating" (Wolfson, 2015), is plagued by poor governance, ongoing infighting of the deeply divided Nepali government, and patronage networks that keep the state



dysfunctional by demand (International Crisis Group, 2010). In fact, in March of 2015, the government and aid agencies of the United Kingdom threatened to cut aid, totaling approximately \$132 million, to Nepal unless it agreed to reforms to constrain its rampant corruption (Bhagat, 2015; Burke & Rauniyar, 2015; Sharma, 2015).

Even before the devastating earthquake on April 25, 2015, the aquatic system of the Kathmandu Valley was heavily polluted with industrial and domestic waste and the city of Kathmandu had a chronic water crisis, namely a shortage of clean surface water (Karn and Harada, 2006). The water and sanitation treatment facilities in Kathmandu were grossly inadequate in this overpopulated city exceeding one million residents. Every day one hundred and fifty tons of waste, almost half of it untreated, was dumped into its aquatic systems (Suwal, 2015; Pandey, 2006). Water essentially went straight from the river to the tap. Residents were required to pay a substantial monthly fee for running water, but in most households the taps ran dry at least ten days per month. The situation required residents to fetch water from community taps, a task relegated almost exclusively to young girls and women. Some residents purchased water delivered by water trucks and stored in cisterns on their properties. Yet, not even supplied water was potable, since the surface and ground water of the Kathmandu Valley was heavily polluted by natural and anthropogenic contaminations (Suwal, 2015). In fact, a study of the water quality in Kathmandu found that Coliform bacteria contaminated 36% of samples from treated water and 80% of tap water samples (Koju, Prasai, Shrestha, and Raut, 2014). Kathmandu suffers from persistent waterborne diseases and a significant number of its children die each year from water contamination (Suwal, 2015).

Under normal conditions more than one billion dollars in foreign aid flow into Nepal each year (T.B., 2011), but profiteering from humanitarian aid is easiest during a crisis, like the earthquake of 2015. While “The impact of natural disasters is compounded by corruption” (Chayes, 2015, p. 186), “It is at the moment that a crisis becomes most evident that external finances flow most easily” (Bayart, Ellis, and Hibou as cited in Chayes, 2015, p. 186). The Himalayan region is earthquake-prone, and following the earthquake on April 25, 2015, it was business as usual for “the corrupt government machinery” (Bhagat, 2015). The Nepalese government reportedly provided a weak relief response, seized much of the foreign humanitarian assistance, and centralized government control over the distribution of a significant portion of aid funds. In Nepal, corruption on all levels of the government is legion. Tragically, the corruption associated with entrenched kleptocratic networks compounded the earthquake’s devastation, prompting one survivor to lament, “Our own people have destroyed Kathmandu” (Wolfson 2015).

## **Conclusions**

This study, advocating tertiary STEM field teaching and learning opportunities for Buddhist nuns, offers a strategic vision for promoting gender equity and equality as well as women’s empowerment in sustainable development and infrastructure projects. There is nothing in core Buddhist teachings indicates STEM education is incompatible with nun’s vows or the science education initiatives endorsed by the Dalai Lama, who since issuing a progressive imperative in 1999 has actively promoted secular and science-based education among the monastic community (scienceformonks.org; Science Meets Dharma, 2015). This study endorses tertiary

education in STEM fields, not just for Tibetan but all Buddhist nuns, particularly in the Himalayan region, one of the most impoverished areas of the world. This study underscores the value of secular and scientific education in the sangha and Buddhist institutions, as well as STEM education that integrates Buddhist and Western knowledge. This study found the historical religious and cultural marginalization of nuns persists in the context of science education programs and resources, the lion's share of which supports almost exclusively science education for monks, not nuns. This study supports the evolution of more gender inclusive Buddhist institutions and leadership as it endorses using Buddhist moral and ethical guidance to address the endemic fraud and corruption associated with sustainable development and infrastructure projects. Providing STEM tertiary education and technical expertise can produce tangible benefits, namely empowering women with the knowledge and experience to lead in sustainable development and infrastructure projects as well as to increase the participation of women and girls in the public sphere and critical decision-making positions in local and global communities.

Education will be an increasingly powerful ally of Buddhist nuns in the twenty-first century. These STEM initiatives afford Buddhist nuns opportunities to honor their monastic vows to care for sentient beings and to engage the world in disciplinary provinces that have needlessly been inaccessible to women. These initiatives could herald a transformation of Buddhist female monastic educational traditions and humanitarian work as well as a revalorization of core Buddhist teachings. Supporting tertiary STEM educational initiatives for Buddhist nuns, as well as cultivating nuns as humanitarian leaders practicing active compassion in the context of sustainable development projects, is a wise utilization of moral and ethical women, an untapped resource who can do much to transform the Himalayan Region and by extension the world.

## References

- Barnes, N.J. (1996). Buddhist women and the nuns' order in Asia. In C.S. Queen & S.B. King (Eds.), *Engaged Buddhism; Buddhist liberation movements in Asia* (pp. 259-294). Albany, NY: State University of New York Press.
- Bhagat, P. (30 April 2015). An earthquake exposes Nepal's political rot; The disaster could spur urgently needed democratization. But don't hold your breath. *Foreign Policy*. Retrieved from <http://foreignpolicy.com/2015/04/30/an-earthquake-exposes-nepals-political-rot/>
- Bhikkhu, T. (2007). Eightfold path. In L. Jones (Ed.), *Encyclopedia of religion* (2<sup>nd</sup> ed.) (Vol. 4, pp. 2737-2739). Detroit, MI: Macmillan Reference USA.
- Burke, J. & Rauniyar, I. (3 May 2015). Most buildings in Kathmandu deemed uninhabitable or unsafe following quake. *The Guardian*. Retrieved from <http://www.theguardian.com/world/2015/may/03/most-buildings-in-kathmandu-deemed-uninhabitable-following-quake>
- Castonguay, S. (2009). Barefoot college, Teaching grandmothers to be solar engineers. *WIPO Magazine*. Retrieved from [http://www.wipo.int/wipo\\_magazine/en/2009/03/article\\_0002.html](http://www.wipo.int/wipo_magazine/en/2009/03/article_0002.html).
- Chayes, S. (2015). *Thieves of state; Why corruption threatens global security*. New York, NY: W. W. Norton & Co., Inc.
- Cheng, W. Y. (2007). *Buddhist nuns in Taiwan and Sri Lanka: A critique of the feminist perspective*. New York, NY: Routledge.
- Choegyal, R. K. (23 January 2014). Dalai Lama encourages Buddhist nuns on the path. *The Huffington Post*. Retrieved from [http://www.huffingtonpost.com/rinchen-khando-choegyal/dalai-lama-encourages-buddhist-nuns\\_b\\_4268966.html](http://www.huffingtonpost.com/rinchen-khando-choegyal/dalai-lama-encourages-buddhist-nuns_b_4268966.html)
- Dalai Lama. (2012). *Templeton prize money; Use of the Templeton prize money*. Retrieved from <http://www.dalailama.com/messages/acceptance-speeches/the-templeton-prize/templeton-prize-money>
- Dalai Lama. (2005a). Our faith in science. *The New York Times*. Retrieved from <http://www.nytimes.com/2005/11/12/opinion/our-faith-in-science.html>
- Dalai Lama. (2005b). *The universe in a single atom: The convergence of science and spirituality*. New York, NY: Morgan Road Books.
- Dalai Lama. (2005c). *Science at the crossroads*. Boulder, CO: Mind and Life Institute. Retrieved from <http://www.dalailama.com/messages/buddhism/science-at-the-crossroads>

Dinsmore, B. C. (2012). What did the Buddha think of women? *Through the Looking Glass*. Retrieved from <https://bhikkhucintita.wordpress.com/home/topics-in-the-dharma/uposatha-1272012/>

Emory-Tibet Science Initiative. (2014). Retrieved from <https://tibet.emory.edu/emory-tibet-science-initiative/index.html>

Government of Nepal National Planning Commission. (2015). Nepal Earthquake 2015 Post Disaster Needs Assessment Executive Summary. Retrieved from [http://icnr2015.mof.gov.np/images/PDNA\\_Executive\\_Summary\\_new.pdf](http://icnr2015.mof.gov.np/images/PDNA_Executive_Summary_new.pdf)

Gross, R.M. (1993). *Buddhism after patriarchy; A feminist history, analysis, and reconstruction of Buddhism*. Albany, NY: State University of New York Press.

Gross, R.M. (2006). Buddhist women as leaders and teachers: Gender bias and democratization. In Karma, L. T. (Ed.), *Out of the shadows: Socially engaged Buddhist women* (pp. 356-362). Delhi, India: Sri Satguru Publications, a division of Indian Books Centre.

Gross, R. M. (2007). Are we equal yet? *Buddhadharma*. Retrieved from <http://www.thebuddhadharma.com/web-archive/2007/12/1/are-we-equal-yet.html>

Gross, R. M. (1 March 2016). Making our way: On women and Buddhism. *Lions Roar*.  
<http://www.lionsroar.com/forum-making-our-way-on-women-and-buddhism/>

Gross, R.M. & Ruether, R. R. (2001). *Religious feminism and the future of the planet: A Christian-Buddhist conversation*. New York, NY: Continuum.

Haas, M. (7 January 2013). The F word in Buddhism: 'Daughters of the Buddha' discuss how Buddhist women can achieve equality. *The Huffington Post*.  
[www.huffingtonpost.com/michaela-haas/daughters-of-the-Buddha-discuss-how-Buddhist-women-can-achieve-equality\\_b\\_2421834.html](http://www.huffingtonpost.com/michaela-haas/daughters-of-the-Buddha-discuss-how-Buddhist-women-can-achieve-equality_b_2421834.html)

Harris, E. J. (2005). Detachment and compassion in early Buddhism. Retrieved from <http://www.accesstoinsight.org/lib/authors/harris/bl141.html>

International Corruption Perceptions Index 2014. (2014). *Transparency International: The global coalition against corruption*. Retrieved from <https://www.transparency.org/cpi2014/results%20http://www.transparency.org/cpi2014>

Jamyang Foundation. (2015). *Our Programs*. Jamyang Foundation; An education project for Himalayan women. Retrieved from [www.jamyang.org](http://www.jamyang.org)

Karma, L.T. (2004). Tibetan nuns: New roles and possibilities. In Hubertus von Welck (Ed.), *Exile as challenge: The Tibetan diaspora* (pp. 342-366). New Delhi, India: Orient Longman Private Limited.

- Karma, L.T. (2010). Buddhist Nuns In Asia vs the West. Sakyadhita International Association. [Video file]. Retrieved from <https://www.youtube.com/watch?v=xH0kqAjKdfs>
- Karn, S. K. and Harada, H. (2006). Surface water pollution in three urban territories of Nepal, India, and Bangladesh. *Environmental Management*, 28(4), 483-496. doi:10.1007/s002670010238
- Koju, K., Prasai, T., Shrestha, S. M., and Raut, P. 2014. Drinking water quality of Kathmandu Valley. *Nepal Journal of Science and Technology*, 15, 1, 115-120. doi: <http://dx.doi.org/10.3126/njst.v15i1.12027>
- LeVine, S. (2004). Dharma education for women in the Theravada Buddhist community of Nepal. In Karma, L.T. (Ed.), *Buddhist women and social justice; Ideals, challenges, and achievements* (pp. 137-154). Albany, NY: State University of New York Press.
- Mon, S. Y. 2015. Study of Buddhist view on women empowerment in ASEAN region. *12<sup>th</sup> Annual International Conference on the United Nations Day of Vesak. 2558/2015*. Retrieved from [http://www.undv.org/vesak2015/paper/study\\_buddhist\\_view.pdf](http://www.undv.org/vesak2015/paper/study_buddhist_view.pdf)
- Pandey, S. (2006). Water pollution and health. *Kathmandu University Medical Journal*, 4(1). Retrieved from <http://imsear.hellis.org/handle/123456789/46301>
- Roy, S. B. (2015). The barefoot college. In T. Singer & M. Ricard (Eds.), *Caring economics, Conversations on altruism and compassion, between scientists, economists, and the Dalai Lama* (pp. 159-174). New York, NY: Picador.
- Sharma, B. (27 March 2015). Nepal risks UK aid cut for 'endemic corruption' *The Kathmandu Post*. Retrieved from [http://www.ekantipur.com/the-kathmandu-post/2015/03/27/related\\_articles/nepal-risks-uk-aid-cut-for-endemic-corruption/274695.html](http://www.ekantipur.com/the-kathmandu-post/2015/03/27/related_articles/nepal-risks-uk-aid-cut-for-endemic-corruption/274695.html)
- Singer, T. & Ricard, M. (2015). *Caring economics: Conversations on Altruism and compassion, between scientists, economists, and the Dalai Lama*. New York, NY: Picador.
- Suwal, S. (2015). *Water in Crisis – Nepal*. The Water Project. Retrieved from <http://thewaterproject.org/water-in-crisis-nepal>
- T.B. (2011). Low road through the Himalayas. *The Economist*. Retrieved from <http://www.economist.com/blogs/banyan/2011/05/aid-and-corruption-nepal>
- Tibet-Institut Rikon. (2016). "The Project science meets dharma." 2013. Tibet-Institut Rikon. Retrieved from <http://www.tibet-institut.ch/content/smd/en/index.html>
- UNESCO (n.d.). *Education for Sustainable Development*. Retrieved from <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/>

Vonnak, D. (2014). Tibetan Buddhist nuns struggling for education and equality. *Contributoria*. Retrieved from <https://www.contributoria.com/issue/2014-06/533eef1f3bb906f411000067>

Wolfson, E. (6 May 2015). Bringing up the bodies in Kathmandu. *Newsweek*. Retrieved from <http://www.newsweek.com/2015/05/15/bringing-bodies-kathmandu-328803.html>

World Bank. (26 March 2003). *Financial accountability in Nepal: A country assessment (Country Studies)*, p. 90. Retrieved from <https://books.google.com/books?id=L59IEDpeVDEC&pg=PA90&lpg=PA90&dq=examples+of+nepal+corruption&source=bl&ots=kpfbElupaX&sig=wuhblySLkpecgUIPXrVMpOFVGx0&hl=en&sa=X&ei=eeaJVde8LcqvggSypILwDQ&ved=0CEkQ6AEwBg#v=onepage&q=examples%20of%20nepal%20corruption&f=false>

World Commission on Environment and Development 1987. (1987). *Our common future*. International Institute for Sustainable Development. Retrieved from <https://www.iisd.org/sd/>

Yee, A. (29 June 2009). Tibetan monks and nuns turn their minds toward science. *The New York Times*. Retrieved from <http://www.nytimes.com/2009/06/30/science/30monks.html?pagewanted=all>