

Education for Sustainable Development and the Question of Balance: Lessons from the Pacific

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Abstract

In this paper, we discuss the challenges for Education for Sustainable Development (ESD) with respect to achieving an appropriate balance between the three pillars of sustainable development--economy, society and the environment. In order to do this, we focus on specific concerns confronting a number of developing countries in the Pacific where unsustainable activities provide lessons for the implementation of ESD. ESD requires commitment from governments, commercial operators including transnational corporations, and local communities to facilitate positive changes through development of sustainable practices. In addition, we examine links between ESD and Environmental Education (EE) and advocate that they have the potential to work together to bring about the desired changes necessary to create a sustainable future.

Introduction

Increasingly, there is consensus that our current lifestyles are environmentally and politically unsustainable (McKeown & Hopkins, 2003). Degraded environments, depleted resources, over-consumption, widespread poverty and conflict are some of the many issues that threaten the stability of the world in which we live. Society must now transform its economic, social and environmental practices in order to stop threatening its own life support systems as well as the lives and livelihoods of its members.

Education, in its broadest sense, is one important means of achieving this change towards a sustainable world. Education is viewed as helping to provide the means to build the knowledge, skills, values and behaviors necessary for individuals, communities and nations to generate sustainable futures (Keating, 1993). Ironically, however, education can also contribute to "reproducing an unsustainable society" by being part of the problem as well as the solution (Sterling, 1996, p.18). Education has often been accused of playing a part in replicating the dominant social, cultural, political and economic norms that exist within society (Sterling, 1996, p.18). This reproduction helps perpetuate unsustainable modes of operation through education, business and governance. For example, schools, as part of the formal education sector, may inadvertently or by design transmit knowledge passively and in an uncritical way, thus supporting the status quo rather than effecting change (Orr, 1992; Stevenson, 1987). Consequently, to be able to contribute to the wholesale societal change that is necessary to facilitate sustainable futures for all, current educational practices must be subject to scrutiny and reoriented as a transformative education, "an education that helps bring

about the fundamental changes demanded by the challenges of sustainability" (UNESCO, 2004, p.15).

Education for Sustainable Development

UNESCO's Draft International Implementation Scheme highlights the need for "positive societal transformation" by providing all people with an education that will allow them to adopt "behaviors and practices which will enable all to live a full life without being deprived of the basics" (UNESCO, 2004, p.4). Education for Sustainable Development (ESD) has been charged with providing this revolutionary education (United Nations, 1992; United Nations, 2002; UNESCO, 2004). Such transformation implies changes in values and understandings; ones that show respect for all humans (both present and future generations), for difference, for the environment, and for the links that exist between all these elements (UNESCO, 2004). The holistic, value-laden, action-oriented nature of ESD, viewed as essential to generate such positive outcomes, is quite radical given current pedagogical practice. Nevertheless these same approaches, shared by Environmental Education (EE), already have provided many implementation challenges.

ESD has been emphasized increasingly in the discourse of EE in various countries (Stables, 2001), and therefore it is important to consider how these two educational frameworks relate to each other. ESD is regarded as firmly rooted in EE with "goals and outcomes similar and comparable to those inherent in the concept of sustainability" (UNESCO, 2002, p. 9). EE evolved as a means of providing humanity with the "knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current (environmental) problems and the prevention of new ones" (UNESCO-UNEP, 1976, p.2). Therefore EE tends to be viewed as more focused on environmental maintenance and improvement, unlike ESD, which encompasses the broader notions of concern for the well being of the environment, society and the economy. Although pro-environmental actions and behaviors are implied in maintaining and improving the environment, in practice EE can operate somewhat differently. Frequently, EE is practiced as education "about", "in" and "for" the environment. Education "about" the environment interpreted into an education about the natural world and how it works--a cognitive dimension (Lucas, 1980). Education "in" the environment meant experiential learning outside the classroom (Lucas, 1980), for example, an artistic response to the environment. Knowing "about" the environment and having the skills to work "in" and experience the environment did not necessarily translate into actions that would protect or improve the environment. Therefore, Education "for" the environment required people to learn how to act in order to improve and maintain the environment (Lucas, 1980). Similarly, more recent classifications of ESD parallel with these EE interpretations. Education "about" and "for" sustainability are both necessary, as they provide people with not only the knowledge but also the "skills and capacity to plan, motivate and manage change towards sustainability" (Tilbury, 2004, p. 104).

ESD, which includes economic and social dimensions as well as environmental ones, is viewed as being less constrained and more holistic than traditional forms of Education "about" the Environment (Taylor, Nathan & Coll, 2003). Nonetheless, Fien (1993; 1997) has argued that the more socially critical forms of EE, such as Education "for" the

Environment (Fien, 1993; Fien, 1997), also attempted to make strong links between issues of social, economic and political justice in relation to environmental welfare in the past. Education "for" the Environment aimed to "promote (an) informed and active concern for the quality and preservation of human life and the environment (from which it is inseparable)" (Fien, 1993, p.43). Even as early as 1975 and the formulation of the global framework for EE in The Belgrade Charter, issues of environmental preservation were linked with socially just modes of development. This landmark document articulated concerns about inequality between rich and poor nations calling for a new type of economic growth that would not affect people, their living conditions or their environment detrimentally. McKeown and Hopkins (2003) do make the point that although EE was not devoid of wider social and economic concerns this clear shift in emphasis exists implicitly within ESD. After analyzing three seminal documents that help envision EE and ESD--The Belgrade Charter (1976), the Tbilisi Declaration (1977) and Agenda 21 (the result of the Rio Earth Summit, 1992)--McKeown and Hopkins (2003) have highlighted the major differences they ascertained between EE and ESD. ESD is said to focus more upon support for universal basic education, an "emphasis on social development, including human rights, governance and social justice, and a more balanced approach to addressing the plight of both the environment and society's need for quality of life, which includes environmentally appropriate development" (McKeown and Hopkins, 2003, p.122). The more radical, action-oriented and politicized education "for" the environment considered aspects of social justice, yet in practice EE of this kind was quite rare as it was more challenging and threatening for teachers and practitioners to implement. The threats emanated from the idea that for appropriate environmentally sound behaviors to become commonplace, the ways in which the world operates required radical change. ESD, which also aims for "positive societal transformation", will undoubtedly face similar challenges when confronting the status quo. For the purpose of this paper, we will focus on specific challenges for sustainable development, therefore ESD, in the Pacific.

Despite the articulation of the broader concerns for EE, ESD concentrates explicitly on the three pillars of development--Society, Environment and Economy (UNESCO, 2004, p.12), while EE is regarded as supporting a more narrow perspective. Documentation of EE is said to focus on the environment while ESD documents focus on the environment and development (McKeown and Hopkins, 2003). Now the recommendation for the UN General Assembly to adopt a Decade for Education for Sustainable Development as a means of moving towards sustainable development has come to fruition.

Will ESD and EE co-exist?

This creates the question; what does this mean for EE and ESD? How will they articulate with each other? Obviously, there will be many perspectives and modes of operation that develop over time. EE could be viewed as indispensable to achieving the broader goals of ESD, thus as "one of the pillars of sustainable development" (Braslavsky, 2003, p.247). EE and ESD are recognized by some as having both similarities and differences that allow them to operate discretely but still prove complementary (McKeown and Hopkins, 2003). Some organizations will replace implementation of EE with implementation of ESD. This means that EE will become subsumed in policy and implementation documents; as eventuated for example, in relation to the 1999 National Curriculum documents for primary schools in England and Wales (Chatzifotiou, 2002).

Chatzifotiou (2002) notes that there appeared to be a quick conversion from the term EE to ESD, but this change had not been clearly addressed by the National Curriculum. More traditional views of EE may continue to operate within the more narrow focus of education "about" and "in" the environment supported by those practitioners and academics who have a passion for them. Still these academics and practitioners will be able to contribute to ESD by increasing environmental knowledge and skills. This situation of trying to articulate EE and ESD is reminiscent of the late 1960s when supporters of the existing areas of "outdoor education" and "nature study", feared being taken over and weakened by the emergence of EE (McKweon and Hopkins, 2003). These areas, however, went on to co-exist and influence each other positively. Ultimately, ESD and EE have the potential to work together to achieve a sustainable future, whichever perspective and mode of operation are followed.

Is ESD problematic?

There is growing awareness that understandings of ESD and how it should translate into practice can remain quite elusive. This openness to interpretation, however, is often viewed as positive. Multiple and contested meanings allow people to reflect and act upon them in order to generate alternative sustainable futures (Huckle, 1996, p.3). Writers describe ESD as being contested (Huckle, 1996; Gough, 2002), its language of implementation as vague (Chatzifotiou, 2002), multifaceted (UNESCO, 2004) and problematic (Bonnett, 2002; Stables and Scott, 2002) in that it is "open to a variety of interpretations and arguably also subject to internal contradictions" (Bonnett, 2002, p.9). Various reasons for this have been theorized, however. The competing and often opposed interests that notions of SD and therefore ESD bring together (e.g. environmental and business interests) appear to be one obvious rationale as to why ESD can be viewed as being extremely problematic. In fact, Stables (1996, cited in Stables and Scott, 2002, p.42), refers to SD as a "paradoxical compound policy slogan" that allows it to be attractive to interest groups with "widely differing views", i.e. individuals, governments, business, NGOs and communities, and enables any and all to "buy into" it to some extent. He goes on to point out that compound terms encourage the belief that the two key terms "sustainable" and "development" are "unproblematically complementary". There are obvious links and complexities reflected in the terminology of ESD. For example, "economic interests are served by development while ecological concerns are addressed by sustainable development; at the same time economic interests are served by sustaining profits" (Stables, 2004, p. 42).

A question of "appropriate balance"?

Sustainable development involves achieving an appropriate balance, but appropriate may not always mean an even balance, as it will depend on the context of the issues being considered surrounding environmental, societal and economic aspects of development. If this balance becomes inappropriately skewed, e.g. towards economic growth, then the environment and quality of human life can become stressed and even threatened. The repercussions of this imbalance can manifest itself in a myriad ways such as pollution, over-consumption "decreased quality and quantity, increased inequity or injustice in relation to natural resources and...an increasing role in conflict and disaster" (Switzer 2002, p.1). Ultimately, ESD is required to help address issues of how to produce this appropriate balance.

In this paper, we focus on specific concerns confronting developing countries in the Pacific where unsustainable mining, logging and fishing practices threaten the livelihoods, health and economies of local communities. In addition, we consider other issues that have particular resonance in the Pacific including global warming, nuclear testing and land tenure. We advocate that education, in particular ESD and EE, can work together to address these kinds of issues.

Sustainable Development--Lessons Learned from the Pacific

We provide a number of examples from the Pacific region to demonstrate the kinds of challenges that ESD has to face. Although the Pacific region includes Australia, New Zealand, Japan and the USA as prominent developed nations, our focus here is on a specific group of relatively small, less developed Pacific Islands sandwiched between more powerful nations in the region. The islands we refer to exist predominantly in overlapping zones of the North Pacific and the South Pacific Oceans. We acknowledge that France and the UK have territories in the South Pacific. We examine some of the SD issues and lessons from this region in order to better understand the difficult problems that ESD will need to address to produce effective change. Destructive resource extraction practices which are common to this region such as mining, logging and fisheries, along with the fact that all these Pacific Island nations are very small and isolated, may render them more vulnerable to exploitation. Although we have chosen to concentrate on this particular area in the Pacific, we acknowledge that similar issues and problems also exist in other regions of the world such as Sub-Saharan Africa. We use examples from the Pacific to illustrate what happens when the three elements integral to sustainable development, economy, society and environment, are not considered before development decisions become actions.

Many Pacific Islands in the region we have chosen to examine are rich in natural resources that are sought after by transnationals--transnational resource extraction companies that operate in the region and elsewhere. Papua New Guinea (PNG) and Bougainville have significant deposits of Gold and Copper; New Caledonia has a large deposit of Nickel, and the Solomon Islands, Vanuatu and Fiji have rich timber reserves (Lockwood, 2004, p.13; Scheyvens & Cassells, 1999). Pollution from mining and land degradation caused by logging are often associated in the Pacific with unsustainable practices carried out by large transnational companies (Lockwood, 2004, pp.21-23; Macintyre & Foale, 2004, p.150; Scheyvens, & Cassells, 1999, pp.114-119). Evans, Goodman & Lansbury (2001) highlight the negative effects that local communities in the Pacific have encountered as a result of mining. Lockwood (2004, p.22) implicates logging companies from South East Asia for the unsustainable exploitation of forests in the Pacific. Furthermore, the region's fish resources are exploited by commercial fishing fleets from nations such as the US, Japan, Taiwan and Korea (Lockwood 2004, p.23). These commercial activities take place to make substantial profits for shareholders and produce consumer goods or raw materials for markets in developed nations. One of the major challenges for ESD is to convince commercial operators to take into consideration the triple bottom line of economy, society and environment when planning and carrying out resource extraction. This is not straightforward because an endeavor to maximize profit margins may tend to dictate terms only for economic sustainability. The specific challenge for ESD then is to convince business interests to further consider society and the environment as important elements of any commercial operation. Developed nations

also need to lead the way in this transformation to sustainability. This is one of the major issues and challenges also for contemporary neo-liberalism, which is often seen to advocate for profits over the well being of people or the environment (Chomsky, 1999).

After having broadly covered some SD and natural resource management issues in the Pacific, we focus next on a selection of specific examples from the region. Issues such as global warming and rising sea levels, nuclear testing and pollution, resource depletion and land disputes have all been produced in the Pacific arena as a result of unbalanced and inappropriate development. We examine these issues more closely because they may pose major challenges for ESD.

In the first instance, we consider the phenomenon of global warming because it is linked to unsustainable development and raises issues about equity between nations that are industrialized, newly industrializing nations and nations that remain low on the scale of industrial development in the Pacific. EE and ESD are essential here to highlight environmental consequences of global warming and plan holistic solutions in partnership with local populations. Secondly, ESD can facilitate an implementation process whereby an informed grassroots is linked up to and has meaningful dialogue with policy makers, supports multilateral agreements as the Kyoto Protocol and brings pressure to bare on the commercial drivers of industrial development.

A relentless pursuit of economic development has given rise to large-scale industrial activities across the world based on the burning of fossil fuels that are considered to be largely responsible for the phenomenon of global warming. Global warming is raising sea levels (ABC Online, 2005, Stainforth, et al., 2005), which is a considerable threat to people living on low-lying islands and atolls in Micronesia, the Marshalls, Kiribati, Tokelau and Tuvalu (Connell, 2004, p.60; Lockwood, 2004, p.30). We argue that the international community has a moral responsibility to assist in areas where increasing flood proneness due to rising sea levels can be linked to global warming. There is now unanimous agreement among the scientific community across the world that unsustainable global industrial practices and anthropogenic effects could trigger global warming and rising sea levels. The countries that produce the bulk of the greenhouse gas emissions owe vulnerable low-lying island nations who suffer the consequences of these industrial activities. ESD has a role to play in communicating the broad facts about global warming, its causes and consequences. ESD could also promote the use of accords and agreements between nations as a means of reducing greenhouse emissions. More importantly, ESD must engage with industry to encourage changes in technology and adoption of sustainable practices that will result in lower pollution levels.

The second example we discuss below demonstrates how a regional social movement was able to successfully stop the unsustainable practice of nuclear testing in the Pacific. ESD in its transformative capacity could have an important role to play in facilitating these kinds of social movements in the future. Nuclear testing is associated very closely to economic security issues for a number of developed nations. It led to protests and broader global and regional community responses to the threat of pollution and the proliferation and use of nuclear weapons. Nuclear testing appears to safeguard higher order economic interests of a handful of developed nations across the globe.

A nuclear arms race during the height of the cold war saw many industrialized nations (e.g., USA, UK, France, USSR) stockpile nuclear weapons and develop more effective nuclear bombs. However, the nuclear deterrence that was desired was also a means of defending territory and economy against possible communist threats to capitalist production and industrial progress. We argue that these nations saw testing their nuclear devices in the Pacific as an economic imperative. Consequently, nuclear testing polluted many atolls in the Pacific (Lockwood 2004, p.13). It is a constant reminder of the potential for irresponsible behaviors by more powerful nations in polluting the sovereign territories of less powerful Pacific Island nations (Dawes & Green, 1999; Green, 2001; Lockwood, 2004, pp.12-13). These areas now need to be marked clearly on maps as a precautionary measure to prevent local people from harvesting food or spending prolonged periods near contaminated sites. Hopefully, ESD will help us avoid this kind of pollution in the future by advocating against the practice of nuclear testing on the grounds that nuclear contamination is unsustainable and inhumane to people who have to live with the consequences.

We concentrate next on identifying some historical issues that impacted upon land tenure and resource ownership, which may have set the stage for unsustainable practices in this Pacific region. We need to examine the period of European expansion over the past 600 years, if we wish to learn how colonialism has had adverse effects on cultural and social relations in the region when land was expropriated from traditional owners in colonized nations. The lessons learned in many colonial regimes of how taking away land can lead to conflict and social instability, should prompt us to respect the needs and values of indigenous peoples today. Both EE and ESD can be used to inform traditional landowners about the environmental and social impacts of land use changes as well as the effects that such changes could have on local economies. Simultaneously, commercial operators need to understand the wider impact of their proposed endeavors and the need to establish appropriate environmental standards and a process through which they can engage with landowners to negotiate intended land uses. Any bid to acquire land or territory for commercial purposes can have unacceptable economic, socio-cultural and environmental consequences for local communities. Besides, changing land relations by force or political manipulation could lead even to armed conflict and war, which is not a desirable outcome for any of the parties involved.

Developed nations did have negative influences on land relations in the Pacific during the colonial period in the 20th Century when they vigorously competed for colonies and suitable sites for the production or extraction of raw materials to fuel their economies. People from colonizing countries often exchanged trinkets for the rights to use and control customary lands and to establish plantation crops in places such as Bougainville (Havini, 2004). In other places, parcels of land were transferred to outsiders or privatized without the consent of the traditional owners. For example, the British brought Indian labor into Fiji to work sugar plantations (Lockwood, 2004, p.12), whereas in the Solomon Islands they transferred portions of land belonging to the people of Guadalcanal to people from adjacent Malaita who are culturally different (Wake, 2004, p.107). On Bougainville, land was transferred to foreign plantation owners and labor was brought in from the Highlands of PNG causing conflicts between locals and imported workers who had divergent cultural practices (Havini, 2004, p. xvi). Changed

land relations during the colonial period later led to armed conflicts in many of these Pacific Island nations: in Bougainville (May & Spriggs, 1990; Regan, 1998; Sirivi & Havini, 2004), the Solomon Islands (Dinnen, 2003; Lockwood, 2004, pp.29-30) and Fiji (Lockwood, 2004, p.27; Premdas, 2003).

There are many examples from the Pacific where the expropriation of land, for mining, in particular, has resulted in conflict. Both EE and ESD could contribute to the designing and implementation of mediation and negotiation processes or interventions that promote coexistence and peace and thereby help to avoid bloodshed. Land disputes, which are commonplace in the Pacific, can readily deteriorate into armed conflicts due to exploitation and environmental degradation. In Bougainville, for example, such issues eventually resulted in a civil war and the death of thousands of people (Böge, 2004; May & Spriggs, 1990; Regan, 1998; Sirivi & Havini, 2004). In spite of such precedents, neither the PNG authorities nor the transnational companies contracted to mine natural resources appear to have taken on board the lessons from mining in places like Ok Tedi or Panguna. In October 2003, hundreds of local people from Kianantu in PNG protested violently against the mining company, Highland Pacific, over poor environmental practices and other land ownership disputes (Turner, 2004). In a different part of PNG, landowners of the Porgera gold mine have demanded closure of the mine following a number of killings and human rights violations allegedly committed by security personnel employed by the company (Huafofo, 2005). However, these problems with mining are not confined to PNG. The exploitation of natural resources in West Papua by mining companies in partnerships with the nation-state of Indonesia and its armed forces is another example of the kind of imbalance that we are addressing in this paper where the local people are repressed by the military while their environment and society are being affected adversely (Mapes, 2002; Rumbiak & Walton, 2004, p.9). This case is also very symptomatic of what is also taking place currently in New Caledonia where French troops break up blockades set up by indigenous Kanak resistance (Rheebu Nuu Committee) to the large Goro Nickel mining project. Furthermore, on Marinduque Island in the Philippines, the local people are complaining of severe health problems as a result of poisoning experienced after toxic waste dumping into the sea by the Marcopper mine over a period of 20 years (Southall, 2005, p.9).

What all these examples reveal is how economic considerations--safeguarding economies, expanding territory, increasing production or extraction of natural resources for the global market--tend to override the needs for social stability, cultural integrity and environmental security in Pacific Island nations. They also reveal the enormity of the challenge for ESD, to balance out these competing interests in the region.

Discussion

Can ESD prevent such imbalances from taking place in the 21 st Century? The examples that we have provided expose how direct environmental, social and economic impacts have been caused by various activities in this region of the Pacific. These kinds of problems highlight a need for EE and ESD at several levels of engagement. These include: education for the governments of developed nations that endorse or support unsustainable activities in the region; education for local Pacific Island governments that sign contracts with transnational companies; education for the transnational companies themselves in order to minimize impacts and ensure that high environmental standards

are set and met; and education for local communities to enable people to understand economic, social and environmental consequences of a planned commercial activities. ESD can then provide the necessary processes through which multiple stakeholders can meet and discuss their divergent perspectives and plan sustainable outcomes together rather than wait for conflict to erupt before they act. At this point it is important to note that without a commitment from all stakeholders involved, including local communities, sustainable development is less likely to occur.

Governments, regional organizations (Pacific Regional Environmental Program), civil society organizations (local and regional NGOs) and international organizations (UNESCO, UNEP, Green-Peace, Friends of the Earth) all have a crucial role to play in planning, designing and implementing this form of multidimensional ESD. Conversely, ESD is unlikely to succeed if the ultimate goal is to lead with economy as the priority node in the triangular relationship. ESD must not be co-opted to mean that economic considerations must always come first with socio-cultural values and environmental quality taking second and third place respectively. Rather EE and ESD need to form an integrated approach that is far-reaching and proactive. The Pacific Regional Environment Program (SPREP, 2003) provides a good model for the region. Their vision is to better enable the Pacific islands to plan, manage, and use the environment for sustainable development. The program focuses on sustaining the integrity of the ecosystems of the Pacific islands region to support life and livelihoods. The program carries a large range of projects that involve schools, universities, NGOs and community groups. By these active means, a transformative education can effectively engage with the "real" issues in order to deliver sustainability in the 21 st century. If this model is to work, business interests and transnational activities will need to fall in line with the promises made at UNCED in 1992 regarding self-regulation. At least in relation to unsustainable resource extraction practices such as those mining operations discussed in the examples from the Pacific, transnational actors have not demonstrated that they are capable of self-regulating to minimize environmental, social or economic impacts for local communities.

Mining activities carried out by transnational businesses or multinational corporations can and do affect people in adverse ways by altering ecosystems and polluting air, land and water. Activities that prevent local people from producing food on uncontaminated land or harvesting clean food and water from natural systems are disrupting lives and degrading the environment simultaneously. Unsustainable practices reduce the productivity of areas as a result of degradation and pollution of both terrestrial and aquatic ecosystems, which have implications for environmental health, food security and community harmony. Nevertheless, Lockwood (2004, pp.22-23) argues that because Pacific Islanders need cash, they may choose immediate economic gain over longer-term conservation and therefore have to face the consequences. Macintyre & Foale (2004) argue further that this paradox is about competing economic and environmental interests. More importantly, there is no reason why the rigorous environmental standards and best practices used by companies when working in developed nations should not also be exercised and met when operating in less developed nations of the Pacific. Such an initiative would reduce the incidents of pollution caused by mining companies and protect the interests, livelihoods and environments of local people in Pacific Island nations.

There are far too many examples in the Pacific of environmental and social impacts resulting from resource extraction projects. These projects are based largely upon economic decision-making and concerns, which suggest that there is an urgent need to strengthen institutional arrangements for sustainable environmental management (Smith, 1993, pp.30-48) and change modes of operation to prevent unsustainable practices by transnationals and nation-states.

Ultimately, it is clear that all elements of society (not only those operating within the Pacific) will be required to re-orientate themselves in light of the altered value system required to implement sustainable development (UNESCO, 2004, p.14). In the Pacific, like elsewhere, ESD, in its broadest sense, both formal and informal, will have an important role to play in promoting this shift towards sustainable development-friendly values. ESD can provide the channels through which people can respond to unsustainable practices, empower local people and enable those affected to act early in preventing activities such as pollution from taking place. Appropriate international laws and standards can also support positive changes towards sustainability and global equity. The UNESCO document, *The Decade of Education for Sustainable Development*, highlights some of these SD friendly values:

"Respect for the dignity and human rights of all people throughout the world and a commitment to social and economic justice for all; respect for the human rights of future generations and a commitment to intergenerational responsibility; respect and care for the greater community of life in all its diversity, which involves the protection and restoration of the Earth's Ecosystems; respect for cultural diversity and a commitment to build locally and globally a culture of tolerance, non-violence and peace (UNESCO, 2004, p.14)."

Still a great deal remains unresolved in relation to how ESD will bring about the transformative education that is needed to maintain a balance across the three pillars. Our view is that both EE and ESD could and should work together, in tandem, to address this question of balance. EE and the newer ESD model of transformative education are relevant and could coexist to serve a common end. EE provides a reasonable framework for action and is fed by considerable academic debate about what EE is and how it can work better to improve environmental quality and management. The ESD vision on the other hand provides us with possible pathways and processes for implementation of education strategies that promise to deliver better environmental, social and economic outcomes. ESD can do this by engaging multiple stakeholder groups in actions to transform current unsustainable situations and build on improving capacity to facilitate sustainability. However, there is a genuine need to move beyond rhetoric and act in ways that illustrate our awareness that economic, environmental and social considerations do not occur in isolation from one another; they are in fact interconnected.

A cascading series of effects along multiple pathways can follow on from an unsustainable resource extraction activity such as mining. For example, tailings from mining operations dumped into waterways affects fishing and the gathering of aquatic foods. After a flood, pollution spreads to contaminate arable land, thereby disrupting

the local agricultural economy. Contaminated water or fish or food grown on contaminated land, all have negative effects on human health and wildlife. In turn, the contamination of land and waterways anger traditional custodians triggering conflicts or claims for compensation or land disputes or lawsuits. This type of scenario calls for a concatenated EE & ESD model; an education program that informs and engages multiple stakeholders in continuous dialogue; education processes that can link local communities to higher level decision makers and policymakers in governments; and an education process that can influence the setting of appropriate environmental standards that commercial operators need to follow. All too often, the responses from the international community or local communities and/or governments are reactive, or at best ameliorative, in situations where unsustainable practices are in use. Prevention is a far better approach than amelioration and ESD has the potential to deliver preventative education. Still, we need to pay careful attention to the challenging question that Akpezi Ogbuigwe, from UNEP Nairobi, asked delegates at a recent workshop in Bangkok that focused on ESD in the Asia-Pacific: "How badly do we want to change?" (OzEENews, 2005). This is an important question to ask ourselves in the context of ESD.

The new approach to sustainable development through ESD is a positive and plausible idea however, like most approaches to improve environmental management and achieve sustainable development, it is necessary for all stakeholders to be willing to move beyond the rhetoric for it to actually work. Academic debate alone about ESD, although very important, may not be sufficient to facilitate changes in the real world. ESD needs to go much further than academic argument to bring about actions for change in the arena where sustainable development is happening on the ground. Such changes include positive behaviors and best practices that will reduce impacts on environment, society and economy. The overall concept suggests that ESD can and should balance out the environment, the economy and the needs of society in terms of various socio-cultural considerations. This is however easier said than done when profit motives and the competitive urge to succeed in economic terms overrules other considerations such as what might be good for the environment or desired by people, including the less powerful members of local and global communities. For instance, in a less developed country (like a Pacific Island Nation) where society has little power to protect borders or regulate the activities of large multinationals or powerful nations, local people can become the sacrificial lambs of the global economy. The UNESCO document that introduces the Decade of Education for Sustainable Development indicates that these relatively complex issues pose clear challenges for ESD:

"In some areas of the world, the effects of globalization pose a threat to the survival of local communities, particularly of minorities and indigenous peoples, and to the forests and other habitats upon which communities depend. Changing patterns of world trade and production trigger new challenges of migration, settlement, infrastructure, pollution and resource depletion (UNESCO, 2004, p.9)."

The examples we have provided from the Pacific suggest that environmental impacts also cause social, cultural and socio-economic impacts in the way certain industrial activities such as mining, for instance, can affect lives and livelihoods of local people. Therefore, ESD must include a political dimension that can critique the impacts that human activities and the application of their technologies have on the whole environment including its economic, social, cultural, political and biophysical

dimensions as well as some of the complex interactions between them. Such a socially critical perspective already exists within EE as education "for" the environment (Fein, 1993; Fein 1997), which is holistic and through which relevant issues can be politically contested to confront such problems as corporate responsibility, transnational crime and the plight of local people with respect to social and environmental impacts. Therefore educators must be cautious to highlight the importance of including political critique within ESD. This could very well happen by EE working together with ESD to influence positive change.

We need to reflect on the fact that society and economy operate within our natural ecosystems and that the exact technological know-how or science to understand the bounds of resilience of natural systems may never be known precisely--or known in the time frame that is required. Hence it is important to be precautionary and accept that economy happens within the bounds set by ecology and not the other way about. This courtesy should be paid to current and future generations. We may find that a small group of people, say on a Pacific Island, may not choose to mine the largest deposit of Nickel available on the global market in light of the real costs to them in transformation of landscape, pollution and loss of livelihood. More powerful groups need to respect the wishes and choices made by small groups in such circumstances. ESD is flexible enough to accommodate considerations of choice, equity and values to allow local people to choose not to proceed with an activity, which from their perspective is unacceptable even though global market forces may consider otherwise.

Concerning development decisions, it is often about how to achieve an appropriate balance between the three elements to achieve sustainable development outcomes given a specific context. Undoubtedly, the degree of balance between the various elements of SD will be dynamic and ever changing, and dependent upon the many contextual issues of each separate development decision. It is hoped that a broad, values based, politicized ESD will help the community, governments and multi-nationals translate the notion of what is contextually an appropriate balance into environmentally, socially and economically just practices.

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