

**Transformative Learning Through Environmental Action  
An Overview of an IDRC sponsored project**

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**Presentation to the Canadian Association for Studies in Adult Education  
Concordia University, Montreal, June 2, 1995**

## **An Overview of the Project**

Theory-the seeing of patterns, showing the forest as well as the trees-theory can be a dew that rises from the earth and collects in the rain cloud and returns to earth over and over. But if it doesn't smell of the earth, it isn't good for the earth.

Adrienne Rich, "Notes Towards a Politics of Location" as quoted in Gaard, EcoFeminism: Women, Animals, Nature, 1993, p.1

The two central shifts in thinking that are being induced by women's ecological struggles relate to economic and intellectual worth. The latter relates to our understanding of what constitutes knowledge, and who the knowers and producers of intellectual knowledge are.

Vandana Shiva, Staying Alive, London, Zed Books 1989, p.224

But at a deeper level of our being we find it hard to suppress the cry of anguish, the scream of horror-the wild words required to express wild realities. We human beings are being led to a dead end...all too literally.

Herman E. Daly and John B. Cobb, Jr. For the Common Good. Boston, Bacon Press, 1989 p. 21.

## **INTRODUCTION**

The overview is organized into seven sections: Background of the project, Context and Framework, Objectives, Methodology, Summary of Findings, Dissemination of Findings, and Conclusions. The Summary of Findings is itself broken down into five sub-headings: What has to be transformed, Principles of Transformative Learning, Practices of Transformative Learning, Indicators of Success, and the Role of Electronic Communications in the project. While this overview is comprehensive in noting major aspects of the study, it should not be read independently of the rest of the report. To do so would be to detract from the richness of the other material, the other ways of writing about and understanding this work and would diminish the more detailed reflections.

## **BACKGROUND**

The ideas for this research project began in the shanty towns of Sao Paulo Brazil with the work of women who have been transforming their lives each day in order to survive and support their children. The ideas came from rural Kenya where elders have begun to speak about their ancient forms of knowledge which may now be needed to sustain life today. The ideas came

from ordinary women and men in places like Canada and Germany turning towards organic farming and a life of less consumption. The core ideas of this project relate to how we learn the skills, perceptions and practices which allow us to transform our lives in new directions. Learning to transform; transforming to learn...abstract ideas perhaps to scholars, but deeply rooted in the daily practices of many. The ideas from many places and perspectives were brought together for the purposes of this study by Moema Viezzer working from a women's NGO in Brazil, Darlene Clover, Budd Hall and Edmund O'Sullivan working at a Graduate Faculty of Education in Canada, dian marino and Leesa Fawcett working at a Faculty of Environmental Studies also in Canada. We were interested in documenting what we could about the nature and role of learning as it is found in locations of environmental action. The initial project was first formulated by Moema Viezzer, Darlene Clover, Budd Hall and dian marino as a contribution to and a way of following up on the Earth Summit in Rio de Janeiro in June of 1992. Hall, marino and Viezzer had been founders of the Environmental Education Network of the ICAE. Viezzer, as ICAE Environmental Education Network Coordinator and Clover as Environmental Liason Officer for the ICAE Secretariat in Toronto were working together in preparation of the main educational forum of the Earth Summit, the Journey of Education. Viezzer and her team in Brazil with support from Clover in Toronto were responsible for the 18 month process which resulted in the treaty on *Environmental Education for Sustainable Societies and Global Responsibility*. This treaty was debated and refined through a participatory process involving over 300 persons working in Rio de Janeiro under a tent for days.

The several years of networking in the international adult education community and the work relating to the Earth Summit process raised a number of questions:

1. How could the learning dimension of the environmental movement be strengthened?
2. What can be learned from environmental action campaigns about the ways in which learning takes place and can be most enhanced?
3. Which combinations of pedagogical practice hold out the most promise for transforming relations of power and perception?

Our concerns went beyond looking at environmental education in formal settings, although studies of that nature are most valuable. Our concerns went beyond our own experiences in popular and adult education, although we need more research on that work as well. Because of the overwhelming fact that those persons who have the power to transform the world in the short run are adults, we believe that more attention deserves to be paid to adult and public education in its many sites. Adult education is the fastest growing sector of education world wide in the 1990's, but environmental adult education represents a very small part of the overall picture.

The ICAE has been encouraging and supporting the development of the concept of 'popular education' since the early 1980's. The World Assemblies of Adult Education in Buenos Aires in 1985 and in Bangkok in 1990 brought the concept and practice to the attention of the world's adult education community. Popular education refers to a process of learning which begins with the concrete experiences of the learner, involves a high degree of participation,

recognizes mutual learning, stresses the creation of new knowledge and is directed towards social, economic or other forms of justice and democracy. Research however about environmental adult, non-formal or popular education has been under-researched. As Hartmut Schneider, editor of the 1992 OECD study Environmental Education: An Approach to Sustainable Development notes, "there is a descent from these heights (where environmental education has been considered as 'the key to sustainability')...to the place accorded environmental education in practice". The OECD study, the most comparable study done along these lines previously goes on to say that environmental education constitutes a learning process in which the entire society ought to become involved.

### Transformative Learning

We have chosen to use the term transformative learning, rather than popular education, environmental education or adult education because it is not already 'owned' by either formal or non-formal education interests and calls forth by its very naming, the need for and desirability of change. Transformative learning, as we have framed it in this study, refers to the process of learning, whether in formal or non-formal education settings which is linked to changing the root causes of environmental destruction or damage; changes in relations of power, gender relations and other patterns which allow for a healthy relationship with the earth. And as a means of deepening the analysis of this work, OISE has created a Centre for research and reflection about transformative learning named appropriately the Transformative Learning Centre or TLC.

## **CONTEXT AND FRAMEWORK**

This study explores the role of learning in the context of sustainable societies and global responsibility. It is a study of the learning dimensions of environmental actions and campaigns. It is concerned with how to strengthen environmental education within the broader environmental movement and what can be learned for pedagogical and popular education purposes by the study of the learning dimensions within this movement. The study grew out of the groundbreaking work accomplished at the United Nations Conference on the Environment and Development and the Global NGO Forum in Rio de Janeiro in June of 1992. Specifically, the project grew out of the visionary work accomplished in the development and achievement of the "Treaty on Environmental Education for Sustainable Societies and Global Responsibility"(see appendix).

This treaty was part of the participatory process of the International Journey on Environmental Education which developed a worldwide consensus in a meeting of over 500 representatives from all over the globe. The final version of the Treaty was the culmination of a long process of discussion and revisions that took place between November 1991 and June 1992. From the preamble of the Treaty:

This treaty, as in education, is a dynamic process and should therefore promote reflection, debate and amendments.

We signatories, people from all parts of the globe, are devoted to protecting life on earth and recognize the central role of education in shaping values and social

action. We commit ourselves to a process of educational transformation aimed at involving ourselves, our communities and nations in creating equitable and sustainable societies. In so doing we seek to bring new hope to our small, troubled, but still beautiful planet.<sup>1</sup>

This treaty also outlined a course of action as a follow-up to take place over three year period.

In addition, the Treaty suggests that action be coordinated to support movements which are working for improving the quality of life and extending effective international solidarity while fostering links between NGOs and Social Movements to review their strategies and programmes on environment and education. The present study is a specific international cooperative embodiment of the specific actions proposed above.

Some of the working assumptions of the present study were developed in the treaty process and we summarize several of them here:

1. The root causes of such complex problems as increasing poverty, environmental deterioration, communal violence can be found in the dominant socio-economic system. This system is based in over production and over consumption for some and under-consumption and inadequate conditions to produce for the great majority.
2. The above crisis stems from the erosion of basic values and alienation and non-participation of peoples in the development of their futures.
3. We must, in a world context, start developing fundamental alternatives to existing conventional economic development models. Such alternatives include the abolition of those programmes of development, adjustment and economic reform which maintain the existing growth model with its devastating defects on the environment and its diverse species, including the human one.
4. The fourth assumption is the "quality of life" assumption. In line with the treaty , we consider that environmental education should urgently bring about change in the quality of life and a greater consciousness of personal conduct, as well as harmony among human beings and between them and other forms of life.

The Treaty also elaborated a number of principles for education for equitable societies which we have incorporated into the framing of this study:

1. Education is the right of all and we are all learners and educators.
2. Environmental education is not neutral, but it is political and value full rather than value free.

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<sup>1</sup> Treaty on Environmental Education for Sustainable Societies and Global Responsibility, Rio de Janeiro, June 09, 1992.

3. Environmental education must be holistic in approach and interdisciplinary in nature, focusing on the relation between the human, nature and the universe.
4. Environmental education should treat critical global issues, their causes and interrelationships within their social and historical contexts.
5. Environmental education values all different forms of knowledge. Knowledge is diverse, cumulative and socially produced and should not be patented or monopolized.

## OBJECTIVES

In our original submission to IDRC, our objectives were noted as follows:

1. Identify indicators of success for transformative learning within environmental action contexts;
2. Undertake an international survey of transformative education initiatives;
3. Develop a number of conceptual working papers dealing with the central concepts of transformative learning through environmental action as seen through a gendered approach to environment and linked to the specific focus on food production and biodiversity.
4. Organize a collaborative workshop for the analysis of how transformative learning works for the authors of the case studies and the project team members.
5. Document the setting-up and use of an electronic computer-based network for project administration, conceptual development and information sharing.

## METHODOLOGY

This qualitative and comparative education study has been carried out in a collaborative and participatory framework. It has been a collaboration between three different research teams: Budd Hall, Darlene Clover and Edmund O'Sullivan of the Transformative Learning Centre based at the Ontario Institute for Studies in Education (OISE) in Toronto; Leesa Fawcett and a number of graduate assistants of the Faculty of Environmental Studies (FES) at York University also in Toronto and Moema Viezzer and her team which drew on expertise from both CEMINA in Rio De Janeiro and REDE MULHER in Sao Paulo, Brazil. Although in practice the differently situated knowledges of the three different research teams overlapped often, in theory the three teams represented a diversity of skills and experience in international adult and popular education and educational theory (OISE), environmental education, nature and society (Faculty of Environmental Studies) and women-centred environmental popular education and action (Cemina/Rede Mulher).

The basic design and conceptualization of the project was carried out by Hall, Clover, O'Sullivan, Fawcett and Viezzer. This team met on five separate occasions during the formulation and implementation of the project. Darlene Clover, as the Senior Research Officer on the project carried out most of the day-to-day coordination of the work. Moema Viezzer was responsible for the identification of case studies and case study writers and together with Darlene

Clover for the design of the collective analysis workshop. Leesa Fawcett and her team at York University were responsible for the international survey. Darlene Clover and Rory O'Brien of WEB were responsible for the use of electronic communications in the project. Budd Hall has been responsible for the writing of the final project overview.

Early in the design of the research, it was agreed that the range of experiences of transformative learning in the entire field of environmental action was too large and diverse to be able to provide enough points of comparison in this piece of comparative research. It was agreed therefore that the case studies would be drawn from experiences of environmental action in the context of food production, distribution and consumption. Food is life itself and from the point of view of food, or even, as we were to discover in the study of the 'Nine Seeds' project in India, from the point of view of the seed, all relations with nature can be understood. As Leesa Fawcett points out in her paper written for this project and included in this report, everything we put onto our food, we eventually eat.

### The Case Studies

Navdanya: A Grass Roots Movements to Conserve Biodiversity and Sustain Food Security  
Vanaja Ramprasad (India)

El Daen: Environment Conservation  
Naila Babiker Hijazi (Sudan)

Berlin and Brandenburg as Centres of Environmental Activism: Organic Food Consumption and Organic Gardening and Farming  
Elisabeth Meyer-Renschhausen (Germany)

Community-Based Rural Development Project: Community Ownership, Empowerment and Cultural Recovery  
Jose Zarate (Six Nations Community, Canada)

Women in Citizen's Action: The Struggle Against Hunger and Poverty and in Defense of Life  
Moema Viezzer and Tereza Moreira (Brazil)

Transformative Learning in Marginal Areas of Indigenous Migrants in an Amazon City  
Omar Ovalles (Venezuela)

People's Rights, Environmental Education and Ecological Action for Sustainability  
Marta Benavides (El Salvador)

The research design represented a combination of approaches designed to provide as much illumination as possible to the research questions. It combined elements of documentary research through the preparation of four major working papers. It included a series of case studies prepared by writers directly engaged in the actions identified. The study also included an international survey of transformative learning as identified by groups themselves.

The data generated by the working papers, the case studies and the first stages of the international survey were analyzed in a collective analysis workshop which brought together the various case study writers, the research coordinating team and additional research assistants. The collective analysis workshop, itself a powerful example of transformative learning, placed the experiences of the environmental activists-researchers at the centre of the analysis and through a variety of participatory research and popular education techniques, reflected on the role of learning.

The report of the collective analysis workshop was compiled by Darlene Clover and circulated to the case study writers and other participants for additional comments, corrections and additional insights which they might have gained after leaving. In addition the proceedings of the workshop were video-taped in order to have a full record of the events and to produce a video report of the workshop for those interested.

## **SUMMARY OF FINDINGS**

This summary cannot possibly do justice to the richness of the interactions, the depth of experience shared in the project or the full sense of transformative vision which passed among the project team at several moments during collective analysis workshop. We have provided as much of the background documentation and material as possible so that others will be able to work with the data as well. We have also produced a video report of the workshop itself which we hope conveys something of the spirit of the work and at least allows us to share some of the images of ourselves with the readers.

Our summary, guided by the analysis coming out of our collective analysis workshop, is structured as follows:

1. What has to be transformed?
2. What are the principles of transformative learning?
3. What are the practices of transformative learning?
4. What are indicators of 'success'?
5. What did we learn about using electronic communications?

### a. What has to be transformed?

The starting point for transformative learning is an understanding about what it is that needs to be transformed. Transformative learning and related concepts of adult, non-formal, popular or environmental education are located somewhere; they are centred in the daily lived experiences of women, men, girls, boys, animals, plants, relations of inclusion and exclusion and so forth. In the workshop this question brought forth many answers and great debates.

### Life conditions

From all participants came the response that the "life conditions" of the majority of the people around the world need to be transformed. From Brazil there was talk of the "food refugees", people coming to the city for no other reason than to find foods to feed the family. We heard of the difficult task of surviving in the increasingly desertified areas of Sudan with little food or water. Those from countries such as Canada and Germany deal with the overconsumption of foods which are bad for us...often grown on land in poor countries which

has been taken from small farmers. The poor housing of forgotten aboriginal peoples in the urban Amazon is as much a condition of daily life as the more romantic visions of isolated peoples living close to nature. Also in the 'North' the privileged classes in particular generate mountains of waste which destroys communities and damages the ecosystem; cars are used instead of bicycles or mass transportation. And overwhelmingly in all communities in all countries in all classes women and girls carry increasingly responsibility for the maintenance of the 'quality' of life.

#### Systems of destruction

A strength of ecological frameworks is their ability to demonstrate the interconnectedness of all life cycles. On a global scale, by coming together from many locations in our different societies and many different geographic settings, we actually 'felt' the systemic nature of various destructive forces through the stories we told. For example we heard from India and Brazil how the emphasis on mono-culture has resulted in a shift from local growing and consumption patterns to patterns of production for the world market. And as part of the systemic nature of mono-production small farmers have been forced to sell their land, there has been a loss of traditional seed diversity, men have left their families in search of work, and the generation of wealth has been shifted from local to global. The global systems of production and consumption were described by at least one participant as, "a killing machine" as the levels of violence within local communities are on the increase even as levels of violence at the 'super-power' level are on the decrease. The Fawcett paper provides important information on 'circles of poison' in foods because of our agricultural practices.

#### Practices of power and privilege

All participants spoke of the need to transform practices of power and privilege. Government policies reinforce already existing relations of power providing one set of rules for the oppressed, another for the privileged. It is through such practices as those in education, agricultural extension, communications, land tenure, borrowing and lending, seed and fertilizer sales, food security or even governance that existing relations of power and privilege are maintained. On global levels these are maintained by the rich countries, among people by white males, within nature by human beings, within class structures by those with financial capital. The practices of power and privilege for example were directly linked to the ecological destruction of El Salvador, according to one of the participants. In the case of the Six Nations case study from Canada the practices of white dominant culture agricultural practices resulted in the loss of traditional knowledge about food cultivation. In India the practices of the multinational agribusinesses to remove conservation of genetic seed stock from local levels to company controlled laboratories undermines the capacity for subsistence, fosters many forms of intellectual piracy and puts entire farming systems at risk to possible infestation damage.

#### Gender relations

The Navdanya project in Southern India focuses on the role of women as 'keepers of the seeds'. This is at once a practice of physically looking after and keeping the seeds from one season to the next as well as a metaphor for the special role of women in preserving bio-diversity in our world. In a second example from the Brazilian hunger campaign, it was shown that the

majority of the households experiencing hunger and malnutrition were headed by women. Women are also the majority of the organizers on the front line in the Brazilian campaign and the vast majority of the other global environmental action campaigns which we looked at. The questions being asked in Brazil and elsewhere are, where are the men, why have they left, why on issues of survival are men increasingly missing? Existing gender relations with their resulting divisions of male and female labour and responsibilities for daily life in homes, businesses, universities, science and politics and other domains contributes dramatically to the risks to planetary survival we now face. What will the continued impact of a global market system designed and run by men be on the lives of those left behind...both women and men? Patriarchal dominance of fields such as genetic engineering, agra-technology and the production of arms to date offers little hope for the well being of the planet.

#### Ways of thinking, speaking, learning

In the collective analysis many of the observations made by the participants referred to the necessity of transforming our intellectual paradigms relating to environment and learning. It was noted that the concept of 'development' and 'modernization' actually contributes to ecological destruction. Much of our language excludes those persons with whom we need to work. Binary thinking, where we try to understand the world in terms of North-South, male-female, right-wrong and so forth impedes our ability to find solutions to ecological problems which are better understood in systemic and holistic ways of thinking. The example from the Sudan of the development of a Code of Behaviour developed by isolated rural people to develop new relations of understanding and respect amongst all living things is both an educational practice, an act of learning and an example of a new way of thinking for many of us. It does not always mean discovery of new knowledge. In the case from the urban Amazon setting in Venezuela the transformation in ways of thinking and learning had to do with the recovery of what they called 'sleepy knowledge', or already existing knowledge.

#### b. What are the principles of transformative learning?

Transformative learning, as Hall and Sullivan note in their paper, contains moments of survival, critique and creation. It is about working with the following principles in the intentional creation of educational practices and processes. The principles which we are including here have emerged from the case studies and the dialogue during the collective analysis workshop.

1. Recovery of a sense of place
2. Recognition of the importance of biodiversity
3. Reconnection with nature
4. Awakening 'sleepy knowledge'
5. Acting and resisting
6. Building alliances and relationships
7. Learning skills
8. Recognition of historical struggles and resistance
9. Valuing process in learning
10. Understanding relations of power

### Recovery of a sense of place

Simply put, it is the contention of this research, that our propensity to destroy the ecological balance in our communities varies according to the degree of 'sense of place' which we have. Our work reinforces the significant literature on bio-regionalism and means that in thinking about the planning of intentional learning, we need to build practical and theoretical ways to recover our sense of place. Place refers to our locations in bio-regional terms and also in terms of such social indicators as race, class, gender, sexual-orientation, and able-bodiedness.

### The importance of bio-diversity

Bio-diversity is that complex celebration of difference which allows for the flowering and survival of the world. Respect for bio-diversity means honouring space for bio-diversity to flourish. Bio-diversity performs its magic best when performing in settings which most humans understand as wild. The reduction of bio-diversity in the form of fewer seed varieties, extinction of animal species or the disappearance of other life forms threatens our survival. The full implications of concepts such as bio-diversity have broad meanings even for our understanding of the roles of our particular human species. Respect for Education of a transformative variety increases the visibility and understanding of the importance of bio-diversity in ways that make sense in the particular context involved.

### Reconnecting with nature

Our pedagogical practices, according to our understanding of transformative learning, need to seek specific ways for us to reconnect with nature. The first aspect of this is the recognition that we are part of nature and not apart from nature itself. We are connected with every form of life as we share the same molecular building blocks. Our collective ability to survive as a collectivity of all living beings depends on each of our species surviving. The emphasis is on ecologically interconnected webs of life. This means that opportunities of a theoretical, practical, experiential and participatory nature whereby students, adult learners, members of the public can begin to recover the sense of the natural need be sought.

### Awakening 'sleepy knowledge'

The knowledges of ancient peoples, the knowledges of women, the knowledges of those who live closest to subsistence have so very much to offer us in doing environmental education. Because knowledges and system of thinking have been so dominated by euro-centric, rich country, patriarchal paradigms, older and non-dominant forms of knowledge have been allowed to 'go to sleep'. The notion of sleepy knowledge, coming in our study directly from urbanized indigenous women and men in Puerto Ayacucho in Venezuela, refers to the fact that specific knowledge about how to live in closer harmony with nature making use of natural products still exists but needs to be reawakened. So the processes of recovery and reawakening as part of our pedagogical work in transformative learning are key.

### Acting and resisting

Transformative forms of learning as we have come to understand them through this study are very much seen as action-oriented, learning by doing. To some extent we shared an earlier

sentiment as Marx who once noted that the point of philosophy is not simply to understand the world, but to change it. Transformative learning believes that acting on the world, making and remaking the world is one of the most profound ways to understand it. It might well be argued for example that even Western science, with its built-in biases, offers us sufficient proof of the declining health of our biosphere. But that knowledge cannot help us if it is not linked to social and political action which will make changes in the laws or practices which destroy us. Resistance, itself a form of action, is that quality which allows us as individuals and as collectivities to maintain our sense of integrity and community thereby denying others of power over us in important ways. Transformative learning seeks out action and supports resistance.

#### Building alliances and relationships

In each of the examples of transformative learning which we have looked at in our research, there has been a strong emphasis on the importance of people working together. This is because change of a systemic nature is a long-term matter which requires skills and energies beyond any single person. Each of our cases of transformative learning involved the creation of alliances across groups which were different. In Sudan the rural environmental association created an alliance with adult educators at the University of Khartoum. In Brazil popular organizations of street kids, workers, women and others came together in a poverty and hunger Campaign. In El Salvador former members of the armed opposition established new alliances with peasant leaders. Transformative learning needs to find ways to strengthen our skills in working with others. It has to do with organizing, understanding difference, respecting diversity, learning how to build consensus, reaching out to those who do not share our views and with sustaining long term political and operational strategies. This may be shanty town women coming together to start a food bank. It may involve campesinos in El Salvador eating together or joining the Rural Leadership Network. It could be Canadians linking up around community shared agriculture. For us as environmental educators the question is how can we put into practice ways of learning which strengthen the building of relationships?

#### Learning skills

Transformative learning is not just about understanding concepts and connections, it is also about learning and teaching specific skills. Words like empowerment sometimes obscure the fact that there are specific skills involved in environmental action and that learning how to do something may be as empowering as a new insight that gives broader meaning to ones daily life. In the Six Nations of the Grand River in Canada for example, learning how to farm in the traditional way of the ancestors involves skills as well as consciousness. The creation of organic bio-shops in Germany requires skills in running a small business. The challenge to those of us who work or seek to work with transformative forms of learning in these contexts is to look for the specific skills needed for the actions intended and finding ways to learn or provide them.

#### Recognition of historical struggles and resistance

Part of the way in which the powerful control others is to deny them their history. Our text books and histories are filled with the stories of the rich and powerful. The struggles for

the rights of workers, women, people of colour, persons of different abilities and others are difficult to find. Similarly the struggles of the thousands of women and men who have resisted ecological destruction often with their lives need to be part of a transformative learning process. The connection with historic struggles not only is a source of energy to keep going, but is a source of knowledge for the transformative work needed now.

#### Valuing process in learning

How many environmental education activities have you noticed that have focused on trying to get the most 'facts' crammed into our heads in the shortest period of time? Transformative learning means that the process of the learning itself is as important as the content. Beginning with the daily lived experiences of those involved, transformative learning calls for increased attention to the relationship of the learning processes to the overall goal of our work. The facilitation of transformative learning fortunately can and does draw on the rich practices of adult, popular and community education. Practices which are appropriate to the culture and respect different ways of learning are similarly emphasized.

#### Understanding relations of power

From our research we found learning for transformative purposes to be also involve understanding relations of power within a specific context. Understanding relations of power helps in understanding the nature of any given natural exploitation or abuse. For example in the case of the Navdanya project in India, understanding the relations of power within the Indian state, the Agra-business global corporations and the sale of hybrid seeds and fertilizers is an important part of the village level seed project. Such a seed conservation project would not be as effective if only the conservation practices were learned in the absence of understanding the relations of power. Understanding the relations of power also allows for the potential to alter those relations and very importantly provides a framework for analysing future actions by agra-business interests. Power flows through each and every practice in everyday life via gender relations, race and ethnic relations, class relations and more. Sensitivity to the complex relationships in power and knowledge in ecological contexts is a goal for transformative learning.

#### c. Practices and Processes of Transformative Learning

When all the participants were together for the collective analysis workshop, we were able to identify nearly 100 specific practices and processes of transformative learning. In the course of our discussions it was evident that many of the practices which formed the heart of the environmental actions under discussion had not been intentionally designed as educational practices, but in fact became key moments for very powerful learning which deepened the understanding of the actions at hand and reinforced the sustainability of the overall work. More details on these practices can be found in the case studies and in the notes from the workshop itself. Many of the principles identified in the section above are incorporated in these practices. We have chosen only two or three examples from each category to illustrate a variety of practices.

#### Celebrations and rituals

Celebrations and rituals represent an important form of environmental education having the capacity to combine new and old knowledges, spiritual and physical activity and ways of coming closer to the earth. Meditation has been used as well in some of the case study locations. In making use of celebrations and rituals for environmental education, we are drawing on some of the most powerful and ancient methods known to us. These are but two of what are literally thousands of such activities. As part of this project, we drew on small celebrations throughout our collective analysis workshop and closed the entire week with a ceremony of collective weaving of a web of sisal twine pausing each time to think about what our experience had meant to us.

### **Festival of the Seed, India**

The Navdanya project in India sees transformative learning as an awakening of spiritual faculties that slumber within the farmer. Learning is the drawing out of wisdom lying dormant within the vast range of agricultural experience that the farmer has. One of the practices used by Navdanya is the incorporation of traditional festivals for the seasons into the work of identifying and preserving the best genetic stock for the coming seasons. In this ceremony women play the central role as 'keepers of the seeds' as they participate in an elaborate festival of song and dance which focuses the entire community on the process of seed preservation. The seeds which have been selected for keeping have identified by the local farmers who have elaborated their own criteria for selection of seeds based on qualities which they base on their very specific contexts including the desire to grow without imported fertilizers.

### **Sharing of Traditional Histories, El Salvador**

The Rural Leaders Network in El Salvador believes that their cultural, spiritual and agricultural work feeds the empty stomachs, supports the community and feeds the soul. The spiritual aspect of life, they note, must not be underestimated. They make extensive use of song and music in their training programmes. They pay particular attention to the sharing of traditional histories when they begin their training. They ask the leaders from the different communities to tell the stories of their communities. These are communities with many thousands of years of history and the telling and exchanging of each story calls forth the years of resistance of the people of the region and shows common elements among them.

### **'On-the-spot' Learning**

In India they spoke of in situ learning as opposed to ex situ learning which was compared to the practices of in situ preservation of seeds compared to ex situ preservation of seeds. It was pointed out that maintaining control of the genetic stock would be done more responsibly in the communities than by private companies in seed laboratories somewhere else. If we think about educational work, the same thing might be said; education works best when it is kept close to the communities and suffers when it is designed at a distance by others. In all of the case studies we examined, a majority of the learning was done in the farms, homes, shops, workplaces or elsewhere that work and daily life was going on. The links between action, relevance and natural processes are so much more obvious when one is standing in the field.

### **The Community Garden, Six Nations, Canada**

When Lehman Gibson works with the trainees at Six Nations of the Grand River near Brantford in Southern Ontario in Canada, he does so on the gently rolling land behind his home which is one of two community gardens and test sites for the growing of traditional varieties of indigenous foods. His stories grow out of the land much as does the corn, the squash and the beans...the traditional three sisters of the Iroquois confederation. Whether thanking the creator directly in a prayer before working or simply through the respect he shows for the earth which brings so much each year, the trainees get spiritual, technical and philosophical learning while they work on the spot.

### **Reclaiming Urban Space for Gardens, Sao Paulo, Brazil**

In the shanty towns of urban Brazil the homes are small and close together. And while we are used to thinking of gardens and farms as rural experiences, the women's groups in the Hunger Campaign have begun to reappropriate urban space to create gardens for the cultivation of 'seeds of diversity'. In spaces that have usually been used for garbage, women have reclaimed the land for gardens where some women grow one crop and others another and then they share together what they grow. And while it is very difficult to provide security for the crops in a community where hunger is so prevalent, the urban gardens provide more than just a source of food. They are at the same time a place for women to come together to figure out a variety of other ways to survive. The gardens also offer ideas about other more productive uses for the urban land that all too often becomes just another dump.

### Learning from Elders

To some extent all of the case studies examined had an element of learning from elders. In the case of Germany, the urban women and men of Berlin in their desire to transform themselves from consumers to sustainers went to some of the older organic communes in the surrounding countryside to learn from the old timers who had been working there for a long time. In the Six Nations agricultural project two Elders, one man and one woman are recognized as key advisers for the project as well as teachers on practical farming and gardening experience. The members of the Six Nations community would simply not create work at a community level without the involvement of some of the Elders. Similarly in the El Daen area of Sudan, the Elders (all male in this case) were at the heart of the conservation decisions and leadership. Who are our elders in the various educational contexts that we work in?

### Community meetings

Another practice which was found in all of the projects were the use of community meetings of both an informational and participatory nature. Transformative learning in the examples studied made full use of the very wide variety of popular education and adult education methods in these community settings. Cinema study groups, story telling, using cartoons, using posters, community theatre, role playing, song, music and art were all used by the various campaigns. The Brazilian campaign, the work in El Salvador, the work in Venezuela and India all had a rich and imaginative use of participatory approaches for use in community meetings.

### Nature tours/study visits

Nature can teach us much if we can learn to hear its messages and read its signs.

Sometimes other species and plant life are all around us. In these cases educators need to learn to be quiet and become more open to the world around us. Sometimes in urban settings we feel distant from and apart from the other parts of our natural world. In these cases it is useful to go to places where nature is more healthy and sustainable from an ecological point of view.

In Sao Paulo, one of the study visits involved taking the women from the shanty town to the area water treatment plant. Here it was possible for the women to see all the chemicals put into the city water and to talk with the workers there about how water becomes contaminated in the first place. This results of this visit were clearly seen when the women's group reclaimed a spring that existed in their neighbourhood by removing all the rubbish and putting up a barrier around it so that it would be kept clean.

In Berlin, urban environmental activists in search of a way to strengthen their relationship with nature began to make visits by bicycle to organic farms in both the former West and former Eastern parts of Germany surrounding Berlin. Similarly in the Indian case study where one of the objectives is to educate the consumers of various food products, study visits of towns folk to villages has been organized.

#### Gender analysis

Women and their lives are at the heart of transformative learning. Understanding the differential impact of environmental destruction on the lives of women is critical to being able to find a solution in most cases. In all of the case studies, women, because of their central role in food growing, food preparation, and care-giving in general are fundamental to any possible transformation. This means that educational practices which directly or indirectly allow for increased visibility of the roles of women, particularly among the men are important. Practices such as consciousness-raising, feminist popular education, cooking classes and other activities which simply allow women to be together outside of the very heavy load of daily work were found in most of the case studies.

#### Medicinal plant collections

In the work in El Salvador, Six Nations of the Grand River, Venezuela, Germany and the Sudan the uses of plants for various medicinal purposes has arisen as a practice. In El Salvador in particular, the growing of medicinal plants is a central part of the rural leadership work. Recovery of knowledge about medicinal plants strengthens the self-sufficiency of communities and reduces the dependence of expensive imported medicines for many common ailments. There has been a revival of such interest in each of the countries looked at and the active tending of such herb gardens has proven to be an excellent adult education tool.

#### Kitchen compost piles

In Brazil and Germany the keeping of a kitchen compost pile was an intentional part of the work of environmental activists. The use of a compost pile with its direct and visible lesson about reducing organic waste and the power of nature to nourish itself by turning waste into good soil is one of the best ways of letter nature teach us. Along with reducing our creation of rubbish, the recycling of organic products can make a substantial difference in our communities.

#### Marches and protests

Environmental action involves so many ways to act. Sometimes it is important to take collective action in order to bring certain information to the authorities involved. These marches, protests and other forms of non-violent action are always very powerful ways to learn about the distribution of power, the role of different kinds of knowledge and the strength of acting together. Whether in India protesting the patenting of the Neem tree or in Brazil going to local authorities to provide clean water, the right to take collective action is one of the most powerful learning tools and means of responding to unfair environmental practices available.

#### Creating community markets

In both the Berlin and Six Nations case studies, the creation of a community market has been suggested as an educational as well as an economic structure. In Berlin, green activists want to buy local organic produce. They have been prevented historically from doing this because the large food producers and food marketing organizations have had a monopoly of food distribution. The creation of local 'bio-shops' where local producers can find buyers has proven to be both a functional marketing arrangement as well as an excellent place for informal education to take place. The buyers, sellers and shop-keepers educate themselves about so many issues having to do with ways to live more lightly on the earth.

At Six Nations, the market research done for the start-up of the project, indicated that the community spent nearly \$11 million dollars a year for food. None of that money was spent in the community. So as part of the recovery of traditional food crops and better use of the land in the community there are plans for a combination community market and educational centre. This market/educational centre would serve both the community itself with films and talks about aspects of indigenous agricultural and culture and would be a destination for outside visitors wanting to buy locally and learn something about the area.

#### d. Indicators of Success: How can we know that transformative learning is happening?

This section, like the others draws from all the case studies, the analytic papers and from the collective analysis done at the workshop in May of 1994. The concept of "indicators of success" was criticized by some of the participants as being too much the language of top-down externally driven training or education. But as discussion continued, we began to formulate a series of practices by which we might look at any given situation. It must be stressed that the specific contexts are the key to any question about success with the fundamental question being success for whom? The question of 'success' needs to begin with the women, children and men whose lives are at the heart of the specific processes in question. In what follows we are talking about what might constitute positive results for activities of environmental education in contexts which are responsive to and respectful of local differences and diversity.

#### Development of new practices

To what extent have new practices surfaced or developed? This obviously differs in each context. In Berlin, the citizen groups involved with the greening of the city wanted to see more bicycles being ridden on new bicycle lanes. In Sao Paulo, Brazil women wanted to reclaim land for urban gardens so the number of new gardens is an important fact. In the Indian case, farmers refusing to buy fertilizer and hybrid seeds is a new practice indicating a new awareness. In Puerto Ayacucho, Venezuela, increased uses of Palm trees constitutes a new practice. Each

environmental action will have potential to support new practices of very different types.

#### Participation and mobilization

Mere participation is not in and of itself much of an indicator, but increased participation in specific new practices or in activities based on local mobilization to try and organize for a change can be most important to know. In a large scale campaign such as the poverty and hunger Campaign in Brazil, increased participation is a critical ingredient in the overall effectiveness of the project. In village seed conservation projects, the number of families participating in the seed conservation programme is valuable and is in fact an objective of the project. One could of course turn this indicator around and say that decreased participation in agra-business programmes or farming practices dependent on artificial fertilizers would be the measure of success. Participation needs also to look at the question of who is participating? What is the role of indigenous peoples or women in a particular process. However it is taken, participation and mobilization are valuable areas of focus.

#### Changes in gender differences and roles

To what degree are women treated better? Do more men begin to stay in the community and help or do they continue to leave? Do boys and girls begin to share roles in more equal ways? Is there more awareness of the differential impact of toxics, pesticide poisoning, and unsafe food supplies on women and girls? Are women given support for the additional work they take on in providing energy for environmental action projects?

#### Connections are made between local and global contexts

To what extent are people making the connection between the seed which they hold in their hands and the global struggle over ownership of genetic stock? Can people understand the link between hunger in their homes in Sao Paulo and the expansion of business interests into sugar cane production for alcohol for cars in the cities? Why are the varieties of food crop species declining? Why are traditional uses of the Palm tree being lost due to artificial substitutes? What does 25 years of war mean for the eco-system of El Salvador.

#### What new knowledge is produced or recovered?

Our participants said one indicator of success would be when academics begin to learn from local people. We might want to add and when local people get credit for the knowledge! Are new uses of plants revealed or rediscovered? Are new understandings of relations of power which keep change in environmental matters from changing noted? Are new ways of relating to other animals and plants learned? Are new ways of gardening, composting, preserving foods learned? Have new ways of understanding the role of non-violent action been identified? Have citizens produced new knowledge about the impact of consumerism on their own lives?

#### Legislation and regulations

Is local legislation introduced to control environmental degradation and is the legislation enforced through a court or similar bodies? Are international rules and normative statements put together on issues of loss of bio-diversity? Are new codes of behaviour developed spelling out new relationships between people and other living things? Are laws regarding levels of

pesticides in our food monitored and enforced? Are people's right to land enforced by law? Is the right to learn respected? Has the environmental action moved from practice to law?

#### Increased self-sufficiency and bio-regionalism

To what degree are local practices being found for local issues? To what degree are local farmers independent of global suppliers for agricultural inputs? To what degree do local farmers supply local populations with foods? To what degree does international information available support community-based decision making? To what degree are land use issues based on the specificities of the bio-region in question. To what degree are people de-linked from the global market?

#### Increased cooperation

Are there new structures for cooperation re marketing, seed sharing, using traditional products, solving as yet unidentified issues? Have people's isolation in the face of unjust environmental practices been reduced? Are individuals able to get support for struggles against landowners, unfair government regulations or other forms of oppression?

#### New Alliances and Networks

Effective environmental action and the related transformative learning according to this research encourage participation in broader alliances and networks. To what degree are local communities able to gain solidarity or share local knowledge with others in a broader alliance? To what degree are local activists able to make use of information available on national or international networks to strengthen their own actions?

#### e. The Uses of Computer Networking in the Project

I encourage readers to take a look at the full notes on the extremely rich and heated discussion which took place about the value of computer-based networking for our work in the project. The full use of computer-based communications was planned from the beginning as an important part of this project both as a means of linking the project coordinators in two parts of Toronto with Brazil and so that case study writers might be able to communicate with all of us from their respective countries. In the final analysis computer-based communications played a very minor role in the project. In summarizing our experiences with computer-based communications we would say:

1. The best use of computer networking was made by the OISE Transformative Learning Centre which used it primarily for searching through the hundreds of global computer networks for information which might compliment the work which we were doing.
2. The Toronto-based team, all of whom had access to computers and networking software and training did not in fact use the computer networking system, even the internal TLC project bulletin board at all. We simply called or saw each other.
3. In spite of the purchase of a computer and training for the Brazil connection, we never once used the computer instead of the fax. In the Brazil office there was only one computer and one

person who know how to use it, so access was not easy. In addition there were irregularities on the local phone lines so that messages were sometimes held up.

4. None of the case study writers had access to computers in the communities where they worked. Further in the collective analysis session they were quite angry to learn that Ontario is spending about \$100 million on the provincial information highway while most of the people they work with are hungry. Where does the North get this kind of money? Can computer-based communications really serve issues of justice and distribution of information to grass roots organizations in the South or will this be one more way in which the gap between the haves and the have-nots is widened?

## DISSEMINATION AND DIALOGUE

There has been substantial interest in this project prior to the the pulling together of this draft final report. We have been able to respond to a number of invitations to either publish information on the project or make presentations. Unesco's Connect international newsletter on environmental education has published information about the project. In Canada Alternatives, the environmental quarterly from Waterloo University has publicized the study and shown interest in publishing more on the results. Edmund O'Sullivan presented a paper based on his work at the Comparative and International Education Society meeting in San Diego in March of 1994. Darlene Clover has presented papers based on the research at the Canadian Association for the Study of Adult Education conference in Vancouver, British Colombia in June, 1994 and again at the Association for Research on Non-Profit and Voluntary Associations in San Francisco, California in October, 1994.

The North American Alliance for Popular and Adult Education, a group linking community-based educators from Mexico, the United States, Quebec, English-Speaking Canada and Aboriginal nations, invited both Budd Hall and Darlene Clover to share the results of the study at their founding General Assembly in August of 1994. One of the results of this was the invitation by NAAPAE for Darlene Clover and Budd Hall to become the first coordinators of the Environmental Popular Education network. We have begun to take the findings of this project and move them into the North American context in quite substantial ways.

On the local scene, the Ontario Healthy Communities Coalition, which has community representation in some 60 Ontario communities invited Darlene Clover and Budd Hall to facilitate a workshop at the Annual General Assembly of the Coalition November 25/26, 1994 in Port Elgin, Ontario. The OHCC brings together Health, Environmental, Community Economic Development and other interests in a broad-based coalition concerned with the notion of 'healthy and sustainable communities'. Leesa Fawcett has incorporated aspects of this study into work she has undertaken in the development of an environmental education syllabus for the Commonwealth of Learning. She has also incorporated material into teaching at the FES.

Finally, a most important breakthrough has been achieved with the invitation by the ICAE to the project to present the results to the International Workshop on Environmental Adult Education which is taking place at the University of the Philippines at Los Banos December 5 - 15, 1994. This international workshop brought together 30 environmental adult educators from

12 countries who will continue to work together for a further two years.

## CONCLUDING REMARKS

Coming together in support of healing processes with the earth is a source of the most profound spiritual and emotional nourishment. Knowing that we are woven into a common web by global and historical practices can be both restraining and energizing. Having the opportunity to talk with others about the relationship of food, environmental action and learning has been deeply moving for those of us involved in the project. Our ability to transform and survive depends on our collective ability to learn both the nature of our contemporary context and a way of working to change. We can make the likelihood of our survival with justice more likely by paying more attention to the ways in which learning is structured. We can make survival more likely for other living beings if we learn to live ourselves in profoundly transformed ways.

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