

## Environmental sustainability: Educating social workers for interdisciplinary practice

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### **Abstract:**

The relationship between social justice, environmental sustainability, and positive peace has been well established by theorists who highlight the need for multidisciplinary community-level responses to conflicts resulting from environmental issues and concerns. Schmitz, Matyók, Sloan, and James (2011) argue that many of the issues of poverty, injustice, and quality of life are connected to the health of the physical environment and its long-term sustainability. Increasingly, social workers, with their commitment to social justice, are called upon to recognize the relationship between social work, the environment, and human well-being (Coates, 2003).

**Keywords:** social work | social justice | sustainability | environmentalism | peace studies

### **Article:**

In a few decades, the relationship between the environment, resources and conflict may seem almost as obvious as the connection we see today between human rights, democracy and peace (Wangari Maathai).

The relationship between social justice, environmental sustainability, and positive peace has been well established by theorists who highlight the need for multidisciplinary community-level responses to conflicts resulting from environmental issues and concerns. Schmitz, Matyók, Sloan, and James (2011) argue that many of the issues of poverty, injustice, and quality of life are connected to the health of the physical environment and its long-term sustainability. Increasingly, social workers, with their commitment to social justice, are called upon to recognize the relationship between social work, the environment, and human well-being (Coates, 2003).

The quality of the biophysical environment – the water, air, food, and living spaces – is pivotal for human existence. While the interdependence of these resources is critical, there have been

historical attempts to separate human experience from concerns for the health of the biophysical environment, creating a dichotomy in practice and theory (Barry, 2010). This contributes to thinking of questions addressing environmental issues as separate from other living concerns and manufactures a limited understanding of sustainability (see Chapter 3). Globalization exacerbates the problem contributing to increased conflict between diverse communities around the world (Agyeman and Carmin, 2011).

In this chapter, an interdisciplinary approach to teaching environmental sustainability is examined from a community perspective, mindful of the part national and global issues play in informing this analysis. The approach is based on the belief that an understanding of environmental sustainability, positive peace (the presence of justice and absence of cultural, structural, and direct violence), and community-invested economic models are crucial to the long-term health of the biophysical environment and human survival within it. The course introduced herein focuses on the relationship between community, conflict, peace, economic systems, and environmental sustainability. Students are exposed to complexity (or complex systems) theory and the ecosystems perspective as a framework for assessing the relationships intertwined across social justice, community, environmental sustainability, and positive peace.

A framework for understanding the impact of development and widespread conflict within human communities, along with the turmoil created at the hands of humans, often without awareness, provided a lens for reflecting on human responsibility for global ecological degradation. The model was based on a critical pedagogical approach informed by the values of social and environmental justice (see Chapter 1) in which the ‘oppressed must be their own example in the struggle for their redemption’ (Freire, 1970: 54). This, too, is the focus of community development, which requires people, individually and collectively, to take responsibility for creating the type of world in which they want to live. Thus a theoretical framework was needed to establish a connection between human action and environmental sustainability, one in which issues of morality and justice are engaged (Lysack, 2008, 2010).

### **Teaching sustainability**

‘Sustainability challenges – such as global climate change, biodiversity loss, poverty, and patterned social inequalities, to name just a few – are real-life problems with fuzzy boundaries, complexly interconnected components, unspecified parameters, missing information, conflicting societal values, and no single solution’ (Myers and Beringer, 2010: 53). As a result of this increased complexity, and the nature of problems faced regarding sustainability, new and innovative pedagogies are required, pedagogies that focus on collaboration, not exclusion. In order to understand the complex relationship between community and environmental sustainability, social workers need to learn to work in fluid and changing environments within interdisciplinary spaces and as part of multidisciplinary teams. The teaching of environmental sustainability, as discussed in this chapter, was developed through the lens of community response, a sound knowledge of theory, and practice in a multidisciplinary context.

According to the United States Environmental Protection Agency (EPA), sustainability ‘creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future

generations' (n.d., p. 1). This 'requires far more ... than the cheap, shallow, and superficial measures commonly taken under the guise of sustainability' (Carroll, 2004: 2). Rather, environmental sustainability is a discourse that explores 'the relationship among economic development, environmental quality, and social equity' (Rogers, Jalal, and Boyd, 2008: 42).

Students learn that working in community contexts to ensure environmental sustainability requires a multidisciplinary response. Hence they are taught how to work in multidisciplinary teams at the community level. To this end, realistic experiences are provided to help them explore the multiple interconnected factors involved in meaningful and sustainable community change. The tensions of working within multidisciplinary teams are recreated in the classroom as students evaluate the value of holistic community engagement.

Interdisciplinary education provides multiple lenses through which to assess, engage with, and remediate the issues constituting the focus of this course. The interdisciplinary areas on which the course draws include social work, peace studies, economics, and the natural sciences. Each of these disciplines brings 'insightful observations about the dynamics of environmental sustainability and its impact on individual decision-making, public policy formation, and economic development [within local communities]' (Schmitz, Stinson, and James, 2010: 84). In focusing on sustainability, these disciplines are trying to discern a way to deal with environmental problems so as to protect the Earth for future generations (Smith, 2011). The study of environmental sustainability, therefore, represents 'a nexus for many disciplines seeking to examine issues of resource allocation, poverty, social justice, and globalization' (Schmitz *et al.*, 2010: 84). Drawing on their respective disciplines, the faculty educated one another on the interconnections between biodiversity, economics, conflict, and sustainable community development. This professional development approach was a precursor to the team development and the crossing of disciplinary boundaries for students.

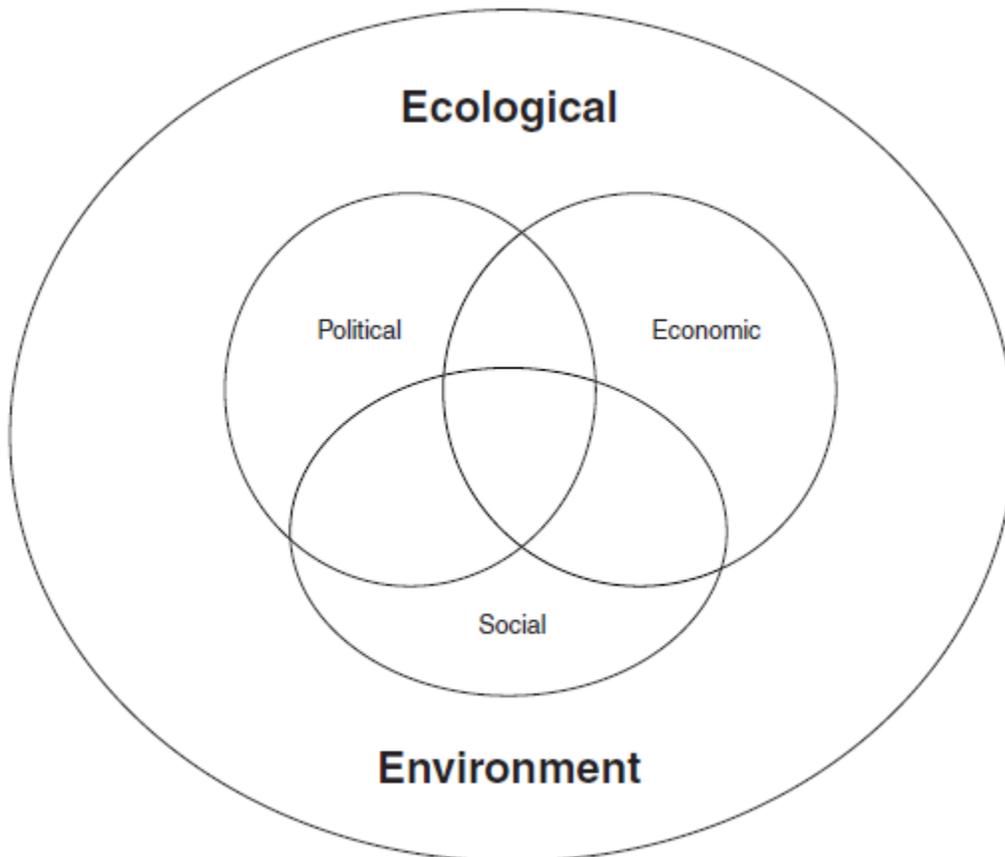
### Theoretical framework

It is increasingly recognized that social development theorists and practitioners have to understand that environmental sustainability rests on a healthy biosphere capable of sustaining diverse life forms, including humans. The biophysical environment is the context within which human social, economic, and political systems operate (Schmitz *et al.*, 2011). Figure 14.1 reflects these overlapping relationships.

Social, political, and economic human systems are embedded in the ecological (biophysical) environment (Schmitz *et al.*, 2011) and human growth that does not consider the multiple dimensions of environmental health is problematic and threatens all forms of life on the planet. This is the complexity through which the professional development of social workers – often charged with addressing critical, and frequently contradictory, issues comprising the social fabric of communities and relationships – must be viewed. Having a theoretical lens provides for critical analysis and supports the development of holistic practice models.

Complex systems theory provides a frame for analysing the web of interdependent relationships and the inherent complexity of human–environment transactions (Peterson, Allen, and Holling, 2010; Smith, 2011). Complex systems (and chaos) theory helps learners to frame analysis of the

myriad interdependent relationships inherent in human– environment transactions (Gleick, 2008; Kay, 2008; Kiel and Elliott, 2004; Peterson *et al.*, 2010; Smith, 2011). Through awareness of complex systems theory, and the intricacies and interconnections between systems (ecosystems perspective), human responsibility for achieving environmental sustainability becomes the focus of analysis, knowledge creation, and the development of professional practice.



**Figure 14.1.** Human systems within the ecological environment (Schmitz *et al.*, 2011).  
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An ecosystems perspective, derived from complex systems theory, establishes the biophysical environment as part of a chaotic universe where ‘the outcomes of changing variable interactions cannot be known’ (Kiel and Elliott, 2004: 6). The ecosystems perspective further informs effective practice in complex community environments (see Waltner-Toews, Kay, and Lister, 2008). It also enhances understanding that there are no longer any ecosystems unaffected by humans (Berkes and Davidson-Hunt, 2008). Hence, a thorough examination of the evolution of human communities requires an understanding of the way in which ecosystems interact reciprocally to sustain life and the environment (McCright and Clark, 2006). This focus supports the development of the skills for critical analysis in complex environments.

Establishing the structure

Three main ideas guided course development. The first involved establishing how issues impacting on local communities, such as poverty, ineffective social systems, violent conflict, and inadequate models for economic development, are connected to global concerns of environmental sustainability. The second centred on understanding the role of community development, the transformative potential of conflict, and alternative economic models in bringing about progressive change. The third was the importance of teaching environmental sustainability from an interdisciplinary perspective in a context where dialogue across disciplines was incorporated. Interdisciplinary practice for environmental sustainability can involve practitioners from a range of disciplines, including social work, community development, peace studies, business and economics, engineering, health, education, and multiple natural sciences.

The field of environmental studies is most established in the natural sciences, moderately developed in business and economics, and has great potential for expansion in many of the social sciences. Although there is a long history of investigating the impact of specific toxic substances on human health, the impact of human social systems within the environment and on sustainability is an interaction that is only beginning to be explored. Fields such as social work and peace studies have a large body of knowledge about creating change, community and relationship building, networking and collaboration, group work and team building, and development that can make significant contributions to environmental sustainability efforts. Each discipline involved in the development of this course (social work, peace studies, business, and economics) brings a degree of clarifying focus to the theory, knowledge, and skill interchange (see Table 14.1).

**Table 14.1.** Disciplinary links to environmental issues

Discipline	Core principles or theory	Knowledge	Skills and application
Social work	Collaboration Diversity Empowerment Social and economic justice	<i>Micro:</i> Person-in-environment and biopsychosocial <i>Meso:</i> Organizational practice <i>Macro:</i> Community development, multicultural engagement, and policy practice <i>Mega:</i> Social change	Advocacy Alliance building Communication Community-based practice Group work and team building Networking Problem solving
Peace and conflict studies	Human needs centred Humanistic conflict management Inclusive Non-violence Respect for diversity Social justice	<i>Micro:</i> Cultural fluency <i>Meso:</i> Organizational conflict <i>Macro:</i> Civic engagement, sustainable public policy development <i>Mega:</i> Global knowledge-base and transformative change	Consensus building Elicitive conflict resolution practices Joint problem-solving skills in mediation, facilitation, negotiation, and training
Economics	Externalities Democratic and living economy Limited natural resources Supply and demand curves	<i>Meso:</i> Economic development and business models <i>Macro:</i> Taxation and economic policies	<i>Micro:</i> Enterprise development Microfinance Social entrepreneurship

As social workers enter the field of environmental practice, they bring their commitment to issues of social and economic justice, community and organizational change, and policies and politics (Coates, 2003; Marlow and van Rooyen, 2001; Mary, 2008; Ungar, 2002; Zapf, 2009).

Social workers come to the field of environmental practice with the skills and knowledge to work as change agents, community builders, political advocates, and educators. These skills are transferable to environmental practice when the contextual focus is expanded to include how the environment is central to sustaining every other system of concern in a global society. The nature of social work is one in which understanding sustainability is critical in producing acceptable environmental outcomes for human lives.

Social workers can enter the field of environmental practice at multiple levels. Barlow (2001) emphasized the link between free trade, social justice, environmental sustainability, and social programs. Understanding this interconnection highlights the potential for social workers to enter with their skills as group workers, team leaders, networkers, organizational consultants, community organizers, and change advocates. Social work engagement moves from the micro to the macro as reflected in the developing environmental literature. In 2005, Coates drew attention specifically to the role of social work in responding to the growing environmental crisis. Borrell, Lane, and Fraser (2010) emphasized the need to integrate environmental issues into social work, highlighting overlapping financial, social, and environmental issues, while Durie (2010) reflected on the connection of the local, regional, and global spheres in responding to natural disasters. Lysack (2008) stressed the links between violent conflict, environmental decline, and what he called 'ecosocial' stress.

In addition to the knowledge and skills for engaging in change at the micro to macro levels, the field of peace and conflict studies is unique in tackling conditions of peace and ways of creating and replicating positive peace throughout society. A positive peace requires the presence of justice and the absence of cultural, structural, and direct violence. It is a field of scholarship and practice that begins from investigating what is absent in conflict situations that prevents peace from breaking out. From two different starting points, scholars and practitioners in the field seek to study conditions of peace, strategies for constructing and advancing increasing levels of justice, and ways to use the creative energy of conflict as a base for transformative change. A primary role of conflict and peace studies' practitioners and educators working in multidisciplinary teams is to engage in, and educate about, nonviolent conflict transformation, which involves moving conflictual community interactions to a *healthier* condition, one that reduces cultural, structural, and direct violence. Conflicts, in essence, are not really resolved, they are simply transformed.

Social work and peace studies practitioners bring the knowledge and skills for assessing the potential access points for precipitating community change. Community exists along a continuum anchored at one end by democratic, civic engagement – social inclusion – and, at the other, by disengagement or social exclusion. Communities can exclude in order to define themselves. Here, when we speak of community, we are instead referring to the engagement of citizens in the civic process and of local communities in grassroots community development. This form of community is open to dialogue and consensual decision making. All members of the community have a voice and should be given a chance to speak (Bantas, 2010).

The role of business and economics enters at three levels. At the most basic level, tax policies and regulatory requirements can be tools for imposing the economic cost of externalities on firms that create a negative public impact. Concepts like externalities (Scitovsky, 1954) are explored in

connection with environmental protection (Baumol and Oates, 1971) in order to determine the real cost to the community as a result of processes that create profit inside the organization. In this context, students recognize that resources are finite and their use can have a significant impact on the whole community, locally and globally. At another level, business and economic theory exposes students to models for development at the local community level that are inclusive and empowering. The focus helps students understand potential efficiencies present in the marketplace for social good (Bornstein, 2007; Hawken, 2010). Social entrepreneurship, microfinance, and enterprise development are key models introduced. Last, at a macro level, models for *living* economics, economies committed to community renewal, are taught (Fickey, 2011).

### Multidisciplinary approach

In order for students to develop the knowledge and skills needed to work effectively in multidisciplinary settings on issues related to environmental sustainability, they needed to recognize and understand complex global issues, such as poverty, economic stagnation, and political strife. To this end, students explored issues relating to environmental degradation, such as water usage, groundwater contamination, and air and water pollution, and, in parallel, they explored models of sustainability drawing on the work of Coates (2003), Hawken (2010), Mary (2008), and Orr (2011) with their clearly constructed critiques of the relationship between human development, democratic civic engagement and community building, justice economics, and sustainability. Other core models included Korten (2005, 2010), Shiva (2005), and Schumacher's (1989) models for *living* democracies with *living* economies, which assume a commitment to environmental citizenship, community, compassion, relationship, and equality. Gamble and Weil (2010) provided the framework for engaging in models of community practice anchored from the local to the global. These models, rather than focusing only on fixing symptoms, claim to respond to systemic issues by providing for the possibility of transformation toward economic self-reliance at the community level (Korten, 1996). Because economic oppression, environmental decline, and structural and interpersonal violence are linked, meaningful change must address these issues simultaneously.

Over the course of the semester, students from a diverse range of disciplines worked within multidisciplinary teams to study the work of those who had engaged with the global–local dialectic, such as Coates (2003, 2005), Mary (2008), Orr (2011), Shiva (2005), and Zapf (2009). Students most often came from biology, peace studies, engineering, business and economics, and social work. The goal was to discern the potential for transformative change through the advancement of civic engagement, democratic community building, just development, and social work centred in the biophysical environment. The United Nations' Millennium Development Goals (World Commission, 1987) were used to frame the global context. A *case study approach* and interactive learning methods, such as group discussion, community engagement, and team building, were used as students examined:

1. *Global and local issues*: Students explored the root causes of the problems experienced by local communities through studying the Millennium Development Goals (World Commission, 1987). Readings and experiential activities facilitated student exploration of these issues in their own communities along with their connections to the wider community.

Because sustainability issues play out in global, unbounded spaces, students were encouraged to view their actions from the perspective of global actors. Teams explored historical and contemporary issues relating to the environment and structural violence, economic disparities, health inequalities, oppression, and injustice.

2. *Community engagement*: Some students engaged directly with communities while others conducted theoretical analyses. The instructors encouraged students to take a critical view of community as a context for positive change with the potential to move beyond division, control, and exclusion. Through a series of debates and readings from critical visionaries and theorists, such as bell hooks (2009, 2010), Coates (2003, 2005), Mary (2008), Shiva (2005), Maathai (2010), Hawken (2010), Schumacher (1989), and Orr (2011), students began to question their notions of individual behaviour and community relationships. Students were introduced to a range of community-building methods, such as organizing, development, social action, and coalition building. This engagement allowed students to better understand the roots of sustainability issues in economic justice, global health initiatives, population shifts, and migration patterns, and to gain the confidence to participate in community work (Rosing and Hofman, 2010). Students were encouraged to examine potential roles for supporting positive change at the community level through critical reflection, journalling, small group discussions, and analysis of their team building and group development process.

The course brings knowledge from multiple disciplines to prepare students to work in multidisciplinary teams where they link individuals and communities to the environment. This individual–community relationship was established as core to balancing community responsibility with personal interests (Johnson and Scicchitano, 2009). An outcome of the class was to prepare students for work within chaotic and ill-defined contexts. Rather than providing students with cookbook responses, faculty sought to help students develop their ability to be comfortable with chaos and complexity as interdisciplinary solutions emerged (McGibbon and McPherson, 2011). Students were encouraged to take the knowledge and skills from their disciplines as a base for innovative recreation and the conceptualization of transformative models for change. They were urged to grow beyond their professional boundaries and engage in analysis across disciplinary lines (Mendoza and Matyók, 2012 in press).

### *Multidisciplinary teams and the case study approach*

Case studies were used to engage students in the issues being explored in the classroom. To make the cases come alive, community change agents were sometimes invited as guest speakers to address critical concerns and identify the mechanisms they had used for transformative change towards sustainability in their communities. The use of case studies provided multidisciplinary student teams an opportunity to appreciate the interconnections between issues. Students moved away from prescriptive vertical approaches, which have the tendency to impose solutions from above (the top-down expert model). Rather, they were encouraged to engage in conflict transformation using an elicitive horizontal approach (Lederach, 1995), engaging actors as co-equals in their own liberation.

The case study learning method provided an opportunity to identify the patterns of conflict and the programmed behaviours that keep conflicts intact. Learners were propelled into situations that required them to use past and newly acquired knowledge to create innovative change

strategies. Through this process, students were provided with the opportunity to analyse, evaluate, and judge in a safe environment. Conflicts were framed as patterned behaviours directed against individual and collective goals, with the potential for a disruption at any level to create a ripple of change. Analysis was introduced as an intervention, based on the assumption that what they analyse they change. The case study approach enhanced student learning by disrupting the tendency to disconnect what is happening on the local level from what occurs on the global level. The use of cases gave students an opportunity to apply ethical decision-making processes and reflect on the social impacts of their choices in relation to environmental issues and their global implications, deep historical roots, future ramifications, and social, economic, and political dimensions. Students completed independent research, produced a paper or presentation, and offered a debate on a current occurrence happening in their community or in society (McWilliams and Nahavandi, 2006).

Through case study analysis, teams assessed critical aspects of social problems and the various social, economic, and political components. In this way, attention was focused on analysis and problem solving that respected but moved beyond personal experience and local knowledge. Students avoided the tendency to become bogged down in the details of specific events, which drew their focus away from engaging in higher-order reasoning about the complexity of the issues. Participating in this reflective practice allowed students to develop their critical thinking skills, which did not simply occur, but rather needed to be nurtured. Students learned to engage in metacognitive actions, thinking about their thinking, not just how to follow rules (Sandel, 2009).

The Analysis of Violence Worksheet (see Figure 14.2) provided a tool for organizing a process of investigating an existing condition. The worksheets were introduced as a framework for analysis, not as templates offering a solution. The attitudes, behaviours, and contradictions toward the concern being explored (such as resource use and community health) were analysed at the mega, macro, meso, and micro levels. Attitudes such as hatred, distrust, and apathy, behaviours including physical and verbal violence, and contradictory goals that block and stymie in conflict situations were explored (Santa Barbara, Dubee, and Galtung, 2009). Using this tool, students explored the fluidity of the structure as characteristics at each level of analysis move freely across the dimensions. The worksheets guided analysis and encouraged students to see conflict in multiple dimensions, simultaneously.

<i>Level of analysis (of violence)</i>	<i>Attitudes</i>	<i>Behaviours</i>	<i>Contradictions</i>
Mega – global			
Macro – community or policy			
Meso – organizational			
Micro – family and neighbourhood			

**Figure 14.2.** Analysis of Violence Worksheet

Patterns were analysed with identification of interventions at all levels of a system and social structure. Interventions impacted on conflict at multiple locations simultaneously, establishing new crises and conflict response patterns. The matrix introduced here also assisted students in

framing their analysis of events. Through this process, they developed an appreciation of the nuances of conflict and its potential for disruption and transformation.

Cases such as water use and misuse have clear links locally and globally. A cursory review of multiple news media sites suggested the growing dominance of water-related concerns. It is now suggested that the world may be running out of water (Behr, 2010), that wetlands are disappearing (Weeks, 2010), and that the biodiversity of our oceans is collapsing (Woodard, 2010). Coastal communities around the globe are hugely impacted by water-related issues (see Mathbor, 2008 for coastal development discussion). This is an issue that impacts on communities in which social workers can engage at local and global levels. The complexity of water issues demands that social work students develop a holistic view of interrelated human actions that manifest themselves in environmental issues and crises. Case studies like this provided a means by which students were able to engage in the investigation of ongoing conflicts and their impact on community issues, such as water supplies and food security.

### Water conflicts

Using case studies focusing on water concerns was something students could grasp in relating the local and the global. Students might be asked to analyse the water conflicts that arise when corporations buy the rights to water a local community needs for survival. Or, they might be asked to examine coastal issues, which affect resource use, environmental pollution, and community well-being. Georgia, on the East Coast of the United States of America (USA), provided a framework for multiple case studies used in our classrooms. Students identified manifestations of water conflicts from the interpersonal to the global recognizing the attitudes, behaviours, and contradictions involved. For example, the Altamaha River Basin on the Georgia coast was used as it is one of the largest breeding grounds for shell and fin-fish on the East Coast of the USA, and accounts for 18 per cent of the fresh water flowing into the South Atlantic. It is 'one of the highest quality and most expansive estuarine and salt marsh systems in the world' (The Nature Conservancy, n.d.). Land use changes and water withdrawals, coupled with water run-off upriver, threaten the health of the coast's biodiversity. The economic health of coastal communities also relies on tourism, and sport and commercial fishing, all connected to the condition of the river – positive and negative. In fact, tourism is the second-largest industry in Georgia, and the largest economic generator along the coast (Georgia Department of Economic Development, 2011). In 2004 tourism generated US \$1.7 billion for the 10 coastal counties. Students were asked to create models for development that were socially and economically just and attended to the unique biodiversity found along the coast.

Through their research using the Analysis of Violence model, students began to understand the multiple layers of structural and direct violence. Students gained an understanding of how cultural, structural, and direct violence moves horizontally and vertically within and across the four levels of analysis: micro, macro, meso, and mega. Individually and in groups, students conducted a case analysis to determine what attitudes, behaviours, and contradictions were present at each level of analysis. Because of the flexibility and potential inherent in the model, teams could focus on any level as primary while analysing the impact across all four levels. Each student filled in the form from the perspective of their discipline. In coming together as an interdisciplinary team, they shared and integrated information as viewed through multiple lenses.

Students were introduced to perspective taking (viewing situations/circumstances from multiple angles) and the importance of analysing conflicts from diverse viewpoints.

At the micro level, teams explored attitudes such as trust or distrust at the family and neighbourhood levels. Particularly salient were issues of trust among those engaged in commercial fishing in the local area. Students then explored related behaviours and contradictions, for example, the contradiction between distrust of their peers and their need to depend on them. At the meso level, they could proceed to organizational culture and distrust of the formal systems. At the macro level attitudes toward government policies were investigated to understand how laws, rules, and regulations impact individual fishing boats. An example here was the conflict between environmentalists and commercial fishers regarding the use of turtle exclusionary devices. And, at the mega level, environmental policy, global economic competition, and international conventions had the opportunity to be explored. Identifying the conditions present at each level then became the foundation for recommended solutions. Solutions were developed that addressed each condition at each level ensuring a unity of effort. Solutions complemented each other and ensured focused effort.

Presentation and debate helped students achieve a better understanding of the global reach of local issues. For instance, students became aware of how industrial shrimp farming in Asia affects local shrimp boats and processing facilities along the Atlantic coast. Commercial shrimping on the Atlantic coast is in a state of decline impacted by commercial shrimp farming practices, global economics, and environmental decline. Analysis that moved across interacting local and global concerns created a broader and more in-depth understanding. The multidisciplinary teams constructed in the course focused cross-disciplinary expertise that was useful in addressing diverse situations relating to East Coast water supply *vis-à-vis* industrial shrimp farming. In these cases, students not only had an opportunity to understand theory in action, but also were encouraged to develop skills in planning, resource allocation, civic engagement, and community development. Economic models explored included microfinance, enterprise development, and social entrepreneurship. Some proposals included developing commercial shrimping coops. The coops would pool resources in order to reduce operating costs such as boat insurance and fuel. Another proposal suggested creation of a city-operated dock for unloading and processing catches. This approach would place a local bond issue on the ballot to fund the project and merge commercial and governmental interests. Students suggested marketing locally caught shrimp as a boutique item, and the development of an internet marketing plan to expand the customer base. One group discussed developing a plan for *aquaculture tourism* that would open working shrimp boats to individuals who want to experience a week at sea doing commercial fishing.

### Disaster relief in Haiti

In another case assignment, teams explored the work of multidisciplinary response teams in Haiti to provide a grassroots response that tended to be more effective than official relief efforts. Students were asked to consider the aftermath of the earthquake in Haiti and to design appropriate responses that delve deeply into the social, economic, and environmental issues. In this case Numana, a nonprofit organization, was positioned to address the needs of those experiencing hunger (for more information see Numana, 2011), thus teaching students an

approach to disaster management from the meso level. Numana used a grassroots community approach to offer an effective redevelopment process in Haiti (Ballard-Reisch, 2011). The Numana process connected local volunteer organizations in the United States with trusted relief organizations in Haiti. Organizations that had already developed strong reputations for their relief work maintained over decades were able to provide strategic information on how food and materials are most likely to be effectively distributed to the residents of Haiti, and to address cultural concerns and the spread of rumours that interfered with the relief process. The organizers of Numana used this information throughout their whole process from food packaging to food delivery. Without this critical information, it is highly likely that donations would be wasted, or not reach those most in need of food and supplies. Students examined how Numana approached recovery efforts to address community concerns that supplies are distributed equitably and effectively to the whole community, and that children in particular would not be harmed in the process. Children were of particular concern because of rumours circulating that they were being traded for bags of food provided. Because Numana relied in part on the volunteer work of college students, our students had the opportunity to imagine how they might personally respond as members of disaster response teams (Mathbor, 2007; Pawar, 2008, see Chapter 15). In choosing a contemporary and global concern, students were connected to prominent issues. While the case study highlighted micro- and meso-level response, through the use of the Analysis of Violence Worksheet, teams of students analysed the macro and mega context. This learner-centred pedagogical approach (Myers and Beringer, 2010) provided the foundation upon which students were able to develop concern for their relationship to the environment and the local community and envisage community-based solutions and responses to the human and environmental devastation wrought by natural disasters.

### Community gardening as a lens to sustainable agriculture

A concrete example of the transformative nature of the course was the community garden project assigned during one semester of the course. The garden was a symbol of community engagement around a concern for sustainable local agriculture that served as a context for learning about food security as a local and global issue (Phillips, 2009; Polack, Wood, and Bradley, 2008). With community gardens scattered across Greensboro – a mid-sized city situated within a metropolitan area surrounded by more rural communities struggling with agriculture-based economies – a local environmental organization wanted to raise awareness of the gardens and related economic and social issues. The students were asked to identify and explore possible issues arising for communities around food security. They were taught about Kretzmann and McKnight's (1993) approach to assets-based community development, pivotal to which is assets mapping. This enabled students to consider local community conditions and concerns through building on available strengths and resources and human and social capital. Through this process, students were able to understand the relationship between poverty and food security, and community gardening as a possible strategy to address this concern at the local level. Students from social work, peace studies, the natural sciences, and business brought to bear prior course work as they developed a business model that would help to better organize the community garden system in their local communities. The students developed a social entrepreneurship model with a multidimensional focus on social, economic, and environmental factors. This model recognized the role of community gardens in enhancing community solidarity, food security, and economic well-being while growing vegetables using environmentally friendly methods, such as

biodegradable waste recycling (see Chapter 6). From a peace studies perspective, students also considered how conflict might arise around community gardening and how it might be dealt with. Community gardens are constantly under threat from local developers and conflicts between business economic interests often threaten the security and livelihoods of local communities. Using a team-building approach, students explored strategies of networking, advocacy, political action, and community development. They also considered the importance of leadership when exploring related issues such as nutrition and resource availability.

Beyond local engagement activities, community gardens are an ideal vehicle through which to teach students about the relationship between local and global environmental concerns. Poverty and food security affect huge numbers of people in the Global South and an increasing number of urban communities in the developed North. It has moved closer to home following the global financial crisis so the issue was topical for students. By using the Analysis of Violence model, students gained an awareness of how international aid and food policy affects people at the micro level and how this connects to the meso aid organization level, and mega global development level. Students entered the project with a linear view of what they could do with the community garden. However, after their research and discussions with community partners and local residents, they recognized the complex nature of food security and the influence of policy locally and globally. Their cross-disciplinary knowledge enabled them to develop a deeper understanding of food security and the influence of neoliberal development policy which encouraged local community self-reliance, social entrepreneurship, micro-enterprise, and cooperative development. Student and community members benefited from this symbiotic learning with the course culminating in student presentations to local community partners.

#### Environmental degradation in the midst of war

Some teams were more mega focused. The ongoing conditions of violence and chaos in the failed state of Somalia provided a case study at the mega level. The violence of war, environmental destruction, and crippling poverty provided the opportunity for analysis of these interconnected concerns followed by the creation of mechanisms with the potential to disrupt the destruction (see Lederach and Lederach, 2011 for history and context). Students learned lessons from the changes demanded by the women of Liberia (see Disney and Reticker, 2008). The use of the change action in Liberia as an exemplar has the added advantage of centring a social worker as a lead social change agent. The women of Liberia, in demanding a voice in the decision-making process, created the space for whole community civic engagement and opened a path to democracy. Using this example, they designed models for creating opportunities for civic engagement at every level, including the creation of grassroots civic engagement. In doing so, a disruption to the conflict and power structure was established. Conflict has relational and transformative characteristics. It did not matter at what level the conflict pattern was disrupted. In disturbing the patterns, room was created for the introduction of new patterns that could be replicated throughout the social context.

#### **Conclusion and implications for social work practice**

The authors used a multidisciplinary course to help students learn how to work in multidisciplinary teams to confront environmental problems at the local, national, and

international level. Teaching sustainability involved introducing students to forms of analysis and interaction with local communities situated in a global context. The process was strengthened through the use of reflective decision making. The interdisciplinary framework has the potential to address the complexity inherent in the work of multidisciplinary teams with the goal of sustainable transformation in a global context. The interconnection between environmental concerns and issues of peace, war, and economic violence was highlighted within the context of a transformative learning environment.

Issues overlap and so do response systems. The ecological (or biophysical) environment is interactively impacted by the tightly connected human social, economic, and political systems. The tension at the intersection of these systems with the ecological environment often produces conflict, yet conflict can be viewed as creative energy. Collaborative interchange across disciplines can support the context for discourse designed to enhance understanding and the reciprocal creation of knowledge. As students and faculty from multiple disciplines share their knowledge, new spaces can be created for knowledge building (Schmitz *et al.*, 2010).

By using real-world case studies, students gained an in-depth awareness of networked interconnections, multilevel conflicts, and costs involved for humans and the environment. Concerns with water as a resource, disaster recovery, war, food security, and poverty were made real, removed from the isolation of the antiseptic classroom. Students were challenged to investigate the political, economic, and social dimensions involved at the micro, meso, macro, and mega levels of analysis. The complexity of human interaction across systems and within the environmental context created points of tension and conflict. Having this multidimensional framework for analysing conflict was useful. Recognizing the holistic and networked nature of conflict suggested that complex practice could be initiated at any level and impact all other levels, simultaneously.

With faculty and students from diverse academic fields, students were exposed to multiple perspectives regarding problem solving. Pedagogically, projects were designed to support the development of collaborative analysis and knowledge building. Through the action of people from diverse disciplines with varied interests, experiences, and knowledge, students came to critically examine local and global social, economic, and political systems from a multidimensional perspective. They explored individual and community sustainability, evaluated issues of diversity and justice, and generated collaborative change models. It is suggested that this strategy for education enabled our students to become active players in the world around them, working for a truly sustainable future.

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