African Women, Cultural Knowledge, and Environmental Education with a Focus on Kenya's Indigenous Women

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Abstract
The article examines African women's cultural knowledge of environmental education within a specific case study in rural Kenya. The paper indicates that rural women are connected to the land and the environment. The women have a vast knowledge of the environment, which we argue could be incorporated in our teaching to contribute to environmental education. This shows that some Embu women are in tune with their surroundings. The cosmology or belief system of the ancient people of Africa has a relevance to how many African communities, and especially Embu rural women, understand and conceptualize ecosystems, environmental change, and conservation today. We situate our arguments within ecofeminism theoretical framework.

Résumé
En puisant dans une étude de cas spécifique menée dans une région rurale du Kenya, le présent article se penche sur le savoir culturel que possèdent les femmes africaines en matière d'éducation environnementale. L'article indique que les femmes des régions rurales sont liées à la terre et à l'environnement, qu'elles ont une connaissance approfondie de l'environnement. Nous avançons que cette connaissance pourrait être incorporée à notre enseignement et contribuer ainsi à l'éducation environnementale. L'article montre que certaines femmes Embu sont en accord avec leur entourage naturel. La cosmologie ou le système de croyances des Anciens en Afrique a un rapport avec la façon dont plusieurs communautés africaines (et surtout les femmes Embu des régions rurales) comprennent et conceptualisent aujourd'hui les écosystèmes, les changements environnementaux et la préservation de l'environnement. Nos arguments s'insèrent dans un cadre théorique écoféministe.

> Look around you . . . where are the thick forests that we used to have? Kirimiri [forest] was thick and the canopy created by the trees would not allow the rays of the sun through . . . these days, people have cultivated up to the top of the mountain . . . Man's greed has chased the spirits of our ancestors that used to live there . . . for us this was a sacred mountain . . . But its sacredness has been destroyed . . . [child] . . . your generation needs to . . . slow down the pace of destruction. (Wane,

> 2000, p. 66, interview with Cucu, an Embu woman from rural Kenya in 1994)
> In recent centuries, under the leadership of the Western world, largely with the resources, psychic energy, and inventiveness of [Western] peoples, an industrial civilization has come into being with the power to plunder Earth in its deepest foundations, with awesome impact on its geological structure, its chemical constitution, and its living forms throughout the wide expanses of the land and the far reaches of the sea. (Thomas Berry, 1999, p. 3)

Thomas Berry and Cucu live in two different worlds, physically, economically, and socially; two worlds separated by disparate north/south resource exploitations, unequal gender relations of power, and diverse environmental and feminist movements in education and innovation. Thomas Berry is a renowned environmentalist and cultural historian of the Western world. His ecological insights have illuminated the path for Western environmentalists to take in global ethics, politics, economics, and education if humans, non-humans, and the planet are to survive. Cucu, a locally known sage and Embu elder from the interior of rural Kenya, is a respected member of her clan. Many clan members recognize her vast depth of cultural knowledge about land preservation and often seek her counsel in relation to the economics and politics of the land and local community. However, Western educated persons, locally or globally, seldom tap into the knowledge of women such as Cucu. Although differently located and gendered, Berry and Cucu's beliefs advance the same awareness: in order for the biodiversity of life to flourish on earth, there is an urgent need to draw on Indigenous knowledge and sustainable practices.

This paper examines the cultural, environmental knowledge of Embu women elders in rural Kenya. We locate our discussion within the field of Indigenous knowledge and environmental education. As the authors of this article span hybrid worlds and identities themselves, so do the perspectives presented here. Njoki Wane, an Indigenous Embu woman and Canadian-trained educator, offers a view of her Indigenous culture, presented through extensive ecological socio-cultural fieldwork data and personal experiences, or what anthropologists call an "emic" view. DJ Chandler, a non-Indigenous American educational anthropologist, takes up an examination of the "etic" view, or representations of environmental education and Indigenous women. Insider and outsider views blend to encourage environmentalists, farmers, scientists, educators, and leaders within and beyond Indigenous communities to initiate discourse to ensure ethical practices that centralize the voices, spirits, and knowledge of Indigenous women. We employ an ecofeminist theoretical framework to expound our insights on Embu rural women, environmental education, and Indigenous knowledge.

Theoretical Framework

Ecofeminism, as a theory, emerged in the 1970s with an increasing con-

sciousness of the connection between women and nature. French writer Francoise d'Eaubonne coined the term *écoféminisme* in 1974, and called upon women to lead an ecological revolution to save the planet (Merchant, 1995, p. 5). Broadly defined, ecofeminism encompasses a wide spectrum of feminist scholars who generally share the view that the exploitation of women in development or education processes is related to Western scientific notions from the enlightenment where nature, like women, are objects to control, manipulate, and plunder. Vandana Shiva (1988) argues that patriarchy (and colonialism) have annihilated women's role in the construction of environmental knowledge and corrupted the notion of "scientific knowledge." She states that the Indigenous knowledge of non-Western peoples confronts the "second coming of Columbus" by means of "piracy through patents" as well as creating devastating losses of creativity, biodiversity, and individual rights (Shiva, 1997).

Many ecofeminists concur that control over, and exploitation of, nature and animals is linked to control over and exploitation of human beings (Warren, 1994; Salleh, 1997; Shiva, 1993). Ecofeminists, such as Susan Griffin (1978) and Mary Daly (1978), claim a spiritual union between women's cultures and knowledge of nature. However, as with any theoretical or philosophical approach today, there are rifts and fragmentations, along with a pervasive hesitation to claim any one position as a definable stance. It is interesting to note that many Embu women from rural Kenya echo some of the ecofeminists' views.

Voices from Embu Elders

> Let's sit down here . . . Let's us have no blankets to sit on, but feel the ground with our bodies, the earth, the yielding shrubs. Listen to the air. You can hear it, feel it, smell it, taste it . . . We sit together, don't touch, but something is there; we feel it between us, as presence. A good way to start thinking about nature, talk about it. Rather talk to it, talk to the rivers, to the lakes, to the winds as to our relatives. (John Fire Lame Deer, quoted by Abram, 1996, p. 225)

The universe is around us, below us and above us, and is part of who we are. Many Embu women who participated in Wane's research, on the role of Embu rural women in Indigenous forms of food processing practices (see Nathani, 1996), know and acknowledge this. Cucu, Waitherero, Muthoni, Rukiri, Mumenyi, Mami, and Kamene, participants in Wane's study, verbalized their acknowledgement on a daily basis. These women were known by neighbours, children, and most community members as women who talked to themselves at all times. The talking to self exercise was most noticeable at dawn, walking to and from the farm, working on the farm, and at sunset. They talked to the rising and setting sun; they talked to plants, cows, sky, and all natural living elements.

Using both qualitative and quantitative methods, Wane interviewed 77 women whose ages ranged from 20 to 100 years. However, for the purpose of this paper, Wane (nee Nathani) selected the narratives of six women, whose ages ranged from 70 to 100 years. These participants had a deep understanding of the ecological situation and their level of cultural knowledge and environmental degradation stood out among all other participants. These women had no formal education and had an annual income of less than 10,000 Kenyan shillings (CAD$250), derived mainly from the sale of cash crops. The following are excerpts of Wane's interview with the six women concerning cultural knowledge, the environment, and specifically on their "talking to self." According to Waitherero she would "talk to self" because:

> When I wake up in the morning, I give thanks to *Ngai* (Creator in Embu/Kikuyu) for giving me another day to celebrate my life, my gifts from the land, and my relations with my family, friends, neighbours and strangers . . . Every morning when I stand at my threshold, I look at the rising sun, at Mount Kenya, at the sky, and then look down and touch the soil and any plants around me and say thank you out aloud—thank you for the magnificent wonders of creation. When I look at the sun and Mount Kenya (based on whether or not I can see the white peak). I am able to tell what the weather will be like for the day. . . . I also touch the soil and the plants to check the moisture content in the atmosphere for the day . . . I learnt all this from my mother and grandmothers . . . no they did not sit to teach me, I followed in their *nyayo* (footstep). (Interview with Waitherero, Nathani, 1996)

Waitherero's words underlie her connection with the earth, the universe, and *Ngai*'s (Creator in Embu/Kikuyu[1]) creation. She maintains a strong connection to her land and expresses her gratitude to the Creator through her thoughts, words, and touch. Her connection with what surrounds her is sacred.

Rukiri, another participant, expressed a similar reason for keeping in tune with the universe. She emphasized the importance of harmony and reverence, not only for herself and her family, but also for what surrounds her. She felt that creating reciprocity helps to main a balance between life-sustenance and loss. The following quote from the interview captures the intricate relationships in the universe and the complexity of the dimensions of balance restoration.

> When I was growing up almost everybody appreciated nature. Trees could not be uprooted without a reason, today, you are lucky if you find enough wood to boil water for your tea. We have lost the birds, the flowers, and the trees. When I have aches, I cannot find herbs to boil. When I touch the soil, I am looking for answers . . . maybe I can find answers by feeling the texture of the soil or gazing at the rising sun . . . I am not sure . . . we have lost the relationships . . . . (Wane, 2002, p. 140)

Muthoni, captured eloquently this complex interdependency more on how

members of the community responded to the crisis described above:

> If we had prolonged drought or poor harvest, we knew there was disequilibrium in the cosmos and our elders had to offer sacrifices to Mwena Nyaga (the owner of the land, universe—the Creator). The type of sacrifices and their duration depended on what was being sought after. If it was drought, past menopause women participated in a ceremony where they offered meat from a sheep without blemish and local brew made from honey. . . . The irony of the matter is, we have had drought for the last three years, and not a single elder from our community has made any suggestion about having a ceremony. I believe what we are witnessing today is a crush between your knowledge of the environment and ours. . . . What happens when you till the land over and over again? It shows you have no respect for the land. If you have no respect for the land, would you have respect for what grows on the land or people? I believe whatever education they are giving you is good education, but it is not complete education. You need to question the validity of what you are learning in relation not only to you, but also to your people, to us, to the land, to the plants and to the soil you are standing on. When you do that, that will be complete education . . . maybe from that knowledge, you might find a way of bringing some equilibrium between the environment, people, Creator and the universe. (Nathani, 1996, p. 138)

These quotes summarize the complexity of environmental education and ecological knowledge for Indigenous Kenyan women. The discussion with Embu rural women about the environment has revealed some basic principles of cultural knowledge and how these have been eroded by Western education. This discourse often ended with suggestions of how the basic principles could be reclaimed. Most women emphasized the first cosmological principle among Embu people: the need to care for every form of life, human beings, plants, animals, including invisible plants and animals in our universe. This principle emphasized the interdependence between the various components of the earth, including the geological, atmospheric, and spiritual systems. These Embu women knew, and have known, that disturbing one biospherical part would also affect other parts. This was succinctly captured by Warukiri's words before Wane and other women set out to harvest corn in August 1998:

> Carry some seeds with you. If you get to the farm before me, scatter the seeds before you start your harvest. When you do that you are giving back to the land. Give thanks to the Creator for providing for us, then you can start your harvest. If you do not give back, next year I will have no food and you will be far away to feel the effects of failing to observe one of our basic principles of life.

As demonstrated elsewhere by Wane (2002), harvesting did not begin at random. Before any action, women utter, "seed words," then cast some seeds from the previous harvest. This action demonstrated the importance of reciprocity and the honouring of the land's produce. As echoed in Redfield's (1997) notion of giving, there is a growing tendency to believe that ". . . the act of giving engages a metaphysical process totally congruent with our knowledge that the universe is responsive" (p. 175). These words emphasize

the importance of reciprocity and the significance of creating and sustaining connections not only with the land, but also with one's neighbours and ancestors. Many cultures throughout history have regarded nature as an integral and necessary part of their lives. However, many of us today have lost contact with the restorative, healing, and inspirational powers of nature (Wane, 2002). Cucu, one of the participants, commented:

> I learnt from my grandmothers how to use different plants, roots, leaves or seeds to heal aches—headaches, malaria, fevers, cuts . . . I always followed my grandmothers whenever they went to search for medicines . . . they never destroyed any plants . . . they spoke to the plants and showed a lot of respect. (Interview with Cucu, 1994).

The Embu people traditionally made a very deliberate effort to protect the diversity of the natural systems. In their view of the nature support system, the life of the species sustained itself. The plants contributed to the production and reproduction of systems above and below the ground. They contributed to the soil nutrients, composition, and texture. Above the ground, the plants provided food, air, and moisture to the universe. As a result, ecosystems renewed their services, and the biodiversity and conservation of local plants and animals could continue as part of the Embu's sustainable world. Many Embu women elders still practice some of the remnants of ancient African belief systems on how to care for the land and their immediate environment.

Belief Systems of Ancient African Women

The cosmology or belief system of the ancient people of Africa has a relevance to how African people understand and conceptualize ecosystems, environmental change, and conservation today. Women in particular were/are held as custodians of the land. This knowledge was passed on to the next generation through stories, riddles, proverbs, and folklore (Kenyatta, 1965). As a result, throughout the ages, African children were taught to respect the earth. Arewa (1998) eloquently captures this:

> Mother Africa taught her children to respect the earth and all that dwell on her. She taught them the laws of nature and helped them to understand the cosmic rhythms. [African people], who created rituals to communicate with these forces, which they then deified and praised, knew the celestial realms and elements . . . Ancient Africans lived closely with nature and they realized that internal energies are also governed by [the four natural] elements [namely, water, earth, air and fire]. (p. 38-39)

Owing to the absence of written records, explorations of African women's ancestral teachings have been limited (Afua, 2000; Amadiume, 1997; Arewa,

1998; James, 1993). However, we do know from archaeological research that ancient Nubians believed in the close connection between themselves and the universe. The Nubian people arrived at this knowledge by paying attention to their relations with self, universe, and creation. In today's world, many people have lost the sense of connection with the universe. Afua (2000) suggests that paying attention to body, mind, and universal will bring us to the place where we will start to experience our sensitivities toward the earth.

The Nubian belief system developed out of people's active engagement in the generation, acquisition, and classification of knowledge within their linguistic, cultural, economic, ecological, and sociological world. This also created interconnections between people's spirituality, language, culture, nature, and the usage of nature. As a result, African people, especially women, tended to hold nature as sacred within a relationship of respect and reverence, contrary to the Western scientific urge to control and dominate nature.

The beliefs are echoed by some feminist researchers who have conducted fieldwork on women's Indigenous environmental knowledge and found various notions of spirituality and beliefs which impact Indigenous peoples' choices, preferences, and knowledge constructions in relation to their local ecologies (Maag, 1997; Leach, 1992). Environmental anthropologists recognize the connections between culture and nature as inclusive of significant spiritual components as well. Croll and Parkin (1992) explain that environmental issues in anthropology are "approached from the shadows: through ritual, beliefs in spirits and holy sites, ideas of human birth and regeneration, the common origins of humankind and animals, the consubstantiality of human and plant life, [and] the characterization of 'natural' hazards as the wages of sin . . ." (p. 4).

For thousands of years, ancient and traditional societies have viewed physical and biological environments as linked in a web of relationships with what humans and non-humans, or Western science sometimes term ecosystems (Berkes, Kislalioglu, Folke, & Gadgil, 1998; Capra, 1996; Smith, 1999; Cajete, 1999). Indigenous societies embed their concepts of ecosystems within linguistic, cosmic, spiritual, and cultural meanings uniquely interdependent with specific bioregions, ethnicities (Berkes et al., 1998; Capra, 1996; Maffi, 2001; Smith, 1999), and gendered spaces (Fortmann, 1997).

Discussion

What would transpire if Indigenous women's ecological knowledges were included in environmental discourse and influenced curriculum, teaching, and learning? For instance, what would occur if Indigenous practices were valued within their long-standing cultural, ecological, and spiritual gendered contexts and combined with any existing or appropriate technologies, innovations, or approaches to address environmental degradation?

In this paper, we acknowledge Indigenous women's cultural and environmental knowledges as contextual, interdependent, vital, scientific, lived experiences. We define Indigenous knowledges as the epistemic saliency of cultural traditions, values, belief systems, and world views in any Indigenous society that are imparted to the young generation by community elders (Dei, Hall, & Rosenberg, 2000; Wane, 2000; Grenier, 1998). Such knowledge constitutes an informed epistemology, crucial for the survival of society; the unique, traditional, local knowledge existing within, and developed around, the specific conditions of an Indigenous people within a particular geographical area. This knowledge is based on collective understandings and interpretations of the social, physical, and spiritual worlds. They include the concepts, beliefs, perceptions, and experiences of local peoples in their natural and human-built environments (Dei, Hall, & Rosenberg, 2000; Wane, 2000). The knowledge covers all aspects of life, such as the management of the natural environment, the way people relate to that environment, and how the local community deals with sickness or celebrates the birth of a child (Harding, 1998; Dei, 2000; Wane, 2000). In Indigenous societies, knowledge is collectively and communally owned, not monopolized or standardized by individuals. While community members share knowledge, specific elders from the community remain its custodians (Agrawal, 1995). We therefore locate hope and power in the gendered spaces of Indigenous women's knowledge and, with the appropriate international, national and local strategies, that hope could support the earth's recovery.

Some critics ignore the efficacy of understanding the deep ecological knowledge embedded in some of the Indigenous women and men's consciousness in relation to sustainability. They fail to realize the notion that it is the exploitation, oppression, or omission of women and nature that binds them together, not biology itself. This is most serious in Africa where over 75% of the people rely on the land for their livelihood (Njiro, 1999).

What is Indigenous knowledge if it excludes or ignores the specificities of gendered spaces and meanings and the possibilities of empowerment and/or transformational processes for women? Louise Fortmann (1996) recounts that "In development circles—including the arena of women and environment—the notion of who is an expert and whose expertise counts is often shaped by the unsavory forces of elitism, racism, and neocolonialism" (p. 211). It is unfortunate that experts often overlook the depth and relevance of cultural experiences, which are often the result of many centuries of interactions within particular physical milieu, inter- and intraethnic contacts, and relations with the supernatural world (Batibo, 2001). The accumulated experiences enable Indigenous people from a particular community to claim expertise. It is in the specific, linguistic, contextual, and sometimes hidden knowledge dynamics and relationships where ecological approaches to environmental issues for Indigenous women can be found. It

is clear from these discussions that traditional women who have not lost their beliefs or local Indigenous knowledges are not obstacles to environmental education, progress, or the restoration of balance on earth. This is expounded in the following quote from Wane's interview with Cucu in August, 1998.

> The government agents have been coming and ordering us to plant these trees or those trees. They have never asked me why we resist to follow their book knowledge or why the seed trees they give us to plant dry up within a year or less—these agents do not know our soil (touching the soil), they do not know the right species for our soil. Look at the eucalyptus—what have these trees done, dried up our land—that is why we call them—drinkers of the water—well, I guess because I am old and I have never been to your schools, you do not think I know anything about my land. The loss of soil nutrients results not only in the land becoming bare, but the disappearance of birds, animals and any form of life and . . . we the people will soon disappear because we cannot survive where nature is extinct.

Cucu's words show how Indigenous women remain objectified with silenced and/or obscured voices external to government or educational processes, especially in relation to their environmental or scientific knowledge. Environmental education is something "done to them" (often, unsurprisingly, without long-term "success") by dominant, patriarchal forces devoid of collaborative decision-making. What outsiders often do not realize is that these women, who are gatherers of food, fuel, herbal medicine, and keepers of traditional knowledge, have intimate knowledge of their local ecological contexts (Rasmussen, 1998).

The environmental knowledge of Indigenous women has typically been viewed as unworthy of integration into teaching, learning, or research, whether non-formal agricultural extension training, formal science and other subject curriculum, or basic literacy. When foreign or foreign-trained experts introduce environmental or development projects, Indigenous women's knowledges in relation to farming or the local ecology remain excluded and ignored (Njiro, 1999). Women's "ways of knowing" may not be considered scientific by Western scientific standards, partly because of links to intuition or the supernatural.

Berry (1999) suggests that universities need to take an active role in the restoration of balance on the earth because it is a space that teaches all those professions that control human endeavour. He argues that:

> Our educational institutions need to see their purpose not as training personnel for exploiting the Earth but as guiding students toward an intimate relationship with the Earth. For it is the planet itself that brings us into being, sustains us in life, and delights us with its wonders. . . . [The] future can exist only when we understand the universe as composed of subjects to be communed with, not as objects to be exploited. . . . Intimacy with the planet in its wonder and beauty and the full depth of its meaning is what enables an integral human relationship with the planet to function. . . . Nourishment of both the outer body and the inner spir-

it will be achieved in intimate association with each other or not at all. (p. x-xi)

Modern Western science with its binary oppositions, such as woman/ man, nature/culture and its Cartesian logic, contributes to the exclusion of women's Indigenous knowledge in our education institutions and, at the same time, advances the earth's ruin (Boff, 1995). The ultimate goal of our educational system is to include Indigenous women's voices into the environmental discourse (Braidotti, Charkiewica, Hausler, & Wieringa, 1997). Indigenous teachings can be integrated in the teacher education curriculum and enriched with outreach programs, with student teachers visiting rural farmers to meet with elders. This approach will make student teachers start making a connection between theory and practice and they will stop distancing themselves from local environments.

In Kenya, environmental education does occur within grassroots organizations, nonformal education such as Green Belt, which was spearhead by Professor Wangari Mathai, and Wildlife Clubs. For the last three decades, the Wildlife Clubs of Kenya have demonstrated the need to include local environmental knowledge in formal schooling and curriculum. The Club has grown to be one of the most influential environmental groups in Kenya. They have demonstrated against hunting, poaching, and curio shops and this has led to changes in laws and policies (McDuff, 1998)

A study on environmental education perceptions of primary and secondary schools teachers in Nairobi suggests that teachers strongly want to integrate environmental education most particularly with local field trip lessons, but find lack of resources and time are the largest obstacles. This study also revealed teachers view "teaching with reference to African culture" as one of their lowest priorities (Ho, 1998, p. 76). This could be due to lack of emphasis of Indigenous knowledge in our education system. It is unfortunate because "schools treat indigenous communities as if they have no knowledge" (Batibo, 2001, p. 320) despite the unique intimacy of language with knowledge systems. Batibo suggests use of local names in reference to trees, plants, and shrubs could be part of new concepts in the curriculum to form the foundation for local environmental education. There are women at the grassroots who have wealth of knowledge on environmental education, but the education set up leaves very little room for incorporating local knowledge within the formal educational system. The curriculum developers need to find ways of linking practical knowledges from Indigenous women with book knowledge.

Conclusion

Our work has shown that many Embu women are in tune with their surroundings. There is considerable lamentation and wisdom among these women about the destruction of the environment. Our focus on Kenya's

Indigenous women and environmental education highlights the importance of language and context that reflect the intelligence and insight found within gendered spaces. Our paper suggests that there is a need for us to borrow from African women's philosophy in order to create balance in our world. For this philosophy to succeed people need to participate in the restoration of balance of our planet and embrace integrated or hybrid approaches to development and progress. In other words, environmental education is the work of all people, but especially educators and leaders. Each of us has our individual life pattern and responsibilities, yet we are all interconnected and interdependent. It is unjust to ignore the knowledges and acumen of Indigenous people, but it is also risky and shortsighted.

For many Indigenous women, the universe is the world, the basic referent in social order, economic survival, healing of illness (Berry, 1999), and center of language and life. The drum is the heartbeat of the universe itself, establishing the rhythm of dance, whereby humans enter into entrancing movements of the natural world with respect and unity.

Just as human beings struggle for space, time, and care in order to grow individually within supportive non-controlling relationships, so we must give non-humans and nature space, time, and care allowing them to reproduce, evolve, and respond to human actions. In practice, this could mean not cutting forests or damming rivers that force people and wildlife to become more vulnerable. Conceptualizing nature as a partner, rather than a foe or something wild to be tamed, allows for the possibility of a personal or intimate relationship to develop.

Notes

1 Kiembu and Kikuyu are dialects of Bantu, and are two of the many languages spoken in Kenya.

Notes on Contributors

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