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From 'Woman and Plants' to International Law

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# Gender and Global Biodiversity

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**In partial fulfillment of the requirements**
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## Dedication and Acknowledgements

*In Memory of*

Maria Jesus (Chusa) Gines 1958-2002

Who worked tirelessly for rural women and men all over the world with respect to

biodiversity and agrobiodiversity during her time at IDRC.

Chusa, I did it!

AND

*In Memory of*

Addisoal Ryaria 1964-1998

Thank-you for showing me the "real"Africa.

I would also like the acknowledge the support of the following people: My supervisor, Dr. Lori Beaman, Professor Peter Beyer and Professor Alberto Florez-Malagón, my manager at work, Peter Besseau, for being very understanding, and family and friends who advised me and helped me carry on despite a year of adversity.

This is for you Sean, Luke and Ryan: May your world be beautiful and balanced.

Love Mom.

# Abstract

This thesis examines the channels of communication that facilitate the transfer of gendered ecological knowledge from 'women and plants' to international law. It investigates the source of women's ecological knowledge in Latin American rural villages and identifies characteristics of this knowledge by exploring ethnographic case studies. Rural Latin American women's knowledge of their ecosystems and the plants they use is essential not only to household survival, but also to the conservation of biodiversity.

Given the concern over the rapid decline in global biodiversity and the importance of the *Convention on Biological Diversity* as an international binding (to the parties that have ratified it) agreement that enjoys widespread support, this study examines the role of the bodies of the CBD in considering and documenting gendered ecological knowledge. It suggests that the role of civil society in the capture and transfer of women's ecological knowledge is key.

Despite policy that includes a comprehensive Gender Plan of Action, a profound understanding of the need for a gender focus when considering ecological knowledge is still lacking within the actions of the bodies and parties of the CBD. NGOs and TANs are well positioned to bring evidence from their work in rural villages in Latin America (and across the world) that will help bring the issues of gendered ecological knowledge closer to the policy table.

It is suggested here that giving rural women in Latin America and the world over a voice in the international arena is essential, not only for biodiversity conservation but also for poverty eradication.

## List of Abbreviations

| | |
|---|---|
| BIP | Biodiversity Indicators Partnership |
| CBD | Convention on Biological Diversity |
| COP | Conference of the Parties |
| ECOSOC | Economic and Social Council (of the United Nations) |
| ENGO | Environmental Non-Governmental Organization |
| FAO | Food and Agriculture Organization |
| IK | Indigenous Knowledge |
| ILO | International Labour Organization |
| IUCN | International Union for the Conservation of Nature |
| GBO2 | *Global Biodiversity Outlook 2* |
| GGCA | Global Gender and Climate Alliance |
| GPA | Gender Plan of Action (of the CBD) |
| NBSAP | National Biodiversity Strategy and Action Plans |
| NGO | Non-Governmental Organization |
| REDD | Reducing Emissions from Deforestation and Forest Degradation in Developing Countries |
| TAN | Transnational Advocacy Network |
| TEK | Traditional Ecological Knowledge |
| SBSTTA | Subsidiary Body on Scientific, Technical and Technological Advice |
| UNDRIP | United Nations Declaration on the Rights of Indigenous Peoples |
| UNEP | United Nations Environment Program |
| UNIFEM | United Nations Development Fund for Women |
| UNDP | United Nations Development Program |
| WEDO | Women's Environment and Development Organization |
| WGIP | Working Group on Indigenous Populations |

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# Preface

*"Before you rush in to help clean the straw out of your neighbour's eye, you should pause long enough to remove the dust from your own."* (A West African proverb)

The idea for this thesis was born almost 25 years ago in Southern Chad. I was working in Chad during the late 1980's; having studied international development and having eagerly joined the ranks of westerners wishing to help during the African famine of that time. I worked for Care Chad and I was asked to do an evaluation of a development aid project Care had been involved in. My task was to visit the village, assess the progress of the project, and talk to the villagers about their views and any problems they encountered.

The project included the construction of "irrigated perimeters" in several rural villages in Southern Chad. Irrigated perimeters were essentially concrete irrigation ditches built in various fields. The goal of the project was to provide subsistence farmers with the means to grow an extra crop during the dry season: water was pumped from the Chari river (which was, due to the drought, very sparse and almost nonexistent in some areas) to the ditches by means of pumps requiring gasoline. When I arrived to carry out the evaluation many of the irrigated perimeters were not functioning to full capacity or were at a standstill, as the farmers had no money for gasoline to fill the pumps and therefore could not use them. Many of the fields stood dry and bare.

After having interviewed the men involved in the project, I wanted to get a better sense of the rest of the village so I walked away from the irrigated perimeters. As I walked through the village I noticed some beautiful green garden plots and approached them to have a look. The gardens were located alongside the river, just at the top of a steep bank. Several women were hauling water from the river with buckets to water their gardens. I stood and

watched in amazement. The juxtaposition of the image of the irrigated perimeters, fields dry and bare, pumps broken and silent against the lush green plots of the women scrambling up and down the steep banks of the river, with persistence and determination, was stark and real and stays with me to this day. It raised many questions in my mind.

First of all what were the women growing? I was told vegetables and tobacco. The vegetables were for feeding their families and the tobacco and surplus vegetables were sold in the local market in order to raise a little income for family necessities (such as clothing and medicine).

Many more questions plagued my mind; questions to which I felt destined to return and provide myself and the Chadian village women some answers. Questions like:

~ Were the women of the village consulted during the planning of the irrigated perimeters project? Did they have a say in its installation?

~ Did anyone planning the project do a baseline study of the village to understand the various roles of men and women? Did the project promoters understand the cultivating activities of the women and its importance to family survival?

~ Did anyone compare the economics of growing grain crops by irrigation to that of supporting the vegetable and tobacco growing activities of the village women?

~ How did this project impact on the women's agricultural activities? Some of the women were "required" to help their husbands in the irrigated perimeters and therefore had less time to devote to their own garden plots.

~ What other plants did the women collect and use for their families sustenance?

These questions have, therefore, inspired my research and helped define further questions for this thesis. I hope that my work in the following pages serves to shed some light on these important issues - not only for the rural women of Chad, but for women, men, and their families around the world. I hope the words that follow aid in empowering their efforts to provide for their families and help us - westerners involved in international development efforts – fully understand the implications of our actions, however well-intended.

Debbie in Chad circa 1987 watching while a village woman roasts the shea nut, in preparation for making shea nut butter, used for cooking and in health care. The shea nut tree (karite) only grows in West Africa.

# INTRODUCTION

Globalization of the last twenty years has been characterized as an increasing interconnectedness of people and communities across the planet, facilitated by the flow of communications and the sharing of knowledge (Appadurai, 2000; Pieterse, 2004; Scholte, 2005). The global flow of communications and knowledge has been enhanced by the growth of civil society in the last 20 years; civil society organizations are currently omnipresent in the halls of international organizations and especially in the arena of international law (Trent, 2007). Juxtaposed against this increasingly open flow of knowledge and information is the world economic order which remains strongly tied to Western ideals of economic development, supported by rational/scientific epistemologies and discipline-based methodologies as the vanguard of contemporary socio-political and economic relations (Scholte, 2005).

The race to "manage" the world's resources has not proceeded untouched by these events. In the late 20$^{th}$ century it was apparent that the mismanagement of ecosystems, based on conventional economics, had "convert[ed] the world's life support systems into mere commodities, resource management science geared for the efficient utilization of resources as if they were limitless" (Berkes & Folke, 1998: 1). This realization gave the impetus for the world (governments and civil society) to come together during Rio Earth Summit of 1992 during which *the Convention on Biological Diversity* (CBD) was opened for signature.

The opening up of the world to "other epistemologies" has given rise to an increasing interest in indigenous knowledge (IK) and traditional ecological knowledge (TEK) (Berkes, 1993; Johnson, 1992; McGregor, 2004; Oguamanam, 2006; Pillay, 2008; Posey, 1996).

Despite this interest there has been a tendency by ethnographers to generalize IK and TEK without paying attention to gender. Differences in women's and men's knowledge of their ecosystems are important to consider when attempting to understand relations within a community and between the members of the community and their environment (Howard et al., 2003).

*The Convention on Biological Diversity* addresses issues of biodiversity related to the transfer and use of traditional ecological knowledge and Indigenous knowledge. Article 8(j) of the CBD clearly addresses the "need to respect, preserve, and maintain knowledge, innovations and practices of indigenous and local communities..." (CBD, 1993). The Preamble of the CBD also recognizes "the vital role that women play in the conservation and sustainable use of biological diversity," and "the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation" (CBD, 1993: Preamble, paragraph 13).

In May 2008 at the 9th Conference of the Parties of the CBD a "Gender Plan of Action" was initiated which has the following four strategic objectives:

> 1. To mainstream a gender perspective into the implementation of the Convention and the associated work of the Secretariat;
>
> 2. To promote gender equality in achieving the three objectives of the Convention on Biological Diversity and the 2010 Biodiversity Target;
>
> 3. To demonstrate the benefits of gender mainstreaming in biodiversity conservation, sustainable use and benefit sharing from the use of genetic resources; and
>
> 4. To increase the effectiveness of the work of the Secretariat of the Convention on Biological Diversity (UNEP & CBD, 2008).

Given that the CBD is legally binding (for the parties that have ratified it), I am particularly interested in how the global communication of gendered rural ecological

knowledge is shaping thinking within the governing body of the CBD or the Conference of Parties (COP). How is gendered knowledge in the context of biodiversity being taken into consideration by the COP, and what are the sources of this knowledge? What is the involvement of NGOs, who work most closely with rural communities, in transferring this knowledge? Essentially, what are the channels of communication related to gendered knowledge of biodiversity?

The objective of my research is: To explore channels of communication and the transfer of knowledge regarding ecosystems between rural (often indigenous) communities, civil society and international law with respect to issues of gender and biodiversity. The main question flowing from this objective is: How is gendered ecological knowledge being presented, received, used and/or manipulated and instituted by civil society and international law?

This objective leads to several hypotheses:

1. The process of "grassroots globalization"- defined by Appadurai (2000) as a global social movement in which civil society is increasingly involved in creating new forms of knowledge and social change that is independent of corporate and state organizations; further discussed in Chapter 1- is providing the impetus for civil society and international law to consider gendered ecological knowledge or women's traditional ecological knowledge;

2. Civil society plays a key role in disseminating this knowledge;

3. The evolution of international law and its increasing openness to the views of civil society is providing a framework for the collection and dissemination of gendered ecological knowledge globally.

My research is framed by theories on gender, grassroots globalization, global culture and knowledge flows, and the evolution of the principles of international law as expanded upon in Chapter 1.

***Methodology***

In order to understand how gendered ecological knowledge is being communicated globally, I have chosen to use three methods: case study analysis, document analysis and interviews. The three methods were necessary to fully appreciate the global channels of communication of gendered ecological knowledge, as expanded upon below.

*Case study analysis*

A review and analysis of case studies examining gendered ecological knowledge in Latin America was conducted. The case studies focused on the nature of rural women's ecological knowledge in Latin America. I have chosen to focus on Latin America as this vast geographic region contains a diversity of landscapes and cultures, a high level of biodiversity, and a variety of indigenous and non-indigenous populations.

Case studies were chosen by conducting a search for academic studies on gendered ecological knowledge. This search revealed a limited number of related academic case studies; therefore those chosen represent the majority of relevant studies on gendered ecological knowledge in Latin America. Two global or general studies on gendered ecological knowledge were also included. The objective of the analysis of the case studies was to identify common themes or issues with respect to gendered ecological knowledge and its communication. A body of empirical evidence gathered from these case studies facilitated the analysis of the various documents in Chapters 3 and 4, and the formation of questions for field research interviews in Chapter 5.

*Document Analysis*

I conducted content analysis of the primary documents of *the Convention on Biological Diversity* and major Canadian Non-Governmental Organizations (NGOs) to examine the policies and principles pertaining to biodiversity, traditional ecological knowledge, and gender. I have purposefully chosen Canadian NGOs that have a long history of involvement in Latin American rural communities.

The analysis of documents included the text of *the Convention on Biological Diversity;* decisions of the governing body of the CBD - the Conference of the Parties; initiatives of the Secretariat of the CBD, including *the Gender Plan of Action;* the *United Nations Declaration on the Rights of Indigenous Peoples*; as well as the gender plans and policies of various civil society organizations, and other related United Nations documents.

The documents were analyzed according to the main themes of my research: biodiversity, traditional ecological knowledge, and gender in order to determine how the "conversation" regarding gendered ecological knowledge is entertained at the global level, and how this relates to evidence produced in the analysis of the case studies. In this manner, it was possible to identify trends in the communication of gendered knowledge on the global stage and to identify any gaps in the channels of communication between rural Latin American communities, civil society and international law.

*Interviews of representatives of NGOs and of the CBD.*

In order to provide further insight into the transfer of knowledge and the channels of communication between rural Latin American communities and international law, I conducted semi-structured interviews with representatives of the same NGOs whose documents are analyzed, and of the CBD.

The interview questions were open-ended and drew on the results of the analysis of case studies and of the documents. The questions were designed to obtain participants' perspectives on the amount of time and effort that is put into understanding gendered ecological knowledge, as well as, who is communicating to whom regarding gendered ecological knowledge, and gender issues in general.

The questions asked of the NGOs can be found in Annex I. Originally all organizations were asked the same questions, but as several of the NGOs can be categorized as TANs (Transnational Advocacy Networks - to be discussed in Chapter 1), it was necessary to change some questions in order to elicit pertinent information concerning the TAN's role in international law and global communications in general. These additional questions can also be found in Annex I.

The combination of the three methods described above has strengthened my analysis of the global communication of gendered ecological knowledge. The use of all three methods of analysis has provided a holistic view of the issues, enabling me to identify key aspects of women's ecological knowledge in Latin American rural communities; to clarify with civil society organizations their experience and views on such knowledge; and to ascertain if women's ecological knowledge is reflected in key documents that govern global biodiversity.

***Significance***

This research contributes to larger debates concerning globalization, as well as gendered knowledge and global communication flows in international law with respect to biodiversity. It explores the concept of gendered knowledge of biodiversity from multiple viewpoints, from the community level, and via NGOs, through to discussions in

international law. This research provides information to NGOs and government on how well gendered ecological knowledge is being incorporated into programs and policy.

***Organization***

In Chapter 1 the theoretical framework that supports my thinking and research will be presented. I will expand upon the theories of globalization and culture that see our world evolving into a mixing of cultures and philosophies, which is providing space (both physically and mentally) for alternatives to current global economic and social institutions. The discussion will continue by exploring how this expansion is reflected in international law, which is currently our method of governing ourselves on a global scale. Global society is increasingly concerned with the moral implications of global governance and the latest additions to international law, including the *Convention on Biological Diversity*, reflect that trend.

In Chapter 2, case studies on gendered ecological knowledge in Latin America are investigated. After a discussion on the concept of gender and gendered ecological knowledge, six case studies in various countries from Mexico to Bolivia, and two general/global case studies provide background data on current issues when contemplating gendered ecological knowledge. An analysis of the case studies summarizes the issues and lays the foundation for further analysis of CBD and NGO documents, and clarifies further the questions asked of NGOs and the CBD in the interview stage.

Chapter 3 begins by exploring the concept of biodiversity including its origins and definition, and its place in international law and globalization. This is followed by a summary of the main documents of the CBD pertaining to the concept of biodiversity. Next, the concepts of Indigenous knowledge or traditional ecological knowledge are defined. I then summarize the approach to IK or TEK by the CBD. Finally, I expand upon the concept

of gendered ecological knowledge by putting the section on biodiversity and TEK into the context of theories on gender explored earlier in chapter two; particular attention is paid to CBD documents and the new CBD gender plan.

Chapter 4 explores the role of civil society in the gathering of TEK and gender policy. This section provides the basis for the analysis of the interviews with various NGOs on the subject of gendered ecological knowledge. I explore the role of NGOs in the global arena, particularly related to the access to, and promotion of, the knowledge of the rural populations they work with. Then I briefly outline the approach to gender as indicated by policy documents found on various major NGO websites. I analyze how these documents compare with the documents of the CBD and how they address theories of gender and gendered ecological knowledge.

Chapter 5 presents a summary and analysis of the results of interviews conducted with NGOs and members of the CBD. I link the case study analysis and document analysis with the evidence provided by the interviews. The interviews provide added evidence to support case study findings and results provide a critical look at policy within international law.

The concluding chapter highlights the findings of my research. Discussion of the main concepts: biodiversity, traditional ecological knowledge and gender are reviewed and related to the theories of globalization and the evolution of international law.

The process of globalization and the positive aspects of this process can be witnessed in international treaties and conventions today. The CBD is a prime example in the way the Conference of the Parties of the CBD has opened its doors to the views and opinions of civil society. This expansion of ideas and space to discuss them in has included gender and gendered ecological knowledge in theory. In practice, however, interviews conducted with

NGOs and the CBD Secretariat have revealed some hurdles that must be overcome in order to effectively include the valuable contribution of both women and men's knowledge of biodiversity and agrobiodiversity in rural Latin American communities.

# Chapter 1: Theoretical Framework

## *1.1 Globalization: On Culture, Knowledge and Research*

Globalization is a term that was coined in the last twenty years of the 20$^{th}$ century to describe the increasing interconnectedness of world economies and cultures, facilitated by the flow of communications and the sharing of knowledge (Appadurai, 2000; Pieterse, 2004; Scholte, 2005). While there have certainly been global trends in existence before the 1980's, Scholte believes that the difference between the "condition of globality" and the current trend of globalization is "the rise of transplanetary and supraterritorial social connections" spawned by the revolution in the communications industry which has left "no one and no locale on earth completely untouched" (Scholte, 2005: 117-119).

The concept of globalization is debated from various viewpoints: some scholars view it as an extension of capitalism, neo-liberalism or even imperialism (Escobar, 2004; Shiva, 1989); others see globalization as a political/historical process linked to modernity (Robertson, 1992, cited in Dallmayr, 1999: 322), or as strictly an economic phenomenon (Krugman, 1996, Sachs, 1998, cited in Pieterse, 2004). Pieterse, on the other hand, argues that one needs to be aware of the multitude of processes that make up globalization (2004: 14). One cannot isolate one facet of globalization, be it social, economic, political or cultural, but must realize that these dimensions are "each prisms through which globalization takes shape and is experienced and mapped differently, yet they all mingle and interpenetrate as well" (Ibid: 14).

Appadurai (1996) expands upon this concept by arguing that in order to understand the chaotic and fractal nature of global processes, we must consider the disjuncture and differences that appear. He identifies five interrelated and overlapping dimensions of what

he calls the "global cultural economy": "ethnoscapes," the movement of people across the globe, "technoscapes," the movement of technology, "financescapes," the movement of global capital, "mediascapes," the distribution of global media, and "ideoscapes," the dissemination of ideas and keywords by those in power (pp. 33-36). Appadurai feels that the conditions under and the speed at which all the above dimensions overlap and intersect are central in understanding the "politics of global culture" (Ibid: 37). The trend towards deterritorialization of the world's population has a hand in creating (or at least exacerbating) these cultural flows resulting in an increased sense of alienation from the state, a rise in religious fundamentalism, increasing violence (especially against women), ethnic conflict, and separatist movements (Ibid: 37-38).

He sees the manipulation of the imagination as key to maintaining global order; reality and "imagined identities" co-exist in a world where the lines between fantasy and reality become blurred. For example, consider the woman from the Philippines who travels half way around the world to Canada to work as a nanny or housekeeper: she leaves her family behind in another reality and works and lives in a world that at the same time might intrigue and invite her to imagine another identity, but also isolates her from her family, culture and perhaps herself. The lines between fantasy and reality are blurred but amongst the confusion, the constant power of state draws a line in the sand: politically she is still an "alien."

In his work on "disjuncture and difference" Appadurai maintains that the power of the state is still very much intact, and along with its allies in the media and intelligentsia, maintains order by a manipulation of the imagination (Ibid: 31, 35). His viewpoint seems to change somewhat in a later work (2000) when he postulates that "grassroots globalization" has emerged which is creating "forms of knowledge transfer and social mobilization that

proceed *independently* of the actions of corporate capital and the nation-state system" (p. 3) (my emphasis). So too does his take on imagination:

> The imagination is no longer a matter of individual genius, escapism form ordinary life, or just a dimension of aesthetics. It is a faculty that informs the daily lives of ordinary people in myriad ways: It allows people to consider migration, resist state violence, seek social redress, and design new forms of civic association and collaboration, often across national boundaries. On the one hand, it is in and through the imagination that modern citizens are disciplined and controlled—by states, markets, and other powerful interests. But it is also the faculty through which collective patterns of dissent and new designs for collective life emerge (2000: 6).

Appadurai believes that essential to this opening up of the global imagination is the role of NGOs and TANs - transnational advocacy networks - a new global subset of NGOs which he characterizes as "part movements, part networks, part organizations" and indicates that "there is a considerable progressive consensus that these [new social] forms are the crucibles and institutional instruments of most serious efforts to globalize from below" (p. 15).

In thinking and researching on global issues, Appadurai recommends that we find out how others see the world in their terms; we need to encourage and develop "a critical dialogue between world pictures" (Ibid: 8). In opening up the "research imagination" to internationalization he suggests that academics attempt to leave behind "their own ideas about what counts as new knowledge and what communities of judgement and accountability they might judge to be central in the pursuit of such knowledge" (p. 14). He continues by strongly advocating bolstering the "globalization from below" efforts of the TANs by collaborating in the producing and sharing of knowledge about globalization. He feels that:

> Such a pedagogy would create new forms of dialogue between academics, public intellectuals, activists, and policy makers in different societies. This vision of global collaborative teaching and learning about globalization may not resolve the great antimonies of power that characterize this world, but it might help to even the playing field (p.18).

Appadurai's thinking on globalization and the sharing of knowledge for the common good are ideas that have resonated with me since the mid 1980s; since those days spent in Chadian villages. He has adeptly outlined these theories in a way that is now possible for me to frame my research with. In essence he invites us to open our minds, consider the cultural/knowledge perspectives of others in the world and to step outside of our academic institutions to fully comprehend the global processes at play.

In the case of my research, this means searching out case studies that may illuminate ways in which women and men relate to their environments. What does biodiversity actually mean to a rural inhabitant of a developing country? How do they conceptualize the plants and animals they live with? How do they relate to international organizations and international conventions concerned with biodiversity? It also means communicating with NGOs and TANs that work in the area of gender and biodiversity and exploring their relationships with rural communities and global ideas on biodiversity (the CBD).

### *1.12 Globalization: Economic Inequalities and Mismanagement of Ecosystems*

Despite viewing globalization as a general trend towards human integration, Appadurai, Pieterse and Scholte do not overlook the inequalities that exist within the current global socio-economic paradigm. They do agree, on one level, with authors such as Escobar (1995, 2004) and Shiva (1989) who see globalization as an extension of exploitative capitalism including the continuing mismanagement of ecosystems.

Appadurai (2000) actually recommends the collaboration between academic researchers and NGOs or TANs as a way to "even the playing field" by first recognizing that these organizations often speak for the poor and marginalized in the international arena where global policies are made, but also that they often lack a grasp of the complexities of globalization putting them at a disadvantage in relation to the global power of capital (pp. 17-18). A similar type of collaboration has been detailed in the work of the following two academics.

By the late 20th century it became apparent that the mismanagement of ecosystems, based on conventional economics, had "convert[ed] the world's life support systems into mere commodities, resource management science geared for the efficient utilization of resources as if they were limitless" (Berkes & Folke, 1998: 1). Berkes and Folke hypothesize that the well-being and resilience of social and ecological systems are closely linked (p. 21), and that the best way to ensure sustainability for future generations is to learn from the "multiple epistemologies and cultural values" (p. 427) of communities effectively managing local social-ecological systems. They set out to prove their hypothesis by studying rural communities closely involved (or dependent on) their immediate ecological systems. Their ability to understand the views, visions and practices of the communities they studied enabled them to see the world in another light. In this context the role of indigenous or traditional ecological knowledge figures prominently.

### *1.13 Globalization: On Hybridization and Synergy*

Pieterse (2004) refers to the hybridization of global cultures in which he sees globalization as providing the basis for a paradigm shift requiring "a decolonization of imagination" (pp. 55-56). He sees this mixing of global cultures as an open ended, creative

process that moves towards human integration (Pieterse, 2000: 386). Within this process he explores large historical migrations, and the generated intercultural contact, as major sites of economic growth and cultural creativity (pp. 393-394). He asks us to reconsider the role of the nation state structure and concludes (as Appadurai does) that the nation state format is making place for a wider variety of governance arrangements (p. 397).

The theory of hybridization defines globalization as: 1.) Structurally, there is an increase in the ways society organizes itself from the local, regional and national to the micro-regional, macro-regional, international and transnational (Pieterse, 2000: 65-66); 2.) Politically and socially, hybridity is "subversive of essentialism and homogeneity, disruptive of static spatial and political categories of center and periphery, high and low, class and ethnos, and in recognizing multiple identities, widens the space for critical engagement" (Ibid: 75); and 3.) Economically, hybridization theory challenges us to consider the global human condition of inequality outside of the boundaries of nation, community, ethnicity or class (Ibid: 83).

Essentially Pieterse believes that globalization provides the basis for the increased awareness of cultural differences, which in turn stimulates dialogue around the universal convergence and divergence of cultures, laying the basis for the hybridization of cultures; the fusing of various elements in a fluid, ongoing process or "global mélange."

Within this fluid, malleable process we call globalization, our understanding of the categories such as modernization, development, culture and identity (and even globalization itself) are constantly being challenged (Beyer, 2007: 1-3). The current classifications that have hitherto given us a sense of meaning and order are now put into question (Ibid: 1-3). Questioning their meaning as the "reigning purities" (Ibid: 2) is to expose their own contingency and "to undo their self-evidence" (Ibid: 2). Beyer suggests that in order to

understand hybridization the reciprocal relationship between the "reigning purities" and the seemingly emerging hybrids ought to be analyzed from "the objective dimension of identity, the social dimension of power, and the temporal dimension of history" (Ibid: 24). Within this analysis, it is important, according to Beyer, to pay attention to three basic questions: 1.) How does one recognize this new hybrid social form; when does it in turn become a new pure form? 2.) What are the narratives – past, present and future – that describe the development of this hybrid? 3.) How have power relations changed as a result of this hybrid; what social conditions spawned its appearance? (Ibid: 24).

Beyer asks us to pay attention to "the distinction between the old and the new...[as]...what today is syncretism and hybridity is purity and self-evidence from another perspective or in another time, whether past or future" (Ibid: 25). This, Beyer says, is made explicit by the global condition we find ourselves in (Ibid: 25).

For my research it is important to take note of how the concepts or categories of biodiversity, Indigenous or traditional ecological knowledge and gender are defined and classified; what narratives, social forms and institutions they grew out of and are currently supported by; what political ideas they bolster or conversely deconstruct; and how do ideas emanating from these concepts influence current power relations on a global scale. In the following pages I will discuss further the nuances of these categories.

While I agree with the tenets of the theory of hybridization, I feel there is another manner to describe our evolving global processes, which may deepen our understanding of the nature of globalization. First, I take issue with the word "hybrid," which is defined as, "the offspring of <u>two</u> plants or animals of different species or varieties" (Canadian Oxford Dictionary, 2004: 745). My emphasis of "two" serves to illustrate the difficulty in using this word to describe a multifaceted cultural process.

According to the *Oxford Dictionary of Sociology* (2005), "hybridity has been re-appropriated by social and cultural critics. Its transformation into a positive condition of cultural change and creativity has attempted to challenge fixed or essentialist accounts of identity and culture" (p. 284). While this does help to clarify the current use of this term, I would like to suggest there is another term which may better describe the global processes we are witnessing.

I would like to use a personal example to illustrate my thoughts: As a herbalist I have been trained to use the whole plant (or herb) as the various chemical constituents of each plant balance each other in a perfect healing modality. Isolating individual elements of the plant can lead to toxicity as the balancing effect is nullified. The way that the different chemical constituents of the plant interact with each other to produce this overall medicinal effect is called "synergy." Synergy is defined as "the interaction or cooperation of two or more agents, organizations, etc., to produce *an effect than exceeds or enhances the sum of their individual effects*" (my emphasis) (*Canadian Oxford Dictionary*, 2004: 1577).

If hybridization theory impels us to look outside political, social and economic norms to describe global processes, then a theory of synergy would compel us to look at the end result of these processes to determine if multiple interactions on the global stage are producing new social, economic and political forms: if the sum of global interactions are essentially creating a more profound effect than expected. These are thoughts I wish to keep in mind as we explore the nexus between civil society, international law and gendered knowledge of biodiversity.

*1.2 International Law – The Philosophy of International Law – Origins and Evolution*

The above discussion on globalization is particularly relevant to the evolution of international law. Countries and cultures of the globe have come together in a synergistic manner to establish rules that will govern our global society and economy. The continuation of this collaboration in international law bears witness to the theories on hybridization of Pieterse, as well as Appadurai's claim that civil society is assisting "globalization from below," as international law has increasingly opened its doors to the views of NGOs and TANs. The UN system partners with civil society organizations, governments, regional organizations, academic communities, other programs and agencies within the UN system in an effort to create a dynamic network of partnerships worldwide. It is important to understand the changes in international law of the past century in order to establish how these theories impact our world. The discussion below will also serve to expand upon the theories that frame this thesis.

International law as we know it today has been in existence since the early 20$^{th}$ century, defined by the coming together of the nation-states of the world in an effort to build a more peaceful coexistence after the upheaval of World War I and World War II (Currie, 2001: 9-11). International law became a framework with which to govern the relations between states in order to promote peace and security in political, social and economic exchanges. This approach to international law grew out of the positivist theory of the 17$^{th}$ to the 19$^{th}$ centuries and focuses on the sovereignty of states and rules of conduct between states. Positivism "eschews the notion that law is pre-ordained or inherent in the natural order of things" (Ibid: 9).

Before the development of international law by and for the states of the world, it was conceived by philosophers, theologians and scholars of the sixteenth and seventeenth century mostly in Europe (Ibid: 5). During this time one of the most influential thinkers was Hugo Grotius (1583-1645), who many claim as the "father of international law" (Ibid: 6). The ideas of Grotius on the laws that govern international society are important in understanding the evolution of international law. Grotius based his theories of international law on three main concepts: "Right, Natural Right and Human Right" (Oguamanam, 2006; Stumph, 2006).

The concept of "Right" was defined by Grotius as "what is just, and just what is not unjust" (Stumph, 2006: 19). Establishing a link between Right and justice, or the absence of injustice, is remarkable, according to Sturmph, in that it attaches the meaning of Right to the existence of human beings, not just to an abstract concept such as Aristotle did when speaking of a "sense of justice" (Ibid: 19). Grotius further defines Right in a moral and legal sense. Here Grotius in not concerned with the procedural concepts of justice, as in the modern system of international law, but with a "rule of moral actions which obliges to do what is right (Ibid: 23). This sense of moral obligation in law "...goes beyond the modern positivism of the "Western" liberal idea of international law, which merely focuses on a procedure while refraining from asking for the substantive moral value of the contents on laws" (Ibid: 23).

The second concept, "Natural Right" is viewed by Grotius as "the legal order of human nature" (Ibid: 37). Grotius acknowledged our inherent links to nature but believed that although nature provides the circumstances in which Natural Right develops, it does not provide the basis upon which to organize the rational nature of human beings. Nature, according to Grotius, cannot be used as a justification of the subjugation of the weak by the

strong (Ibid: 36-38). Instead Natural Right principles are to be deduced from the rational nature of human society and comparing the customs of nations with each other (Ibid: 39).

By attributing Natural Right to reason, Grotius believes that Natural Right rules are accessible to everyone (Ibid: 40). As Stumph explains:

> Natural Right does not contain any doctrines which would require faith rather than reason for their recognition...They oblige man regardless of his position, whether he is ruler or subject. Therefore Natural Right, according to Grotius, constitutes a system of international relations which is universally applicable, comprising nations irrespective of their religious creed (p. 41).

The modern rule of *jus cogens*, being universally attributable and immutable, is similar to the principle of Natural Right that Grotius is alluding to (Ibid: 41). These fundamental laws are most notable in the *Universal Declaration on Human Rights*, linking this set of rules directly to the philosophy of Natural Right (Ibid: 69).

The third concept, Human Right, separates Grotius from early Christian tradition and thought (which characterized early European jurisprudence), in that he placed a great importance on the role of individuals in human society and their respective obligation as a moral agent (Ibid: 103-104). He defined two subcategories of Human Right: "National Right and "Right of Nations" (Ibid: 105).

National Right is concerned with domestic matters within a nation or state; a state being defined as "an association of free human beings that join together in order to enjoy legal security and the utility of sociability" (Ibid: 105). Here again the emphasis is placed on the free will of human beings to join together in some form of organization. He is not concerned with what form this takes but rather that it follows the natural process of organization of human activities within the context of reason and rationalization (Ibid: 158).

Right of Nations denotes international Human Right or the force provided by the act of will of all or several nations in a form of consensus of the legal subjects (Ibid: 106). Again Grotius defined legal subjects as peoples or individuals, not states as in modern public international law. "In this context, Grotius points out that hardly any rule of the Right of Nations is regarded as obligatory in every part of the world; most rules of the Right of Nations are only of regional relevance" (Ibid: 106). An modern day example of this would be the regional versions of the Universal Declaration, namely the Council of Europe and the adoption of the European Social Charter in 1961, the Inter-American Commission on Human Rights which adopted the American Convention on Human Rights in 1978, and the Organization of African Unity which adopted the African Charter on Human and Peoples' Rights in 1986 (Eide, 1998: 493-494).

The above discussion was meant to illuminate the fundamental tenets of the Grotian philosophy of law that underlie the evolution of international law. While today's international law is mostly defined by and for states, one can see remnants of Grotius thought around Right, Natural Right and Human Right, in the development and implementation of the *Universal Declaration on Human Rights,* the *United Nations Declaration on the Rights of Indigenous Peoples* and to some extent the *Convention on Biological Diversity* (especially regarding collective and moral responsibility, which will be discussed in Chapter 3).

The UN philosophy represented in the *United Nations Charter* reflects a shift away from the early 20th century positivist philosophy of international law (Currie, 2001: 9-16; Oguamanam, 2006: 63). The *United Nations Charter* and the *Universal Declaration on Human Rights* have put human rights and self-determination of people first, thus pulling away from a state centred approach and returning to some aspects of the original philosophy

of Grotius and the naturalist approach (Ibid: 63). The sheer magnitude of organizations and individuals involved in lobbying the bodies of international law points to a growing sense of concern regarding how we govern ourselves globally. This reflects the philosophy of Grotius pertaining to individual responsibility in international relations. What seems to be missing today, which was present in Grotian thought, is the attention to moral responsibility in global relations.

### *1.21 International Law in the Context of Global Justice*

In recent years debate has opened up around the effectiveness of international law in the context of global justice. There seems to be a concerted effort to revisit the theories of Grotius and the moral foundations of international law (Nussbaum, 2004; Buchanan, 2004; Sen, 1999; Rawls, 1999). Sen's ideas on freedom implore us to evaluate how social, political and legal institutions and processes enhance our abilities to expand "opportunities" that enhance the "capabilities" of human beings to "achieve outcomes that they value and have reason to value" (Sen, 1999: 291). Rawls takes this further in terms of international law in his book, *The Law of Peoples*, where he calls for the principles of justice to be detailed in a social contract between states of equal power and resources (Nussbaum, 2004: 3). Nussbaum finds Rawls theories wanting and proposes an approach based on "capabilities" (which she initially developed with Sen) – "an approach that suggests a set of basic human entitlements, similar to human rights, as a minimum of what justice requires for all" (Ibid: 4). She does not agree with Rawls in his belief that "co-operating with others on fair terms will be advantageous to all", instead she insists that,

> We have and use, ideas of co-operation that are much richer than this. These richer ideas already inhabit the pre-contractarian [as Rawl's approach is called] natural law tradition...With Grotius, we ought to think of ourselves as people who want to live with

> others. A central part of our own good, each and every one of us, is to produce, and live in, a world that is morally decent, a world in which all human beings have what they need to live a life with human dignity.

Nussbaum effectively argues that we as individuals, who make up the institutions of our global society need to rethink our ideas of social co-operation and bring them in line with the idea of "human development" (Ibid: 14-15). She proposes some practical guidelines towards collective action which she feels will enhance "participation in a just and morally decent world" (Ibid 18). In the context of international law, her focus is on accountability of institutions to the idea of mutual fellowship, mutual advantage, compassion, human dignity and the recognition that we live in an interdependent world (Ibid; 18).

Finally, the exhaustive work of Allen Buchanan (2004) must be mentioned for its "radical" approach to international law. He advocates a reform of international law to bring it more in line with its moral foundations in an effort to ease the suffering of much of the world's population. He argues that justice, which he understands as protection for basic human rights, must be the primary goal of the international legal system, and that human rights, rather than foreign policy, must guide international relations (pp. 116-117). In my view, Buchanan's approach is not that radical; it just makes common sense, and is of increasing importance for not only ensuring human rights but also for the survival of the human species.

Proponents of the moral philosophy of international law are concerned with the question "what is international law". In my opinion, their thinking is helping to lay the foundation for international law to evolve into institutions and organizations that, in reality, will help us move towards a global society where humankind can participate in a more equal and dignified sharing of global resources.

As shown by the discussion above, international law plays a key role in our global society, shaping assumptions of our world (Doubleday, 1993: 4). Most authors agree that recently, despite the fact that international law is state centered, there is an evolution towards considering subjects of international law other than states (Castellino, 2005; Currie, 2001; Doubleday, 1993; Gilbert, 2007; Malazer, 2005; Oguamanam, 2006; Posey, 2000; Supiot ,2007; Sweptson, 2005). The definition of international law is changing. We can no longer assume a positivist approach that will explicitly protect and respect a state's sovereignty. Although the theory still exists and states still sign/ratify international agreements, the significant involvement of civil society in international law today speaks not only of the power of individuals in society but also of the power of moral persuasion. International legal institutions such as those associated with the *Universal Declaration on Human Rights,* the *United Nations Declaration on the Rights of Indigenous Peoples* and the *Convention on Biological Diversity* by opening up their doors to the views and opinions of civil society, are supporting a fundamental change in the way the world is governed on the global stage.

Appadurai's theory on "grassroots globalization" is apparent here, as are the fundamentals of Pieterse's hybridization theory, most notably, "[international law] in recognizing multiple identities, widens the space for critical engagement." Keeping in mind Beyer's thoughts on the narrative and power relations that define our categorizations: it is interesting to consider the fact that current international law shows signs of returning to its naturalistic tendencies of the 15$^{th}$ and 16$^{th}$ centuries; what was old (as in an outdated purity) has become new (in a hybridized form for now) again. International law is in the process of hybridization and it will become evident that global power relations are changing as we further our discussions.

This evolution and the tendency towards a moral obligation in international law will be further investigated with respect to the concepts of biodiversity, and gendered ecological knowledge in Chapter three. In the next chapter I shall explore case studies on gendered ecological knowledge in Latin America in order to summarize the issues at hand and establish questions that will help in clarifying these issues.

# Chapter 2: Case Studies on Gender and Biodiversity

## *2.1 Introduction: Gender and Gendered Ecological Knowledge – Concepts Defined, Meanings Explored*

### *Gender*

Although the literature on gender is vast, I have chosen to focus on a few key authors who come from different disciplines and who deal with different aspects of gender. Beneria (2003), considered a leader in thought on gender development and economics (Sen, 2003), focuses on the different impacts of globalization and the global economic system on men and women. Shiva (1989) takes a radical approach and questions the very nature of our "religious adherence" to the tenets of modern day science, rationality, the motive of profit and its inherent aggressiveness. In the process, she certainly asks some deep questions (expanded on below) that, in my opinion, need to be considered. Zweifel (2001) considers the role of women in development and the environment, and Pfeiffer and Butz (2005) and Howard (2003) focus on gendered ecological knowledge. It must be noted that although there is a great deal of literature on gender and development, rather than frame this research with theories and debates on gender and development, I have chosen to focus this discussion on the specific issues at hand, namely the effects of globalization and international law on channels of communication of gendered ecological knowledge.

The concept of gender has undergone an evolution during the latter half of the 20th century. Gender was defined in the 1970s as "the socially constructed aspects of differences between men and women" (Scott & Marshall, 2005: 240). Gender is now more broadly defined to include the study of power relations between women and men and the social structures and institutions that support existing relations (Beneria, 2003; Pfeiffer & Butz,

2005; Scott &Marshall, 2005; Zweifel, 2001). This shift, according to Beneria, was due to the era of postmodernism of the 1980s and 1990s. During this time, there was exponential growth in feminist theory which questioned basic assumptions and categories of analysis and saw "a shift of emphasis from an analysis of causality...to that of meaning" (pp. 40-41).

Zweifel (2001) discusses how a gendered approach during the post-modern era has witnessed a shift away from seeing women as "victims of development and environmental degradation" or conversely, "women as a problem, responsible for the destruction of the environment," to "women as protectors of the environment and a key to development" and through an ecofeminist approach, "women in harmony with nature" a view that saw women's subordination as a direct result of western science and development practice and its inherent exploitation of the environment (p. 109).

From these initial perspectives we have now come to view "women as managers of natural resources" which acknowledges the important role that women play in the management of their ecosystems (2001: 110). Zweifel says this represents a shift away from large-scale development projects to smaller projects that collaborate with local people, and where women are active participants and decision makers (Ibid).

The current focus on gender, according to Zweifel, is a result of the thinking of feminist environmentalism and feminist political ecology (and I would add feminist economics such as described by Beneria) which emphasizes the links between culture and resource use; gender being seen as "one factor among others (class, caste, ethnicity, age and locality) in determining access to resources or interest in resource management" (Joekes et al., 1996, 6 cited on p. 110).

Shiva (1989) strongly argues for an approach that does away with categories of masculine and feminine associated with being male or female and asks us to consider a

"non-gendered approach." Shiva believes that characteristics typically associated with 'masculinity' or being male (violence and activity) and those typically associated with 'femininity' or being female (non-violence and passivity) are both incorrect and damaging to both genders (pp. 38-54). Shiva sees the philosophy of a non-gendered based approach as a way of reviving the "feminine principle...characterized by creativity, activity, productivity; diversity in form and aspect; connectedness and inter-relationship of all beings, including man; continuity between the human and the natural; and sanctity of life in nature" (p. 40), as key to help humanity recover from its current "distorted form of the victim and oppressor...by creating a new wholeness in both that transcends gender" (p. 52).

Shiva asks us to question the underlying assumptions that dictate the sanctity of science over all other forms of knowledge and the similar acceptance of global market and economic conditions. Having worked extensively with rural women in India, Shiva places great faith in rural women who lead the way in "ecological struggles based on values of conservation" (1989: 54). She describes the global market economy as largely destroying the life giving effort of rural women and the "masculine" scientific knowledge that supports it as having become a "threat to life itself" (1989: 224). Shiva is particularly critical of global economic calculations that leave out the production of sustenance so crucial to life. On this aspect Shiva is clear, "if production of life cannot be reckoned with in money terms, then it is economic models, and not women's work in producing sustenance and life, that must be sacrificed" (Ibid).

Beneria (2003), although speaking from an economist's point of view, similarly advocates a change in philosophy. Beneria points to the conviction of feminist economists that inherent self interest of market norms excludes a wide range of human behaviour, such as "altruism, empathy for others, love and compassion, the pursuit of art and beauty for their

own sake, reciprocity, and care" (p. 68). Although these selfless behaviours had previously been relegated to nonmarket activities (i.e. within the home), there is a recognition that these behaviours exist in individuals and institutions within the market system and therefore the theory of the market being inherently self-centered and rational is difficult to sustain (p. 68).

Beneria champions the gender focused approach in "its decentralized, multifaceted, and bottom-up effort to find alternative models" (p. 16). Rather than fall into the trap of using one dogma against another (i.e. capitalism vs. socialism), or accepting the free market version as the only answer to inequality, it is important to honestly scrutinize the various economic and social systems and institutions for the ability to improve "social conditions, human agency and the bargaining power of different groups" (p. 16).

Beneria advises us to look beyond the aggregate indices such as the Human Development Index or the related Gender Development Index which, although are indications of some progress, at the same time, they do not reflect a "dynamic sense of empowerment at the level of individuals, households, and communities" (p. 20).

Therefore the above authors are advocating a change in the way we view economic and social development. Both Shiva and Beneria are, in my opinion, saying very similar things albeit from different viewpoints. They ask us to view the world through a critical lense in order to support a change in thinking; a change that will support a more equitable distribution in the economy and a more compassionate and reciprocal society. One way of elucidating the inequalities in the global arena, Beneria advises, is to look a little deeper which means to go beyond the aggregate quantitative analysis and opt for a more detailed qualitative analysis which may help to illuminate the effects of the current economic system at the household and community level (Beneria, 2003: 51-52). The case studies below speak

to the need to opt for a more detailed qualitative analysis that Beneria recommends.

***Gendered Ecological Knowledge***

Gendered ecological knowledge is "ethnoecological knowledge" (Pfeiffer & Butz, 2005: 247) held by either "men or by women, but not by both" (Howard, 2003: 22), and which is "critical to household and community survival" (Pfeiffer & Butz: 247). It would make sense to see gendered plant knowledge as that which "is gendered to the extent that a gender division of labour exists with respect to use, management and conservation of plants" (Howard: 22). But Howard, Pfeiffer and Butz all caution against an oversimplification of this definition.

When considering gendered ecological knowledge, Pfeiffer and Butz (2005) advocate a "multifactorial analysis of cultural variation" including such variables as: social networks; gender-based cultural roles and spiritual taboos; differences in access to natural resources; and access to formal and external knowledge (p. 247). Howard (2003) acknowledges that: "The gendered nature of [ecological] knowledge...is not simply a function of the gender division of labour, but rather is embedded in cosmologies, beliefs and norms about appropriate behaviours" (p. 24). It is important to remember is like all knowledge, gendered ecological knowledge is not static, and changes depending on access to ecosystems, employment, education and stage of life (Pfeiffer & Butz, 2005: 248).

The case studies below will expand upon the notion of gendered ecological knowledge by giving real examples of how, through space and time, this knowledge exists and changes within rural Latin American communities. It must be noted that the case studies presented have assisted in the identification of some common trends among several rural communities in Latin America. Although I refer to "the gendered ecological knowledge of rural Latin American communities," this does not infer that all women (and men) of rural

Latin America hold such knowledge, nor does it ascribe ecological knowledge as a characteristic of all women.

### *2.2 Summary of Results*

Table 2.1 below summarizes the eight case studies selected. I conducted a search using key words or phrases such as gender and biodiversity, gendered ecological knowledge, women and plants, gendered indigenous knowledge, and indigenous knowledge of Latin American rural communities. The search for academic studies on gendered ecological knowledge in rural Latin American communities revealed very few; the same studies appeared under the various searches performed. I also searched under the author's names to reveal any new material and the results were the same. A similar search in Spanish also revealed few academic/ethnographic case studies. Therefore the most relevant and accessible academic/ethnographic case studies were the focus of this research. There is, however, a need for a broader consideration of research to build upon the academic studies presented below; policy oriented, and community based studies (in Spanish and English) would more systematically and comprehensively consider this issue.

The first six case studies appear in alphabetical order according to the name of the author. They are ethnographic accounts of rural populations in villages of Mexico, Ecuador, Peru, Bolivia, and Venezuela; some communities are Indigenous, some are not. The two general case studies (also in alphabetical order: Pfeiffer & Butz, 2005 and Zweifel, 2001) explore issues related to gendered ecological knowledge on a global scale.

These case studies help illuminate the realities faced by rural communities in Latin America with respect to gendered ecological knowledge. The reason for using ethnographic studies of this kind is to help understand the underlying socio-economic conditions of these

communities that affect the conservation and transfer of gendered knowledge relating to biodiversity. By comparing these case studies, a clear pattern emerges: similar socio-economic conditions of rural populations throughout Latin American countries indicate that ecological knowledge is increasingly relegated to women due to former civil strife and/or the out migration of men in search of work. Women's ability to maintain this knowledge not only depends on access to land, but also requires the support of social, economic, and cultural institutions. I will expand upon these similarities in the analysis below. What is important to state here is that my research, having brought these case studies into "conversation" with each other, clearly indicates that there are trends that appear that need to be evaluated when considering of the importance of a gender focus in the collection and transfer of ecological knowledge.

Table 2.1, therefore, summarizes the main findings of the authors by the cross-cutting themes of this thesis, namely biodiversity, rural gendered ecological knowledge, and globalization. Although these studies are labelled as "gender studies," the main focus is the knowledge of women as the main custodians of biodiversity knowledge in the current socio-economic climate. I have, therefore, compared the findings with respect to women's ecological knowledge, their socio-economic status, and gender relations that may have changed as a result, as well as research pertaining to ethnographic accounts of ecological knowledge.

Following Table 2.1 is a complete review of the case studies, detailing the authors' findings and conclusions. These case studies also provided background necessary to further define the questions that were asked during interviews of the NGOs and the CBD.

On Following Page:

**Table 2.1 Summary of Case Study Findings Related to Main Themes**

| Case Study: Author, Title, Location/Ethnic Group | Biodiversity related activities | Status of Women's Ecological Knowledge | Socio-Economic Status related to Globalization | Issues Identified (by authors) with Communication of Women's Ecological Knowledge |
|---|---|---|---|---|
| Rimarachin Cabrera, Zapata Martelo, Vazquez Garcia – *Gender, rural households, and biodiversity in native Mexico*<br><br>San Pablo Arriba, Mexico/Otomi | - Cultivation of a wide variety of maize crops; multi-cropping system.<br><br>- Gathering of plants for food and medicine from forest and fields | - Crucial to creation and transmission of agrobiodiversity and biodiversity.<br><br>- Laboratory tests confirmed maize varieties chosen by Otomi village women were the most resistant to local weather, the most nutritious, and produced the highest yields. | - Most men migrate in search of paid work; women have become *de facto* heads of households.<br><br>- Women's burden of agricultural work greatly increased.<br><br>- Women play a fundamental role in food systems by cultivating, buying and selling food. | - Women's knowledge of biodiversity is often overlooked or ignored by agronomic sciences. |
| Greenberg – *Women in the Garden and Kitchen: The Role of Cuisine in the Conservation of Traditional House Lot Crops among Yucatec Mayan Immigrants*<br><br>Yucatan, Mexico/Maya | - Conserve large variety of local plants by transferring them to house lot gardens, when farming land becomes unavailable.<br><br>- 140 plant varieties found in 33 house lots; most are used for food/ medicine. | - Yucatec women play an important role as managers of plant genetic resources through their activities in the house lot.<br><br>- Efforts by women to conserve their ethnicity through Yucatec cuisine helps to conserve traditional crop varieties. | - Most village men have lost access to land for cultivation; they migrate in search of work.<br><br>- Women remain in the community and continue their responsibilities related to biodiversity as they manage a house lot.<br><br>- House lots are sources of food and medicine for families. | - Home gardens in this study represent sites for conservation and dispersal of genetic material.<br><br>- Home gardens are often overlooked by conservation biologists who tend to emphasize field crop agriculture and the roles of male farmers in the maintenance of traditional crop varieties.<br><br>- Maintenance of ecological knowledge tied to cultural diversity and ethnic cuisine. |

| **Case Study: Author, Title, Location/Ethnic Group** | **Biodiversity related activities** | **Status of Women's Ecological Knowledge** | **Socio-Economic Status related to Globalization** | **Issues Identified (by authors) with Communication of Women's Ecological Knowledge** |
|---|---|---|---|---|
| Hoffman – *Arawakan Women and the Erosion of Traditional Food Production in Amazonas Venezuela*<br><br>Guainia-Negro region of the Venezuelan Amazon/Arawakan | - Cultivation of over 70 varieties of bitter manioc.<br><br>- Gathering (wild crafting) of a large variety of medicinal plants. | - Women in Arawakan society are the principal guardians of plant diversity both in home gardens and in *conucos* (manioc swidden fields).<br><br>- Women's knowledge of crop cultivars, essential to agrodiversity and to household survival for centuries, now changing as a result of rural to urban shift.<br><br>- Arawakan women, being the traditional keepers of this knowledge, have seen their role in the household eroded and their status negatively affected. | - Rural-urban shift has led to decline in manioc cultivation.<br><br>- A continuing loss of agrobiodiversity in Arawakan swidden agriculture jeopardizes the livelihoods of the Arawakans living in the studied area. | - Education system needs to be respectful of both new and old knowledge by supporting the preservation of agricultural biodiversity and reinforcing the status of women cultivators as critical contributors to community life. |
| Kothari – *The Invisible Queen in the Plant Kingdom: Gender Perspectives in Medical Ethnobotany*<br><br>La Esperanza, Ecuador/peasant farmer. | - Cultivation, gathering and use of large variety of medicinal plants. | - Women are the ones responsible for health care provision within the families studied.<br><br>- Women's knowledge of medicinal plants was found to be greater than men's: A total of 97 medicinal plants were reported: females reported 87.6% and males 58.8%. | - Women's socio-economic status in their communities is adversely affected when their ecological knowledge is not taken into account by "global researchers."<br><br>- Ethnobiologists have tended to emphasize women's knowledge in the reproductive realm. | - Women and men's knowledge of medicinal plants must not just be analyzed according to the sexual division of labour.<br><br>- Women's therapeutic knowledge and roles have remained relatively unexplored by most ethnobiologists. |

| **Case Study: Author, Title, Location/Ethnic Group** | **Biodiversity related activities** | **Status of Women's Ecological Knowledge** | **Socio-Economic Status related to Globalization** | **Issues Identified (by authors) with Communication of Women's Ecological Knowledge** |
|---|---|---|---|---|
| Paulson – *Gendered practices and landscapes in the Andes: The shape of asymmetrical exchanges*<br><br>Carrasco Highlands-Andes of Bolivia/Rural population in area | - Pasturing of livestock on degraded slopes.<br><br>- Gathering of fuel wood, fruits, roots and medicinal and culinary herbs. | - Women's knowledge of their ecosystems and its management are in conflict with methods of agricultural modernization.<br><br>- Women's knowledge viewed as less important compared to the knowledge of men who cultivate major crops. | - Research and technical support (by NGOs mostly) has focused on agricultural production and main crops cultivated by men.<br><br>- Women's activities that contribute to household survival largely overlooked by organizations involved in rural development. | - Environmental degradation needs to be examined in the wider context of ecological zones, global markets and social and political processes.<br><br>- Women's ecological knowledge needs to be valued for its contribution to household survival. |
| Vazquez-Garcia – *Gender, ethnicity, and economic status in plant management: Uncultivated edible plants among the Nahuas and Popolucas of Veracruz, Mexico*<br><br>Veracruz, Mexico/Nahuas and Popolucas | - Cultivation of a wide variety of plants in home gardens.<br><br>- Gathering of plants from forests and fields for food and medicinal purposes. | - Women in both communities play an important role in plant management, especially in home gardening.<br><br>- Women are the main keepers of this knowledge as most men migrate in search of work.<br><br>- Status of knowledge and ability to maintain biodiversity is affected by access to land. | - Rural to urban shift –men migrating in search of paid labour.<br><br>- Cultivation in home gardens contributes to family welfare by providing food sources, income and as a site of the conservation of biodiversity.<br><br>- Scarcity of land and limited use of home gardens negatively affects family nutrition. | - Women's ability to share knowledge is affected by different gender ideology. When their movement is restricted, they do not attend local markets etc.<br><br>- More research is needed to support Indigenous women's knowledge that contributes to family nutrition and well-being. |

| **Case Study: Author, Title, Location/Ethnic Group** | **Biodiversity related activities** | **Status of Women's Ecological Knowledge** | **Socio-Economic Status related to Globalization** | **Issues Identified (by authors) with Communication of Women's Ecological Knowledge** |
|---|---|---|---|---|
| Pfeiffer, Butz – *Assessing Cultural and Ecological Variation In Ethnobiological Research*<br><br>General/global study | - Review of over 220 ethnobiological studies to account for cultural and gender variations in TEK. | - Less than 5% of the research articles examined gender-based variation in ethnobiological knowledge and practice<br><br>- Gendered traditional ecological knowledge is not static. May change over time due to access to certain types of knowledge at different stages in life, employment, education, age, class, social position. | - Macro-analysis based on global trends can lead to misleading results by failing to take into consideration the gender-differentiated roles within gendered ecological knowledge. | - "Cultural blind spots" are created by the male biased reporting of ethnobiological scholars.<br><br>- Careful design of research studies is necessary to avoid gender biases.<br><br>- Recommend following research designs that are participatory (include women), more detailed in their approach (micro-analysis) and longer term. |
| Zweifel – *The Gendered Nature of Biodiversity Conservation*<br><br>General/global study | - Analyzes "gendered roles skills and knowledge in the fields of conservation, development, and management of genetic resources in Africa, Asia, and Latin America"<br><br>- Discusses research on gender and biodiversity in the context of international politics and the need to take into account women's empowerment in developing policies for the sustainable use of biodiversity. | - Women's role in biodiversity conservation essential as they are most often the providers of food and medicine for daily family use and manage seeds (keepers of plant genetic material).<br><br>- Women were respected for these roles in traditional societies.<br><br>- Local knowledge systems are eroded by an emphasis on the market economy and agricultural modernization. | - Many international development programs associated with plant breeding and environmental issues have tended to ignore women's knowledge of their ecosystems and their creative roles therein.<br><br>- Women's local knowledge in many rural areas has increased and become more important as men migrate to work in cash crop production and/or local wage labour. | - Women's role in conserving biodiversity is key to sustainable development and women's empowerment.<br><br>- Respect and recognition of local knowledge as part of a global knowledge system that includes Western scientific knowledge needs to be established. Knowledge systems need to be seen as complementary, not conflicting.<br><br>- Include women in research, decision making and implementation of programs. |

*2.3 Detailed Review of Case Studies*

**Case Study 1:** *Gender, rural households, and biodiversity in native Mexico* (Rimarachin Cabrera, Zapata Martelo, Vazquez Garcia 2001)

**Location/Ethnic Group:** San Pedro Arriba, Mexico/Otomi

**Nature of Study:** This study analyzes native women's accumulated knowledge of maize varieties in terms of laboratory results testing the same varieties of maize. It also discusses how rural women's knowledge of plant varieties contributes to the maintenance of biodiversity.

**Findings:** Women play a fundamental role in food systems by cultivating, buying and selling food and "by producing for household survival, women are also maintaining biodiversity" (p. 86). Women also hold a crucial role in creation and transmission of agricultural knowledge (p. 86).

Most men of the village currently migrate in search of work and are away for most of the year so women have become "*de facto*" heads of households. Men participate more in the preparation of land (ploughing with a mule) – 72% compared to women's participation of 28% (p. 87). Women and men participate equally in planting but women are almost exclusively responsible for other tasks: seed selection – 80%; weeding and hilling – 86%; harvesting – 77%; post-harvest tasks – 100%; and marketing – 93% (p. 87).

Women spend large amounts of time in agricultural production and gathering produce from the forest; their contribution to the household survival is crucial (p. 88) and their knowledge of nature as a result of these various tasks is excellent (p. 89).

Corn in the area is cultivated using multi-cropping system including beans, squash and barley creating a great deal of diversity (p. 89).

**Conclusions:** Otomi women in the area studied have helped their families survive by cultivating a wide variety of vegetables and corn crops and by gathering food and medicine from the surrounding forests (p. 92). Women's knowledge of biodiversity is often overlooked or ignored by agronomic sciences with negative results. It is therefore paramount to "rescue, support, and reinforce cultural and productive practices that may offer solutions to the problems of rural survival of today and tomorrow" (p. 92).

Native Otomi women in this study use, conserve and transform a great variety of corn seeds thus playing a very important role in the maintenance of biodiversity. Their knowledge is borne out by laboratory tests that confirmed the varieties of corn that women preferred are the most resistant to the local weather, the most nutritious ones, and have the highest tortilla yields (p.92).

**Case Study 2:** *Women in the Garden and Kitchen: The Role of Cuisine in the Conservation of Traditional House Lot Crops among Yucatec Mayan Immigrants* (Greenberg 2003)
**Location/Ethnic Group:** Yucatan, Mexico/Maya
**Nature of Study:** Analyzes the relationship among Mayan women, cuisine, ethnicity and plant genetic resource conservation by examining the house lot gardens, cooking and gardening practices of 33 Yucatec Mayan immigrant women and their families. These families having migrated from Yucatan to Quintan Roo to supply the labour force needed for the four million tourists a year who visit the Cancun area.
**Findings:** Most migrant men have lost access to land for *milpa* (field) cultivation and are away during the day working or seeking work (p. 56). Women immigrants experience more continuity in their traditional responsibilities related to biodiversity than do men as they still have access to a house lot (p. 56).

Women make efforts to conserve their ethnicity through Yucatec cuisine which in turn helps to conserve traditional crop varieties (pp. 58-59). In most households studied women were the primary managers of the garden, the kitchen and the household finances (p. 56). A total of 140 plant species were identified in the 33 house lots studied which represented an average of 18 species per lot (p. 56) of which most were used for food or medicinal purposes (56-57).

**Conclusions:** Yucatec women play an important role as managers of plant genetic resources through their activities in the house lot. Most women continue to carry out these activities even if family members and they themselves are working outside the home (p. 63). Home gardens in this study represent sites for conservation and dispersal of genetic material and represent an area of research that is often overlooked by many conservation biologists who tend to emphasize field crop agriculture and the roles of male farmers in the maintenance of traditional crop varieties (p. 62).

The author recommends that, "Policy and programmes directed at conservation of plant genetic resources will certainly be more successful if combined with efforts to promote cultural diversity generally by encouraging ethnically significant practices, including those that sustain traditional cuisine, medicine, handicrafts and religious practices" (p. 64).

**Case Study 3:** *Arawakan Women and the Erosion of Traditional Food Production in Amazonas Venezuela* (Hoffman 2003)

**Location/Ethnic Group:** Guainia-Negro region of the Venezuelan Amazon/Arawakan

**Nature of Study:** Examines range of response of indigenous society to changing economic, political and cultural context in order to understand the erosion of plant genetic diversity in the late 20$^{th}$ century. Analyzes the role of women in Arawakan society who are the principal guardians of plant diversity both in homegardens and in *conucos* (manioc swidden fields).

**Findings:** Arawakan women traditionally have cultivated over 70 varieties of bitter manioc, making high diversity of crop cultivars a hallmark of the entire north-west Amazon (p. 262). Women supervise the *conucos* and homegardens and have a detailed knowledge of cultivation and crops (p. 260). Arawakan women's knowledge of agriculture and biodiversity was for centuries essential to household food security has now become less important as the women now go to school, work in jobs and move to larger population centres (p. 258).

This has led to a change in gender relations and has jeopardized food security (p. 258-9) as the younger generation, being more ensconced in western culture, is abandoning traditional manioc cultivation. This practice is reinforced by deliberate state welfare policies and education that teaches the young that their parents practice an antiquated and obsolete form of cultivation (p. 268). The result is a trend towards younger women being more dependent on parents or extended families, a decline in nuclear families with fewer marriages and less prosperity in the extended family (p. 268).

**Conclusions:** A continuing loss of agrobiodiversity in Arawakan swidden agriculture jeopardizes the livelihoods of the Arawakans living in the studied area (p. 269). Arawakan women, being the traditional keepers of this knowledge, have seen their role in the household eroded and their status has been negatively affected (p. 269).

A serious re-examination of the education system is recommended to create a type of integrated education respectful of both new and old knowledge, providing skills needed for today's modern world while supporting the preservation of agricultural biodiversity and reinforcing the status of women cultivators as critical contributors to economic, subsistence and family life (p. 269).

**Case Study Author 4:** *The Invisible Queen in the Plant Kingdom: Gender Perspectives in Medical Ethnobotany* (Kothari 2003)

**Location/Ethnic Group:** La Esperanza, Ecuador/peasant farmers (*campesinos*)

**Nature of Study:** Examines through participatory research (documented by the farmers themselves), aspects related to women's participation in, and knowledge of, the cultivation and use of medicinal plants. Takes a critical look at ethnobotanical literature on ethnomedicine and the ways in which it does (or does not) address gender.

**Findings:** Women are the main keepers of medicinal plant knowledge and the responsibility for health care provision within the families studied (p. 152). The difference between women's and men's documented knowledge is not just related to the sexual division of labour, as is often characterized by ethnobotanists (p.156).

Women's general knowledge of medicinal plants was found to be greater than men's: A total of 97 medicinal plants were reported, of which female respondents reported 85 (87.6%) and males 57 (58.8%) (p. 154).

**Conclusions:** "Ethnobiologists specializing in medicinal plants have given disproportionate attention to women's knowledge in the reproductive domain, which reinforces the idea that women's ethnomedical knowledge is directly related to the fact that they are physically different from men" (p. 155).

Women's therapeutic knowledge and roles have remained relatively unexplored by most ethnobiologists because: "1.) there is a preoccupation with 'expert' healers (such as Shamans) and less so with the informal/popular domain; 2.) a disproportionately high interest in exotic practices and ritualistic healing; 3.) women's therapeutic activities may be less visible to the outsider; 4.) androcentrism or the male bias in epistemological inquiry and ethnographic accounts results in a tendency to ignore women's point of view" (pp. 159-160)

Therefore the author recommends exploring gender not just as the reporting of male or female but rather as a "complex of shifting ideologies and identities" (p. 160). Essentially in order to take into account women's therapeutic knowledge and roles it is necessary to explore the distribution such knowledge and roles at the centre and periphery of most societies (p. 161). Participatory research methods, such as the ones used in this study, can help reveal these nuances.

**Case Study 5:** *Gendered practices and landscapes in the Andes: The shape of asymmetrical exchanges* (Paulson 2003)

**Location/Ethnic Group:** Carrasco Highlands- Andes of Bolivia/Rural population in area

**Nature of Study:** Using participative and gender-sensitive research methods this study looks at how rural women manage livestock and fuel wood collection on steep Andean slopes that are in a process of degradation. It relates the women's efforts to manage their environment to local practices and relations of difference, as well as, global processes surrounding agricultural modernization. The study focuses on the interaction of political ecology and social inequality in the analysis of environmental degradation.

**Findings:** In terms of organization of labour and activities, spaces and knowledge are nominally masculine or feminine but in practice women and men often collaborate in these domains (p. 246). In other words agricultural tasks and animal husbandry were not uniquely a man's or woman's task but different activities at different times were shared. In general, the production of main crops is the primary focus of men in the region; women focus on animal husbandry and cultivating diverse local plant varieties for family consumption and exchange (p. 246).

Research and technical support (by NGOs mostly) has focused on agricultural production and livestock raising; little research has dealt with the management of hillsides and other

non-cultivated areas-where women and children (not men) invest large amounts of time and energy pasturing livestock, gathering fuel wood and collecting fruits, roots and medicinal and culinary herbs (p. 247). Agricultural modernization policies of the late 20th century extended services directly to male farmers which reconfigured gender relations – commercial production was expanded in ways that compromised social and environmental elements (p. 248). For example: "...expansion of the agricultural frontier, impelling farmers to open larger fields on increasingly steep slopes, which in turn displaced and degraded the communal spaces that women and poorer families had been using for multiple purposes.

Consequent overgrazing and intensified fuel wood collection in reduced green areas has contributed to deforestation and erosion, leading some observers...to conclude that women and land-poor peasants are the main perpetrators of ecological destruction" (pp. 248-9).

Attempts to bring women into the fold of modern agricultural production by providing them with training, seeds, and fertilizers (as was given to the men) resulted in a few families consolidating land and other resources to the detriment of land-poor families. This created an increasingly inequitable distribution of natural, financial and technical resources within the community and led those who were marginalized to further degrade the surrounding resources (p. 249).

**Conclusions:** Very low prices (regionally and globally) for agricultural products and low wages results in men and women being vulnerable to environmental degradation and weakens community solidarity and tradition and nutritional security (p. 250).

It is important to look at the problem of environmental degradation in the wider context of ecological zones, global markets and social and political processes (p. 251). There is a need to examine the forms of knowledge and value that motivate and inform the social and ecological dimensions of practice and exchange, not just those that emanate from

western ideas of agricultural modernization which prioritizes commercial production over the rest of life (pp. 251-252).

**Case Study 6:** *Gender, ethnicity, and economic status in plant management: Uncultivated edible plants among the Nahuas and Popolucas of Veracruz, Mexico* (Vazquez-Garcia 2008)

**Location/Ethnic Group:** Veracruz, Mexico/Nahuas and Popolucas

**Nature of Study:** Analyzes the ways in which gender, ethnicity, and economic status determine women's roles in uncultivated plant management in two indigenous communities in Mexico. Examines the socio-economic conditions of the area which have disrupted agrarian activities and contributed to the day-to-day displacement of populations and analyzes how these disruptions have helped redefine gender roles and created new forms of social organization.

**Findings:** Uncultivated plants have economic value and are essential for the maintenance of biodiversity (p. 65). The study area, the Sierra de Santa Marta is well-known for its rich biodiversity but despite various government initiatives to protect it since 1980, about 66,000 ha of rainforest has been lost due to deliberate government policy to expand agricultural production, and especially cattle raising, into rainforest areas (pp. 67-8).

Subsequently corn production declined by half between 1970 and 1989 and men started to take low paying jobs in near-by cities and in the 1990s began to migrate in search of work to agribusiness sites and sweatshops of northern Mexico (p. 68). The SSM is now considered a zone of extreme poverty since the Salinas administration (1988-1994) (p. 68).

Different gender roles in the two communities influence plant management activities: the Popoluca gender ideology is stricter in terms of what women are allowed to do outside the home than the Nahuas (pp. 69-73). Nahua women in general cultivated, harvested, used for domestic use and sold in the market more plants than their Popoluca counterparts.

**Conclusions:** Women in both communities play an important role in plant management, especially in home gardening (p. 74). The management of plants in home gardens should be viewed as part of the larger economy that contributes to family welfare by providing food sources, income and as a site of the conservation of biodiversity (p. 74).

When land is scarce and the use of home gardens limited, this also affects family nutrition, women's status and their ability to manage plants and conserve biodiversity (p. 74). Expansion of market economy and the subsequent loss of uncultivated edible plants represent a "loss of food sovereignty at the community level" (p. 75).

The author therefore recommends that: "More research is needed in order to give them [Indigenous women] voice and empower them...to ensure that the plant resources they have used for millennia to feed themselves are conserved for their own benefit and that of humankind" (p. 75).

**Case Study 7:** *Assessing Cultural and Ecological Variation In Ethnobiological Research: The Importance of Gender* (Pfeiffer; Butz 2005)

**Location/Ethnic Group:** General global study

**Nature of Study:** Reviews over 220 ethnobiological studies in order to determine if, indeed (as hypothesized), ethnobiological research does not take into account cultural and gender variations in traditional ecological knowledge and practice and explores the gender-imbalanced stereotypes which typify field research. Analyzes the realities that define gender-based variation in ecosystem exposure and how these variations impact upon traditional ecological knowledge worldwide. Discusses how these variations "...contribute to gender differences in wild food harvesting, biodiversity and agrobiodiversity maintenance, natural resource management, and the transmission and conservation of sacred and secular customs" (p. 240).

**Findings:** In a review of over 220 articles in the *Journal of Ethnobiology* and *Economic Botany* between 1981 and 2004, less than 5% of the research articles examined gender-based (defined by the authors as "...those studies explicitly including both female and male respondents, accompanied by some form of qualitative or quantitative analysis differentiating the two genders" p. 265) variation in ethnobiological knowledge and practice (p. 241).

Studies that do not distinguish gender practices but tend to a "coarse or macro-analysis" often produce "...misleading results by failing to connect gender-differentiated roles with distinct types and levels of agroecological knowledge" (p. 245). "Cultural blind spots" are created by the male biased reporting of ethnobiological scholars. Shamans, in a great deal of ethnobiological literature, are thought of as predominantly male but this bias has neglected to report on the fact "...both genders serve as spiritual guides and herbalists..." in many cultures around the world and in doing so has led to an inaccurate portrayal of knowledge systems (p. 246).

Gendered traditional ecological knowledge is not static. It changes over time due to many factors including, access to certain types of knowledge at different stages in life, employment, education, as well as age, class, social position (p. 248). Men and women often have species-specific knowledge of biodiversity. This occurs for a number of reasons including: "differential access to natural resources, geographic origin, different harvesting strategies, cultural roles, and gender-differentiated knowledge transmission" (p. 248). "Women and men's ethnobotanical medicinal and ritual knowledge often overlaps, but also frequently diverges" (p. 250). Important knowledge on plant parts can often be gender specific leading to highly specialized, gender-differentiated knowledge (pp. 252-253).

It is important to recognize the spatial variation in gendered ethnobiological knowledge: women and men are exposed to different sites within their ecosystems as cultural norms and degrees of access define their roles and responsibilities (p. 253). Whether it be in agriculture, the maintenance of home gardens or foraging it is important to distinguish data "...both by crop type and by activity phase" (Ibid).

Another important aspect of gender-based variation in ethnobiological knowledge is a temporal one. Women and men are often responsible for different phases of the same activity (p. 255). Sometimes the knowledge of a certain phase is very specific to one gender or another: be it seeding, planting, weeding and harvesting, processing or seasonal specific activities (pp. 255-256).

Finally the authors point out that spatial and temporal distinctions often lead to a "gender –based variation in species encounter rates" (p. 256). The more frequent the contact with the resource, the more knowledge is generated (Ibid). Since in many societies women spend more time in a restricted area (their mobility being limited by cultural norms), women tend to have a more profound knowledge of the plants they work with as they encounter them more often. Whereas men may encounter a wider range of plants, they spend less time in each ecozone leading to "...lower overall familiarity with the bioresources encountered..." (pp. 256-257).

**Conclusions:** Careful design of research studies is very important to avoid gender biases: Authors outline several areas of concern including:

1. Composition of research team: "Gender-imbalanced teams are susceptible to cultural restrictions in data gathering, leading to incomplete and / or inaccurate conclusions" (p. 257).

2. Choice of research topic: "Research topics and methods can be gender-biased if the researcher(s) are unaware of gender differences in a give knowledge system..." (p. 258).

3. The choice of informant and hypothesis formulation: "...it is crucial to recognize when gender-sensitive issues can exist within otherwise apparently gender-neutral contexts, in order to ask the best questions of the appropriate people" (p. 259).

4. Including women in the sampling design can be challenging but is necessary for complete data gathering techniques: Due to work load and cultural taboos that prevent women from interacting with outsiders, as well as translation issues and time limitations it is challenging to include women in research projects but the "extra effort" is necessary in order to avoid gender-biased results (p. 260-261).

5. Data analysis: Microanalysis of data can often reveal differences that macro analyses did not. There, is therefore, a need "...for more finely-grained data analysis" (p. 262).

In order to avoid the problems presented above, the authors recommend following research designs that are participatory, more detailed in their approach and longer term (p. 263). The authors recommend a number of research methods and manuals which can be found on p. 263. Finally they conclude that: "The acknowledgement of gender differences in resource use and knowledge is not only important for ethnobiological research: it is critical for biodiversity conservation, cultural revitalization, and resource management, as both women's and men's social networks and individual practices disseminate and conserve ethnobiological knowledge and cultural traditions" (p. 265).

**Case Study 8:** *The Gendered Nature of Biodiversity Conservation* (Zweifel 2001)

**Location/Ethnic Group:** Global – general study

**Nature of Study:** Discusses research on gender and biodiversity in the context of international politics and the necessity to take into account women's empowerment in developing policies contributing to the sustainable use of biodiversity (p. 107-8).

**Findings:** Perspectives on gender, development and the environment are still evolving; more research is needed (pp. 108-09). See discussion on gender in the introduction to this chapter for details. Although rural women all over the world play a significant role in agriculture and biodiversity management, much of their productive work is unaccounted for in economic terms as it is not counted in GNP and they are not paid for it (p. 112).

In many rural societies across the world, "sustainable use and conservation of biodiversity is embedded in societal and cultural systems" (p. 113). Women play a particularly important role in biodiversity conservation as they are most often the providers of food and medicine for daily family use. They, too, are most often manage seeds and therefore are the keepers of plant genetic material (p. 113). These roles in traditional societies accorded women with respect and status (p. 114).

Many programs associated with plant breeding and environmental issues have tended to ignore women's knowledge of their ecosystems and their creative roles therein (p. 114-115). Women's local knowledge in many rural areas has, in fact, increased and become more important as many young men migrate to work in cash crop production and/or local wage labour (p. 115). Modernization of agriculture and an emphasis on the market economy is, however, "contributing to the gradual erosion of local knowledge systems" including that of women (p. 116).

**Conclusions:** Women's role in conserving biodiversity is essential to sustainable development and women's empowerment (p. 119). A gender perspective needs to be present in all efforts to conserve biodiversity and develop sustainably (p.119).

Respect and recognition of local knowledge as part of a global knowledge system that includes Western scientific knowledge needs to be established. Knowledge systems need to be seen as complementary, not conflicting (p. 120).

An extra effort needs to be made in order to include women in research, decision making and the implementation of various programs (p. 120). This participation "is understood to involve responsibility, trust, and cooperation – not just consultation" (p. 120).

### *2.4 Analysis*

Although the case studies above represent at least five countries over a large geographical region (stretching from Mexico to Bolivia), there are nonetheless many similarities in the situations facing rural communities. The global market's depressing effect on prices for agricultural crops has made it impossible for many inhabitants of rural Latin American villages to make a living from farming forcing many farmers off their land and in search of wage labour. The migration for wage labour disproportionately affects men in the communities studied, and was a factor in all of the populations studied above, from the Otomi in San Pedro Arriba in Mexico to the rural farmers of the Bolivian Andes. The men, being absent from the household for extended periods and therefore unable to contribute to most agricultural tasks, places a higher burden of agricultural work on women's shoulders.

As evidenced in the Rimarachin Cabrera, Zapata Martelo, and Vazquez Garcia (2001) study of the Otomi of San Pedro Arriba, other than ploughing and planting, women were largely responsible for the bulk of the agricultural tasks. Women's knowledge of their ecosystems becomes essential to family survival and biodiversity conservation, as they gather food plants and medicine from remaining uncultivated land, and continue to be the main person responsible for ensuring agrobiodiversity as well.

When access to farming land is lost and the only land available is the home garden, women tend to transfer plant genetic material to these gardens. These home gardens continue to be a valuable source of food, medicine and biodiversity conservation as was detailed in the study of Greenberg (2003) of the Yucatec in Yucatan, Mexico and the Vazquez-Garcia (2008) study of the Nahuas and Popolucas in Veracruz, Mexico. These home garden sites become essential to household survival, often contain dozens of food and medicinal plants, and help to continue the development and transfer (to other family members) of women's ecological knowledge. Vasquez Garcia (2008) says these gardens are sites of dispersal of genetic material and important biodiversity conservation that are often overlooked by conservation biologists who tend to emphasize field crop agriculture and the roles of male farmers in the maintenance of traditional crop varieties (p. 62).

When land becomes scarce, home gardens increase in importance, not only for household survival but for the reproduction of plant genetic material and gendered ecological knowledge. While the increasing importance of home gardens can help families and communities survive, it cannot replace the loss of access to uncultivated wild plants which represents an overall loss of food sovereignty at the community level (Vazquez Garcia, 2008: 75). The limited availability of home gardens has a negative effect on family nutrition, women's ability to manage biodiversity and consequently their status (Hoffman, 2003: 269).

Both the Arawakan of Venezuela (Hoffman, 2003) and the rural populations of the Bolivian Andes (Paulson, 2003) witnessed a loss of agrobiodiversity, biodiversity and subsequent erosion of their environment and livelihoods due to a change in market economics and land tenure. This shows an important need to examine the forms of knowledge and value that motivate and inform the social and ecological dimensions of practice and exchange, not just those that emanate from western ideas of agricultural

modernization which "prioritizes commercial production over the rest of life" (Paulson, 2003: 251-252). Vazquez Garcia (2008) agrees with Paulson as she states in her conclusion that: "More research is needed in order to give them [Indigenous women in this case] voice and empower them...to ensure that the plant resources they have used for millennia to feed themselves are conserved for their own benefit and that of humankind" (p. 75).

Trends in the global economy that favour agribusiness over food security need to be questioned. The case studies presented here all show that socio-economic conditions for participants have become more difficult and food security is at risk. The valuation of main crops for export has most often privileged men's knowledge over women's and even development aid projects have in the past favoured training the men of the village as the "head of agricultural work," completely ignoring rural Latin American women's important role in agriculture. Agricultural "development" favours new varieties (often genetically modified to suit the seed seller's profits) and high cost inputs such as fertilizers and pesticides. But world prices do not support these practices for long, and soon, as we have seen in the studies, cultivated land is abandoned or sold as men and women join the search for an income that they can survive on. Just as my experience in Chad taught me, there is another reality out there: rural women all over the world are still working hard to maintain food security for their families despite the adverse economic conditions. Their knowledge is not only important for their community's survival, but is a key element in the global conservation of biodiversity. As a UNDP factsheet exploring the nuances of gender and biodiversity for development states:

> [Not very well] understood is women's role as custodians of plant resources and as reservoirs of traditional knowledge on edible and medicinal plants. As farmers and managers of the home, women predominate as gardeners, herbalists and gatherers of wild plants. They also have a leading role in plant breeding, conservation and domestication. Home gardens, which

> women tend, have grater species diversity than cultivated fields, and are central to the transmission of knowledge and survival skills form mothers to daughters...Rural women produce between 60 percent and 80 percent of food in developing countries, and in their role as farmers, they improve and adapt plant varieties, cultivate plants, and store and exchange seeds (UNDP Fact Sheet, 2005: 1).

Along with questioning western ideas of agricultural modernization one must question the education system that favours "modern knowledge" over knowledge that has been held by the community for centuries. As Hoffman (2003) concluded: A serious re-examination of the education system is recommended to create a type of integrated education respectful of both new and old knowledge and which provides skills needed for today's modern world while supporting the preservation of agricultural biodiversity and reinforcing the status of women cultivators as critical contributors to economic, subsistence and family life (p. 269).

It is important to note that Hoffman is not recommending that one type of knowledge be valued over another, or that traditional cultivation methods should be adhered to in order to preserve important ecological knowledge. The fact that the younger generation in this study is less inclined to follow in their parent's footsteps and tend to leave for jobs in towns and cities is indicative of the hard work of manioc cultivation and the lure of an "easier lifestyle." Unfortunately this study shows that this "easier lifestyle" is not leading to better health and nutrition for families. In many cases it results in more pressure on the limited resources of the manioc swidden fields, and the women who maintain them, as they support their offspring who have returned home from the towns and cities where the "easy life" was not so easy. The issue is how to improve cultivation of manioc, with new technology and perhaps modern machinery, so that traditional crops that have supported these populations for generations may continue to do so. In order to do this, manioc cultivation must take

precedent over other imported crop varieties and be recognized for its place in a country's food security (just as rice was in Japan). This valuation starts with the knowledge of those who have cultivated and protected these varieties for millennia – the women of the region. When their knowledge is valued by society and taught in schools, then we may see the development of new technologies by the younger generation which could support a more efficient, less arduous way to cultivate, harvest, and process manioc.

Kothari's (2003) participatory study on the use of medicinal plants in La Esperanza, Ecuador revealed that rural women's therapeutic knowledge and roles have remained relatively unexplored by most ethnobiologists because: "1. there is a preoccupation with 'expert' healers (such as Shamans) and less so with the informal/popular domain; 2. disproportionately high interest in exotic practices and ritualistic healing; 3. women's therapeutic activities may be less visible to the outsider; 4. androcentrism or the male bias in epistemological inquiry and ethnographic accounts results in a tendency to ignore women's point of view" (pp. 159-160).

Kothari therefore recommends exploring gender not just as the reporting of male or female but rather as a "complex of shifting ideologies and identities" (p. 160) which occur at the centre and periphery of most societies (p. 161). To explore these nuances and power relations, participatory research methods, such as the one used in this study, are very helpful.

Kothari's study underlines the need to value the knowledge that women hold (as well as men) in the realm of medicinal plants. Our fascination with the exotic role of the Shaman healer has tended to render largely invisible the day-to-day substantial and supportive role that rural Latin American women play in their family's health care. Given that, "more than three-quarters of the world's population rely on health practitioners and traditional medicines for their primary medical needs" (Cruicible II Group, 2000: 1), women's expertise in this

area is not only essential to community survival but also offers opportunities for improving their status in their communities, especially through biodiversity projects (UNDP Fact Sheet, 2005: 2). I would add, following Hoffman's lead above, that finding space for passing on this valuable knowledge within the local education system and in local social and cultural institutions is a first step. This step can be supported by a concerted effort on the part of ethnographers and ethnobotanists to include women and their ecological knowledge in their studies.

The evidence provided by Kothari in her study is reinforced by the work of Pfeiffer and Butz (2005) in their survey of 220 ethnographical and ethnobotanical research articles. Their survey confirms that this research most often does not take into account cultural and gender variations in traditional ecological knowledge and practice. This fact can lead to misleading results and "cultural blind spots" when failing to connect gender-differentiated roles with distinct types and levels of knowledge (p. 245).

In order to correct this imbalance Pfeiffer and Butz recommend that ethnographical and ethnobotanical research studies pay particular attention to the composition of the research team, being careful to include women as well as men on the team in order to improve access to female participants in the study, and that closer attention be paid to the topic of study and the choice of informant and/or translator to avoid any biases. They also suggest that greater effort be made to include women as participants in any study, and that a focus on participatory methods and microanalysis of data be employed to help reveal any gaps in data collection and analysis (pp. 257-265).

Pfeiffer and Butz also describe the cultural and gender variations in ecological knowledge that are often overlooked and can lead to misleading research results: 1.) men and women can have species-specific knowledge of biodiversity; 2.) exposure to different sites

within their ecosystems defined by cultural norms and degrees of access leads to a spatial variation in ecological knowledge between men and women; 3.) women and men are often responsible for different phases of the same activity and the knowledge of these activities be it seeding, planting, weeding, harvesting or processing are of a temporal variation; 4.) Temporal and spatial distinctions lead to varying species encounter rates between men and women. Women, spending more time (in many societies) in a restricted area, tend to have a higher incidence of repeat encounters with plants they live with, giving them a more profound knowledge of these plants (pp. 248-257).

### *2.5 Concluding Remarks*

The analysis of the Latin American case studies above has revealed similar issues outlined by the general/global studies by Pfeiffer and Butz (2005) and by Zweifel (2001). These studies conclusively show the value of a gender analysis and a more focused qualitative community analysis. In order to understand how gendered ecological knowledge is being maintained, changed, or why it may be disappearing, it is necessary to first take a closer look at the dynamics at play at the community level: the socio-economic conditions and the cultural context. It is also important to relate these dynamics to the world at large, to relate the local to the global.

Zweifel's (2001) comprehensive study on gendered ecological knowledge and sustainable development is a good example of relating the local to the global. Her conclusions resonate with the community case studies; her following key insights inform my research: "1.) Women's role in conserving biodiversity is essential to sustainable development and women's empowerment; 2.) A gender perspective needs to be present in all efforts to conserve biodiversity and develop sustainably; 3.) Respect and recognition of local knowledge as part of a global knowledge system that includes Western scientific knowledge

needs to be established. Knowledge systems need to be seen as complementary, not conflicting; 4.) An extra effort needs to be made in order to include women in research, decision making and the implementation of various programs; 5.) This participation "is understood to involve responsibility, trust, and cooperation – not just consultation" (pp. 119-120).

Finally Zweifel adds another dimension which is important to note: Although rural women all over the world play a significant role in agriculture and biodiversity management, much of their productive work is unaccounted for in economic terms as it is not counted in GNP and they are not paid for it (p. 112). Beneria (2003) also points out that historical links to the market have been different for men and women – women being disproportionately engaged in unpaid productive labour such as agricultural family labour, domestic work and volunteer work (p. 74).

In moving towards a better understanding and valuation of the ecological knowledge that rural women and men have in rural areas in Latin America, it may be necessary to rethink how we include such value in our global economic calculations. Beneria gives us an idea of the magnitude of ignoring such work:

> According to the UNDP's "rough estimates" at the global level for 1995, if unpaid activities were valued at prevailing, they would amount to $16 trillion or about 70% of total world output ($23 trillion). Of this $16 trillion, $11 trillion or almost 69% represents women's work (UNDP 1995, cited on p. 74).

Although it is beyond the scope of this study to delve into calculating the global economic value of gendered ecological knowledge and its related activities, this data at least in part sheds light on the value of unrecognized work and knowledge on a global scale.

In conclusion, the case studies presented above have provided evidence of the existence of rural Latin American women's ecological knowledge which is not only different from that

of men, but which is becoming increasingly important to household survival and to the conservation of biological diversity. The ability of women to maintain this important knowledge is dependent on access to land and on the support of various socio-cultural institutions. Economic conditions that favour agricultural modernization and the production of crops for the global market tend to ignore women's important role in agrobiodiversity and biodiversity conservation in general. Researchers from Western countries, particularly male ethnobiologists, ethnobotanist and ethnographers, need to focus more on women's ecological knowledge and its important role in their family's and community's health care and food security.

The case studies have illustrated that the conservation and transmission of rural Latin American women's ecological knowledge is affected by global processes. I shall now move to the global stage and see how the issues regarding gendered ecological knowledge are being handled there. The first task is to explore where and how gendered ecological knowledge is treated in international law, the most important being the *Convention on Biological Diversity.* Following a review of the CBD and other international agreements that deal with biodiversity and gendered ecological knowledge, I will turn to exploring the policies of major Canadian NGOs regarding collecting ecological knowledge, and how they may (or may not) be sharing this information with the CBD.

# Chapter 3: The Convention on Biological Diversity

## *3.1 Introduction to the Convention on Biological Diversity*

*The Convention on Biological Diversity* (CBD) is a source of international law in the form of a convention which is ratified by 192 states and the European Community (Secretariat of the CBD, n.d.). A convention in international law is a legally binding document which requires each ratifying country's government to report on its progress towards implementing its provisions.

*The Convention on Biological Diversity* was one of the key agreements opened for signature at the "Rio Earth Summit" or the United Nations Conference on the Environment and Development held in Rio de Janeiro, Brazil in 1992. Described as "the largest-ever meeting of world leaders," the Earth Summit was held to discuss the findings of the Brundtland Commission on Sustainable Development (Secretariat of the CBD, n.d.). Out of the Rio meeting came two binding agreements: the Convention on Climate change and the CBD. "The CBD remained open for signature until 4 June 1993, by which time it had received 168 signatures. The Convention entered into force on 29 December 1993, which was 90 days after the 30th ratification" (Secretariat of the CBD, n.d.).

The CBD is the first global agreement on the conservation and sustainable use of biological diversity. The CBD has three main goals: 1.) The conservation of biological diversity; 2.) Sustainable use of the components of biodiversity; and 3.) Sharing the benefits arising from the commercial and other utilization of genetic resources in a fair and equitable way.

The Convention is governed by the Conference of the Parties or COP which consists of all governments and regional economic organizations (such as the EU) that have ratified the treaty.

> This governing body reviews progress under the Convention, identifies new priorities, and sets work plans for members. The COP can also make amendments to the Convention, create expert advisory bodies, review progress reports by member nations, and collaborate with other international organizations and agreements. The Conference of the Parties can rely on expertise and support from several other bodies that are established by the Convention: 1.) The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). The SBSTTA is a committee composed of experts from member governments competent in relevant fields. It plays a key role in making recommendations to the COP on scientific and technical issues; 2.) The Clearing House Mechanism. This Internet-based network promotes technical and scientific cooperation and the exchange of information; 3.) The Secretariat, based in Montreal, is linked to United Nations Environment Programme. Its main functions are to organize meetings, draft documents, assist member governments in the implementation of the programme of work, coordinate with other international organizations, and collect and disseminate information. In addition, the COP establishes ad hoc committees or mechanisms as it sees fit (Secretariat of the CBD, n.d.).

While there are other international agreements dealing with traditional knowledge of indigenous and local communities – such as the historic *ILO Convention 169* and the more recent *United Nations Declaration on the Rights of Indigenous Peoples* (both which are discussed in the following pages) – the CBD is a key international legal agreement which enjoys widespread support in the world and which governs biodiversity, knowledge, and benefits related to biodiversity. For these reasons, I have focused on the CBD in my research as I felt it was essential to fully understand the way the CBD was conceived and how it is being implemented. In order to ascertain the communication channels regarding gendered ecological knowledge, it is essential to understand how the global community conceives of such knowledge to determine if this has any relationship to the data collected in the case

studies of Chapter 2.

It important to acknowledge that the impact that international law has on rural communities is uneven. This being said, how the CBD and other conventions and treaties in international law are acted on locally is beyond the scope of this thesis.

### *3.2 The CBD's place in International Law and Globalization*

The CBD is unique in international law in the way it approaches collective responsibility (Oguamanam, 2006; Tsioumani, 2008; Yamin, 1995). International law has typically been state centered; each state carefully guarding their autonomy regarding the issues at hand (Currie, 2001). Similarly the CBD is a legally binding agreement written by and for the states that have ratified it; but its tone differs from many international agreements in the way it approaches global biodiversity. In the preamble of the CBD it states, "*The Contracting Parties...Affirming* that the conservation of biological diversity is a common concern of humankind" (CBD, 1992: preamble, paragraph 3). This reference to the "common concern of humankind" moves the emphasis away from state ownership of biological diversity to "the [collective] duty or responsibility to protect and not to harm, abuse, or destroy" (Oguamanam, 2006: 37).

Another international agreement (although not legally binding) which is similar in its approach to collective responsibility is the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP). Indigenous Peoples are a diverse group of people living in many states around the world and it is remarkable that we have a document that expresses their collective interests (Gilbert, 2007). The UNDRIP, and the CBD to some extent, represent an evolution of international law and its changing philosophy which is slowly

opening up to concepts other than the western, state centered ones that brought international law into being (Gilbert, 2007).

The CBD sets a legal precedent by requiring that the parties balance the needs and aspirations of present and future generations (Tsioumani, 2008; Yamin, 1995). Article 2 of the CBD states, "*Sustainable use* means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations."

This statement raises a number of issues and dilemmas; the most important being how does the COP propose that the parties implement this article? Initially, it was certainly not clear as Yamin writing in 1995 indicates: "The Convention fails, however, to provide guidance on how this should be done" (p. 544). How the COP now provides guidance on the implementation of Article 2 will be revealed below when we take a look at specific documents.

Sustainable use also raises questions of burden sharing which extend beyond national boundaries and raise significant moral and ethical dilemmas (Yamin, 1995). Yamin concludes: "A thorough appreciation of the underlying moral and ethical issues involved in developing such theories might, en route to that future, actually generate consensus in the international context and also provide a much-needed ethical framework guiding how, as individuals, we ought to live our lives" (Ibid: 546). The fact that the text of the CBD broaches the subject of moral obligation demonstrates that the theory behind it is more familiar to the Grotian philosophy of international law than to the positivist theory of state centered international law.

Finally the CBD is also unique in that it calls for "fair and equitable sharing of benefits arising out of the use of genetic resources" (Tsioumani, 2008: 224). Yamin points out that the text of the CBD references the sharing of benefits at least four times which largely reflects the desire of developing countries to not only avoid the exploitation of their resources by the North on unfavourable terms, but also their desire to link conservation to development (1995: 541). "[W]hile the Convention does not include the concept of 'ecological debt' for past exploitation, which was fiercely resisted by developed countries, it does take on board many of the anthropogenic ethical arguments presented by developing countries in championing their version of an equitable international order" (Ibid: 542).

Yamin cautions us on these last words, though, as she says there are several considerations which "temper optimism." First of all the Convention is written in such a way as to lend itself to many different interpretations and is often ambiguously drafted especially relating to the access and transfer of technology. Yamin recommends that given the "ambiguities and shortcomings of the Convention... [it] might certainly benefit from a philosophical programme offering explication and choices for future interpretation and development by negotiators" (Ibid: 543). In my research, it will be important to investigate whether the work of the COP has supported and developed significantly to clarify the "ambiguities and shortcomings" that Yamin alludes to in 1995.

However, the fact that the text of the CBD attempts to at least broach the subject of distributive justice is a step in the right direction and an indication of the effects of globalization on international law. These discussions could not have been possible without the inclusion of many states and cultures around the world and without an evolution in our global communication and thought processes. This is evidence of the theories of hybridization at work: "subversive of essentialism and homogeneity...recognizing multiple

identities, widen[ing] the space for critical engagement" (Pieterse, 2000: 75) and "releas[ing] reflection and engagement [on the condition of human inequality] from the bounds of nation, community, ethnicity, or class" (Ibid: 83).

The CBD is therefore unique in international law by virtue of its three objectives: the collective responsibility towards conserving biological diversity; the sustainable use of the components of biodiversity; and the sharing of benefits arising in a fair and equitable way. Its uniqueness represents the evolution of international law towards not only considering subjects other than states, but also towards a concern for humanity and the moral and ethical dilemmas that face us today. The synergistic process of globalization, in my opinion, manifests itself in international law and the thinking and philosophy that underlie such conventions as the CBD.

Having discussed the unique position that the CBD occupies in international law and how it reflects an evolution of the philosophy of international law and theories on globalization, I will now turn to exploring the concepts relevant to this study - biodiversity, traditional ecological knowledge and gender - to evaluate how they are dealt with in the text of the CBD, and the decisions of the COP, and how this relates to the process of globalization.

### *3.3 Biological Diversity ~ Meanings and Debates*

Biological diversity or biodiversity is a concept which has been defined many times; nevertheless there is not a widely accepted use of the term (Oguamanam, 2006: 36). There is some consensus that biodiversity was originally coined in the late 1980s by American scientists (Ibid: 2006). Biodiversity, unlike the term bioresources (which come from biodiversity) is an abstract term knowing no owner and no national or political boundaries

(Ibid: 36-37). Various definitions of biodiversity stress the umbrella nature of the term, encompassing all species, ecosystems and processes, and emphasizing its multidimensional character (McNeely, J. et al., 1990; Wood, P. M., 2000 cited in Oguamanam: 37).

> Biodiversity can then be understood as an abstraction whose real connection to humanity crystallizes partly in the ubiquitous necessities called biological resources. To that extent, biodiversity, albeit theoretically abstracted, has an empirical imperative. Biodiversity is the philosophical touchstone for the discourse on bioresources (Ibid: 37).

The CBD defines biological diversity as: "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (CBD, 1993: Article 2, paragraph 1).

Biodiversity is not evenly distributed across the world. Most of the world's biodiversity is located in the tropical south: tropical rainforests are believed to contain 50 to 90 percent of all species even though they cover at most 9 percent of the earth's land surface (McNeely et al., 1990 cited in Oguamanam, 2006: 39; WRI 1992, cited in Yamin, 1995: 530). The World Conservation Monitoring Centre identifies the following "megadiversity countries" – Mexico, Columbia, Ecuador, Peru, Brazil, Zaire, Madagascar, China, India, Malaysia, Indonesia and Australia as containing up to 70 percent of the world's species diversity (Yamin 1995).

While changes in biodiversity - the disappearance of biological resources, and species extinction - have been part of a natural evolutionary process since the beginning of life on earth about four billion years ago (Oguamanam, 2006; Yamin, 1995), it is the current rate of loss of biodiversity due to human activities, that has convinced scientists of the inability of ecosystems to naturally regenerate. The sharp decline in biodiversity during the

past 100 years has serious implications for all life on earth, including human beings (Oguamanam, 2006; Wuketits, 1997; Yamin, 1995). Therefore our categorization of the biological resources of the world as related to biodiversity, and our concern over the state of biodiversity, has recently arisen for purely anthropocentric reasons – stressing the economic or utilitarian value of biodiversity to human beings (Oguamanam, 2006; Wuketits, 1997; Yamin, 1995).

Biodiversity, having been identified as a concept in the west, and having been defined and valued as such, does not mean that there is not another way to look at "life on earth." Oguamanam (2006) identifies an intrinsic or value centred approach; Yamin (1995) calls it an ecocentric approach – stressing the intrinsic value, the uniqueness, integrity and interdependence of all forms of life. This approach is more prevalent in non-Western cultures according to Oguamanam (2006) and is not associated "...with humanity's assumption of a paternalistic role over other life forms."

Yamin (1995) has expanded upon both the anthropocentric and ecocentric rationales for biodiversity by pointing out that important questions are being considered in the Western philosophic tradition as a result. Questions such as:

> (1) what moral rights the natural world should enjoy, (2) the extent of correlative duties this imposes on humankind, and (3) the kind of political, legal and institutional structures in which such rights should be respected. By raising these questions, biodiversity conservation has connected environmental issues to the central themes of jurisprudence – the relationship between morality, rights and law (p. 535).

These questions and their responses demand that we reconsider the relationship between humans and nature and the institutions of society at large that support this relationship (Yamin, 1995). Discussing the concept of biodiversity, then, allows us to

explore a sort of "Pandora's Box" of ideas regarding human being's relationship to nature. The way in which we approach these discussions and the direction they take is of utmost importance, not only to stop the rapid, untenable loss of biological resources so important to human survival, but to reconfigure life on earth in such a manner that is sustainable for all.

The question remains, though: are the various bodies and meetings of the CBD the place in which these discussions are able to be fully explored? And, given that the case studies in Chapter 2 have illustrated the important link between biodiversity conservation and gendered ecological knowledge, how are discussions regarding biodiversity within the CBD bodies and meetings related to gendered ecological knowledge? To answer these questions I will outline some of the more important documents pertaining to biodiversity of the COP and SBSTTA in order to determine how these discussions are progressing. Then I will explore the concept of Indigenous knowledge and traditional ecological knowledge in general and within the various documents and decisions produced by the bodies and parties of the CBD and relate this to how biodiversity is dealt with; after which we explore the nexus of gender and its relationship to the above.

### *3.4 Biodiversity in the CBD*

The main document dealing with biodiversity in the CBD is *The Global Biodiversity Outlook 2*. Written in 2006 this document is the flagship publication of *the Convention on Biological Diversity*. Preparations are currently underway for the production of its third edition, *Global Biodiversity Outlook 3,* which will be formally launched in 2010, proclaimed as the International Year of Biodiversity. *Global Biodiversity Outlook 2* assesses the current status and trends of biodiversity and the key drivers of biodiversity loss (Secretariat of the CBD, n.d.).

This document is an analysis of global biodiversity trends and as well outlines a framework for the implementation of the *2010 Biodiversity Target*. The *2010 Biodiversity Target* was originally agreed upon the in April 2002, by the COP, in order to "achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth." The Biodiversity Target was endorsed by the World Summit on Sustainable Development, and the United Nations General Assembly at the 2005 World Summit, and subsequently named as one of four new targets being incorporated into the Millennium Development Goals (Secretariat of the CBD). In order to work towards the *2010 Biodiversity Target*, the *Global Biodiversity Outlook 2* includes a framework of seven focal areas.

The following page is Table 3.1 which outlines the seven focal areas and indicators used to assess progress towards the *2010 Biodiversity Target*. As is mentioned at the bottom of page 70, these focal areas and headline indicators were used in the *Global Biodiversity Outlook 2* document and have now been expanded. I will examine other documents in the following pages, which reveal these updates, in order to see how the discussion is progressing. The indicators listed below were detailed for the first time in the *Global Biodiversity Outlook 2* in order to assess and communicate trends in biodiversity. The data presented provides a baseline from which to measure further indicators; the next are due to be published in *Global Biodiversity Outlook 3*.

On following page is:

**Table 3.1: Headline Indicators for Assessing Progress towards the 2010 Biodiversity Target**

**Headline Indicators for Assessing Progress towards the 2010 Biodiversity Target†:**

**FOCAL AREA: Reducing the rate of loss of the components of biodiversity, including: (i) biomes, habitats and ecosystems; (ii) species and populations; and (iii) genetic diversity**

- Trends in extent of selected biomes, ecosystems and habitats
- Trends in abundance and distribution of selected species
- Change in status of threatened species
- Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socio-economic importance
- Coverage of protected areas

**FOCAL AREA: Maintaining ecosystem integrity, and the provision of goods and services provided by biodiversity in ecosystems, in support of human well-being**

- Marine Trophic Index
- Connectivity/fragmentation of ecosystems
- Water quality in aquatic ecosystems

**FOCAL AREA: Addressing the major threats to biodiversity, including those arising from invasive alien species, climate change, pollution, and habitat change**

- Nitrogen deposition
- Trends in invasive alien species

**FOCAL AREA: Promoting sustainable use of biodiversity**

- Area of forest, agricultural and aquaculture ecosystems under sustainable management
- Ecological footprint and related concepts

**FOCAL AREA: Protecting traditional knowledge, innovations and practices**

- Status and trends of linguistic diversity and numbers of speakers of indigenous languages

**FOCAL AREA: Ensuring the fair and equitable sharing of benefits arising out of the use of genetic resources**

- Indicator to be developed

**FOCAL AREA: Mobilizing financial and technical resources, especially for developing countries, in particular, least developed countries and small island developing states among them, and countries with economies in transition, for implementing the Convention and the Strategic Plan**

- Official development assistance provided in support of the Convention

† Focal areas and associated headline indicators are from decision VII/30, with refinements as recommended in SBSTTA recommendation X/5. This box lists only those headline indicators discussed in this edition of the *Global Biodiversity Outlook*, and the sequence of focal areas differs from decision VII/30. Source: (Secretariat of the CBD 2006: 22).

The SBSTTA or Subsidiary Body on Scientific, Technical and Technological Advice, is responsible for providing recommendations to the Conference of the Parties (COP) on the technical aspects of the implementation of the Convention and is comprised of government representatives with expertise in relevant fields, as well as observers from non-Party governments, the scientific community, and other relevant organizations. In Decision VIII/15 of the 8th Conference of the Parties, the SBSTTA reviewed the framework above and expanded it to include new goals and sub-targets for each focal area. For example the first Focal Area, "Reducing the rate of loss of the components of biodiversity," is now further defined by a goal stating: "Promote the conservation of the biological diversity of ecosystems, habitats and biomes, with the sub-targets: 1.1: At least 10% of each of the world's ecological regions effectively conserved; and 1.2: Areas of particular importance to biodiversity protected" (Secretariat of the CBD, n.d.).

As the above shows, the discussion on the concept of biodiversity and ways in which to track and measure it in order to stall increasing loss, is ongoing within the COP and advising bodies. There are also several other initiatives helping to refine the discussion and increase implementation of the Convention. These include the following:

*The 2010 Biodiversity Indicators Partnership (BIP)*

The BIP is a global initiative that brings together a host of international organizations including NGOs to work on indicator development, in order to provide the best available information on biodiversity trends to the global community, and to assess progress towards the CBD 2010 target. The three main objectives of the 2010 BIP are: (1) to generate information on biodiversity trends which is useful to decision makers; (2) to ensure improved global biodiversity indicators are implemented and available; (3) to establish links between biodiversity initiatives at the regional and national levels to enable capacity

building and improve the delivery of the biodiversity indicators (Secretariat of the CBD, n.d.).

*National Biodiversity Strategy and Action Plans (NBSAPs)*

Through Article 6 of the Convention parties are required to: "Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in this Convention relevant to the Contracting Party concerned; and integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies" (Secretariat of the CBD, n.d.).

In order to assist in the development of these plans, five workshops were held in the first months of 2008 in Africa, Asia, Europe and Latin America. The result of these workshops is contained in the report, *Mainstreaming Biodiversity: Workshops on national biodiversity strategies and action plans* (2008), which features best practices in mainstreaming biodiversity, communication and reporting. It, also, according to Ahmed Djoghlaf (Executive Secretary of the CBD), "demonstrates that [there is] a highly dedicated community of stakeholders working in all regions to achieve the objectives of the Convention" (p. 1).

This document is impressive and represents a concerted effort to guide parties to the Convention towards integrating biodiversity into economic sectors, cross-sectoral policies and strategies, and spatial planning (Ibid: 3). The document highlights country and region wide achievements in NBSAPs and some of the important developments for Latin America include: The adoption of NBSAPs by all the countries of Central America and the development of a Mesoamerican biodiversity strategy to strengthen regional cooperation. As

well, all countries in South America have national biodiversity strategies and the regions of Peru and Colombia are developing their own sub-national biodiversity strategies. Sub-regional strategies have been adopted by both the Andean Community and Mercosur, and a strategy is under development for the Amazon Cooperation Treaty Organization (Ibid: 8-11). Of the parties to the Convention, 166 have developed NBSAPs. During COP-9, the COP called on the remaining 26 parties to develop their NBSAPs by 2010 (Secretariat of the CBD, n.d.).

*The Biodiversity for Development Initiative*

This initiative was started to assist in the implementation of Article 6(b) which states: "integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies." The COP recognizes that biodiversity is an essential component of human development and therefore it is necessary to link protection of biodiversity, biological resources, and ecosystem services with the reduction of poverty (Secretariat of the CBD). The three objectives of this initiative are:

1. To promote the integration of biodiversity considerations into sectoral policies or cross-sectoral strategies (e.g. Poverty Reduction Strategy Papers or Sustainable Development Strategies) as well as ensuring the development dimension in National Biodiversity Strategies and Action Plans (NBSAPs);
2. To facilitate the exchange of experiences and the dissemination of lessons learned and good practices regarding the integration of biodiversity into development sectors and poverty reduction strategies and programmes;
3. To strengthen the linkages between CBD Programmes of Work and development / poverty alleviation and raise awareness of the Parties on this crucial issue (Secretariat of the CBD, n.d.).

The members of this initiative are currently working on a set of guidelines, tools and training modules that will help countries and regions implement policies and activities to mainstream biodiversity (Secretariat of the CBD). One such tool, recently published is the, *Good Practice Guide: Sustainable Forest Management, Biodiversity and Livelihoods*, which highlights best practices in sustainable forest management and refers the reader to resources for implementing these best practices (Secretariat of the CBD, 2009).

The Biodiversity Indicators Partnership, the National Biodiversity Strategy and Action Plans, the Biodiversity for Development Initiative along with the *2010 Biodiversity Targets* and the *Global Biodiversity Outlook 2* are all an indication that the discussion within the parties and bodies of the CBD on biodiversity is moving forward and that the implementation of the articles of the CBD is progressing. As the CBD web site indicates: "the requirement to integrate consideration of the conservation and sustainable use of biological resources into national decision-making, and mainstream issues across all sectors of the national economy and policy-making framework, are the complex challenges at the heart of the Convention" (Secretariat of the CBD, n.d.).

Despite the complex challenges, significant progress is being made and the quantity and quality of the documents regarding the initiatives above is evidence of this progress. Most impressive is the fact that the documents do not gloss over the challenges but rather they state them and offer suggestions and targets on overcoming remaining challenges. For example in *Global Biodiversity Outlook 2*, chapter 4 is entitled "Prospects and Challenges for Achieving the 2010 Biodiversity Target." In this chapter there is an analysis of the sub-targets of the goals of the seven focal areas mentioned above (Secretariat of the CBD, 2006: 60-61) with respect to the realistic prospects for progress by 2010. For example under the Focal Area "Protect Traditional Knowledge, Innovations and Practices," Goal 9 states:

"Maintain socio-cultural diversity of indigenous and local communities" and Sub-Target 9.2 states: Protect the rights of indigenous and local communities over their traditional knowledge, innovations, and practices including their rights to benefit sharing." It is further stated under the column called "Prospects for Progress by 2010" that "The target is achievable but depends on political will, nationally and internationally, and on building capacity among indigenous and local communities and stakeholders" (Secretariat of the CBD, 2006: 60-61).

While the progress made on discussing biodiversity and creating a strategy for worldwide reduction of biodiversity loss is certainly impressive, the above documents and initiatives did not relate biodiversity loss or conservation to gendered ecological knowledge in any significant way. The word "gender" appears only once in the 81 pages of *Global Biodiversity Outlook 2* - on page 19 in a box that lists the Millennium Development Goals, number 3 of which states: "Promote Gender Equality and Empower Women." The words "female" and "women" were similarly absent and "gendered ecological knowledge" did not appear at all.

Traditional knowledge of indigenous populations is certainly featured, as it is a key focal area. But the importance of linking the three, biodiversity, local (often indigenous) knowledge and gender, was not apparent. In the next section, I will examine CBD documents and COP decisions concerning traditional ecological knowledge and gender and relate them to the progress made on biodiversity. First, though, I shall expand upon the concepts of Indigenous Knowledge or Traditional Ecological Knowledge.

### *3.5 Indigenous Knowledge – Traditional Ecological Knowledge – Definitions and Debates*

The category of "traditional ecological knowledge" (TEK) came into being during the 1980s, when the Western scientific community recognized Indigenous Peoples'

ecological knowledge as valuable (Johnson, 1992). As Berkes and Folke (1998) have documented, TEK provides viable alternatives to conventional resource management practices which have tended to separate the social from the ecological in an attempt to control the environment. It has been pointed out by various authors (Berkes, 1993; Johnson, 1992; McGregor, 2004; Oguamanam, 2006; Posey, 1996) that this category or concept was not *defined* by Indigenous Peoples, but has been *lived* by them for thousands of years. The defining of indigenous knowledge (IK) or TEK by Westerners has opened up a discourse where transferrable ecological knowledge (or knowledge capable of being communicated) is categorized.

Berkes (1993) and McGregor (1993) both point to the uncomfortable relationship between scientific knowledge and TEK, underlining the fact that these two knowledge systems are still not easy to combine and that attempts to do so will certainly come up against the "question of power-sharing and decision-making."

Johannes (1993) has underlined the fact that TEK cannot be generalized to mean that all Indigenous Peoples or traditional cultures have an inherent environmental wisdom. As he states:

> Wise and unwise environmental practices and valid and invalid environmental beliefs coexist in many cultures. To assume differently is to assume that with respect to natural resource management indigenous peoples are either inherently superior or inherently inferior to the cultures of the developed world. Both of these extreme images...connote prejudice... (pp. 5-6).

Certainly there is much debate on what, exactly, is indigenous knowledge and/or traditional ecological knowledge. Although both IK and TEK are used interchangeably, it is generally understood that IK includes more than knowledge about the ecology or

environment and is "rooted in the traditional way of life of Aboriginal people (Traditional Knowledge Working Group of the Northwest Territories, Legat, 1991: 1, cited in Bonny and Berkes, 2008: 244). TEK, on the other hand, is knowledge about the environment that is associated with societies that are "non-industrial or less technologically advanced" (Berkes, 1993: 3). Most of the populations holding this knowledge are indigenous or tribal but not exclusively.

A broad definition of TEK is as follows:

> TEK represents a collective understanding attained over time of the relationship between traditional communities and the Earth. It is both evolutionary and dynamic in perspective, as well as being inherently conservative in the manner in which it is handed down. Frequently, it is articulated within a context of spirituality, and it is expressed in terms of roles, respect and responsibilities. It is part of a worldview that is ecological in the broadest sense in process and in organization (Doubleday, 1993: 9).

Despite a definition that gives credence to the relationship of TEK to culture and spirituality, Bonny and Berkes (2008) point out that: "Researchers and non-native resource managers have been criticized for 'extracting' empirical observations of natural phenomena, while failing to consider the cultural, moral, and spiritual context that underpins traditional knowledge systems" (Nadasdy, 1999; Simpson, 2005; Stevenson, 2006, cited in Bonny and Berkes, 2008: 244). What is important to recognize, Berkes (2008) concludes is that one cannot just isolate one form of a complex system of "knowledge-practice-belief;" rather any analysis (or collecting and communicating of such knowledge) must consider the multiple layers that exist. Layers that include "knowledge embedded in social institutions providing norms and rules, and a worldview that shapes perception and provides meaning" (p. 245).

It is important to recognize that, currently, a lot of political power seems to be associated with IK or TEK. IK is wrapped up in Indigenous land claims; land and

knowledge, especially ecological knowledge, are inextricably linked in the Indigenous world view, something that is very apparent in the text of the UNDRIP (Oguamanam, 2006). On the other hand those rural inhabitants who are not indigenous but who possess TEK often relate the power their knowledge is accorded on the international stage as a "source of social legitimation, political leverage and alternative sources of income" (Coombe, 2001 cited in Oguamanam, 2006: 77). Oguamanam concludes that despite the difference in interests (in terms of knowledge as power) of Indigenous and non–indigenous populations, the issue ceases to be politically divisive at the level of discourse about knowledge as: "It is a matter of relative emphasis. In many non-Western world views, the fact remains that the understanding of relationships from which all knowledge forms are generated is an integral part of a people's identity, be they indigenous or not" (Ibid: 77).

Doubleday (1993) argues that through the perspective of natural law (see the Chapter 1 on the Grotian philosophy of international law) we can find common ground and the capacity to change our views, and our frameworks to open up to alternative epistemologies such as TEK (p. 12). Indigenous people have had a long history of being involved in international law and we will first take a look at this history as it lays the basis for understanding the context of Indigenous knowledge or Traditional Ecological Knowledge in international law and more specifically in the CBD.

***3.6 Indigenous Peoples the Context of International Law***

It is generally agreed that the making of the *United Nations Declaration on the Rights of Indigenous Peoples*, adopted by the General Assembly on September 13, 2007, began when the UN Working Group on Indigenous Populations (WGIP) was formed in 1982 (Gilbert, 2007). The WGIP was established by the Economic and Social Council (ECOSOC)

and was assisted with the establishment of a voluntary trust fund which helped increase indigenous participation in the forum of the Working Group (Malezer, 2005: 77).

This was indeed the first step to opening the UN system up to the many concerns of Indigenous Peoples around the world but it was not, as Malezer (2005) points out, the first time Indigenous People have taken their concerns to the international community. The earliest record of this was even before the UN was in existence, in 1924 when Levi General, an Iroquois Chief of the Younger Bear Clan of the Cayuga Nation took his concerns to Great Britain and then to Geneva, Switzerland. He tried, in vain, to address first King George V and the League of Nations, to voice his community's concerns over the Canadian Governments proposed use of the *Indian Act* to alter the Iroquois' status and rights to governance. As Malezer points out, "The Iriquois [his spelling] believed their rights of sovereignty were recognised and protected in international law, in the *Jay Treaty 1794* and the *Treaty of Ghent 1814*, signed between Great Britain and the United States of America" (Ibid: 70). Malezer also points to other historical attempts by Indigenous Peoples around the world to bring their issues to the attention of the international community (see pp. 71-72). In doing so he draws attention to the fact that a dialogue between Indigenous Peoples and the international community was, in fact, attempted prior to WWII.

The political realities after WWII, with decolonization and concerns with anti-racism and human rights, laid the foundation for the opening of the "ears" of the international community, and eventually the opening of the "doors" of the United Nations to the voices of Indigenous Peoples (Currie, 2001 and Ogumanam, 2006).

The International Labour Organization (ILO) was one of the first organizations to raise the issue of the plight of many Indigenous Peoples across the world in the post WWII era. As early as 1952, members of the ILO began looking at the situation of the indigenous

population worldwide (Swepston, 2005). In 1957, the Convention No. 107 on Indigenous and Tribal Populations was adopted with active participation of the UN system. As Swepston points out,

> This seminal Convention remained unique in international law until the adoption of its replacement Convention by the ILO in 1989, and the two together are the only comprehensive international binding instruments of the rights of indigenous peoples and of States' obligations towards them (p. 55).

The original Convention 107 of the ILO was problematic as it viewed Indigenous People as "backward" and took an assimilationist view of "their problems" (Ibid: 55-56). By 1986, the ILO Governing Body agreed to revise the Convention, and after much debate during the ILO Conferences of 1988 and 1989, the adoption of Convention 169 was finalized (Ibid: 56). According to Sweptson,

> ...the Convention takes a broad approach to the rights of indigenous and tribal peoples. Its central provisions refer to the need to respect the continued existence and ways of life of indigenous and tribal peoples, and to involve them fully in taking decisions that concern them. It provides that indigenous peoples have rights to lands traditionally occupied by them, and for the first time in international law states that they also have rights to the natural resources connected with those lands. It also covers a range of other situations, and is intended to guarantee the greatest degree of autonomy and self-government attainable for indigenous peoples in the situations in which they live (p. 57).

Therefore, when the WGIP was formed in 1982, it was during a time when international attention around the issues of Indigenous Peoples had come together from many avenues including UN organs, non-governmental organizations and international associations. The World Council of Indigenous People first met in 1975 in Port Alberni, BC; by 1980 they had shifted their international focus "to the United Nations meetings where

large numbers of indigenous peoples delegates have been active in international developments" (Malezer, 2005: 75).

Although the final text of the *Draft UN Declaration on the Rights of Indigenous Peoples* was agreed upon and adopted in 1994 (Gilbert, 2007), it was then subjected to much debate until June 2006. The Working Group on the, Draft Declaration (WGDD), composed of representatives of member states of the Commission on Human Rights, held its sessions behind closed doors - no indigenous representatives were in attendance, although they did maintain a strong lobby through various indigenous organizations and representatives (Gilbert, 2007). There was much debate from behind those doors as to the wording of the text; not until June 2006 was the deadlock finally broken. At this point, despite disagreements between states and the lobby of indigenous representatives, a vote was forced (by Canada) on the draft resolution. Thirty countries voted for the Draft, twelve countries abstained, and two voted against (Canada and Russia) – the *UN Draft Declaration on the Rights of Indigenous Peoples* was adopted by (the newly named) Human Rights Council and finally recommended for adoption by the UN General Assembly (Ibid: 215).

The other concurrent development which relates to this process was the establishment of the Permanent Forum on Indigenous Issues in 2000 (Malezer, 2005). The new Forum was a significant improvement over the largely non-indigenous WGIP, having 16 members, 8 elected by ECOSOC from nominations received from governments, and the President of ECOSOC appointed another 8 members form nominations received from Indigenous Peoples (Ibid: 81). During his inaugural speech on May 13, 2007, the President of the ECOSOC, Mr. Simonovic, praised the Permanent Forum...

> The Permanent Forum is an innovative organ. It is characterized by its unique membership, composed of indigenous and non-indigenous experts, and by the

> principle of inclusion of all concerned in its work. Since the work of the Permanent Forum is open to all indigenous representatives, whether or not they belong to organizations accredited with ECOSOC, we can conclude that we have created a very open, transparent and participatory body (cited by Malezer, 2005: 82).

The attendance of the first session of the Permanent Forum was said to be 300 delegates, many making submissions to the members of the Forum (Ibid: 83). The beginning of this process was seen as very positive. Les Malazer describes it as a "revolutionary change" (Ibid: 85) and he cites Kenneth Deer (previous Chairman of the Indigenous Caucus) as describing it as, "...no other body quite like in the entire UN at such a high level. It is the only one where indigenous persons have equal status to other international experts. In is not a seat in the UN General Assembly, but it's a notch closer" (Ibid: 84).

As the above evidence points out, the road to the final adoption of the *UN Declaration on the Rights of Indigenous Peoples* by the General Assembly has indeed been a long one. Its history is important to show the evolution of the dialogue and efforts of various organs of the UN and of Indigenous Peoples themselves in reaching this goal. The history of the development of the *UN Declaration on the Rights of Indigenous Peoples* will be important in the further development of international law concerning Indigenous Peoples. As Les Malezer concludes,

> We have a home in the United Nations. The Permanent Forum is a huge achievement. For the United Nations there is still much to be achieved for indigenous rights. For indigenous peoples there is much work yet to be done in the international arena. But at least we can look back to the endeavours of Deskaheh [Iroquois Chief Levi General] and his contemporaries, and feel some sense of satisfaction and accomplishment (Ibid: 86).

Therefore, the *United Nations Declaration on the Rights of Indigenous Peoples* effectively gives Indigenous Peoples (who are not represented by one state but by many) a cohesive voice in the international community. Although not a legally binding document, the UNDRIP nonetheless represents a culmination of three decades of work which has seen the significant contribution to the formation of sources of "customary international law" with regards to indigenous rights (Gilbert, 2007; Oguamanam, 2006). Customary international law is a principle of international law which is built upon state practice over time (Currie, 2001).

It is important to realize that indigenous knowledge is inextricably linked to indigenous rights. Because of the holistic nature of indigenous knowledge it cannot be separated from other phenomena such as collective rights or self-determination and is therefore "a component of all the categories of indigenous claims in international law" (Oguamanam, 2006: 75). Through the process of drafting the UNDRIP, a global awareness of indigenous knowledge and a world view based on socio-ecological systems has been enhanced.

***3.7 Indigenous Knowledge in the Convention on Biological Diversity***

While the UNDRIP has been influential, the *Convention on Biological Diversity* (CBD) is the most important legally binding international instrument that recognizes traditional knowledge of indigenous and local communities (Oguamanam, 2006). Both Article 29 of the UNDRIP and Article 8(j) of the CBD incorporates the same ideals and principles aimed at giving significant regard to indigenous knowledge (Ibid: 80-82).

The CBD attempts to broach the subject of TEK by recognizing its importance in Article 8(j) which states that, "each Contracting Party shall, as far as possible and as appropriate"...

> Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

Traditional knowledge is defined by the CBD as:

> ...the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Sometimes it is referred to as an oral traditional for it is practiced, sung, danced, painted, carved, chanted and performed down through millennia. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, forestry and environmental management in general (Secretariat of the CBD, n.d.).

Therefore, text of the CBD recognizes the value of TEK for sustainable development efforts. It is acknowledged by the COP that most holders of TEK (indigenous and local communities) are living in areas containing the majority of the world's biological resources, and that these communities have "cultivated and used biological diversity in a sustainable way for thousands of years" (Secretariat of the CBD, n.d.). While the COP points to the "appreciation" of traditional knowledge by modern industry and agriculture for its contribution to various products, it also underlines the contribution of indigenous and local communities to the conservation and sustainable use of biodiversity stating that, "Their skills and techniques provide valuable information to the global community and a useful model for biodiversity policies. Furthermore, as on-site communities with extensive knowledge of

local environments, indigenous and local communities are most directly involved with conservation and sustainable use" (Secretariat of the CBD, n.d.).

The Conference of the Parties established a working group to address the implementation of Article 8 (j) and related provisions. Indigenous and local community representatives play a full and active role in its work including in decision making. They are also encouraged to attend other relevant CBD meetings. To that effect, a voluntary fund to facilitate participation of indigenous and local community members in meetings was established and applications are available on the 8(j) web page (Secretariat of the CBD, n.d.)

At the last COP- 9 meeting in 2008 several important decisions were made regarding Indigenous knowledge. The following are some examples:

On guidelines for documenting traditional knowledge: "Parties and Governments and international organizations were urged to support and assist indigenous and local communities to retain control and ownership of their traditional knowledge, innovations and practices including through, (a) The repatriation of traditional knowledge, innovations and practices, in databases, as appropriate; and (b) Supporting capacity-building and the development of necessary infrastructure and resources" (COP 9 Decision IX/13 2008). Important to note are the following two points which were added to guide the parties in how they should repatriate TEK and build capacity: "(c) Documentation of traditional knowledge, innovations and practices, is subject to the *prior informed consent* of indigenous and local communities; and (d) Indigenous and local communities can make *informed decisions* regarding the documentation of their traditional knowledge, innovations and practices" (my emphasis) (Ibid). In the next section I will expand upon the significance of the italicized words of guidance.

In the same document of COP-9 decisions parties and Governments are "invited" to report on (with the input of indigenous and local communities) positive measures for the retention of traditional knowledge in areas relevant for the conservation and the sustainable use of biological diversity, such as: strengthening traditional health-care systems based on biodiversity; strengthening opportunities to learn and speak indigenous and local languages; research on indigenous and local community's way of life and their environment; developing technologies that focus on traditional methods of cultivation, harvesting and post-harvesting activities (i.e., storage and seed preparation activities); initiatives bringing together women, youth and elders; promotion of the creation of businesses offering traditional products and services; strengthening institutions that foster traditional collection and distribution of food, traditional medicine and other resource; culturally appropriate education-curriculum development and implementation initiatives, in indigenous and local communities; initiatives of indigenous and local communities for culturally appropriate and sustainable development (Ibid).

The above is just part of a substantial list which covers just about every aspect of the social and economic lives of indigenous communities. It is helpful to compare the COP decision above with respect to Indigenous knowledge with the progress made on Focal Area #5 (*Protecting traditional knowledge, innovations and practices*) which was expanded to include: Goal 9: Maintain sociocultural diversity of indigenous and local communities; and sub-targets: 9.1 Protect traditional knowledge, innovations, and practices; and 9.2 Protect the rights of indigenous and local communities over their traditional knowledge, innovations, and practices, including their rights to benefit sharing (Secretariat of the CBD, 2006: 61). There has been no development on the indicators to measure these sub-targets and goal, as the indicator remains: *Status and trends of linguistic diversity and numbers of speakers of*

*indigenous languages* (Secretariat of the CBD, 2006: 22). The COP-9 recommended that two additional indicators should be selected by the Ad Hoc Working Committee on Article 8(j) for inclusion in the framework of headline indicators. The above list of areas and activities to report on represents, therefore a significant support of the connection between Indigenous knowledge and a way of life; a way of life that must be respected by providing ample opportunity for informed consent.

Other COP-9 decisions include increase in funding and support for: encouraging and supporting the continued participation of indigenous and local communities in the meetings of the CBD, and the development of elements of sui generis systems for the protection of traditional knowledge, innovations and practices. This included the presentation of a draft of a code of ethical conduct for governments to guide them in ensuring respect for "the cultural and intellectual heritage of local communities relevant to the conservation and sustainable use of biological diversity" (COP 9 Decision IX/13).

Finally the CBD provides two other mechanisms for communication on TEK. One is the *Pachamama Newsletter,* which features news on events, meetings and case studies on traditional knowledge. The newsletters are very interesting and are the one place I have seen a consistent contribution on gender and biodiversity. The most recent issue featured an article written by an Indigenous Brazilian leader (founding member and Executive Director of the GRUMIN Network of Indigenous Women), Eliane Potiguara, entitled "Committing to the Indigenous Culture and Mindset." This is an eloquently written piece, partly philosophical, partly spiritual, and partly political; it delves into the role of men and women in maintaining their traditional ecological knowledge in today's world and acknowledges the importance of this knowledge to the conservation of biodiversity. In Potiguara's words:

> The flame of the ancestral knowledge—be it indigenous or from any other root—

should be immediately lit in the animus of every woman, and of every man, in order to wake up his feminine side, and to ensure that partnership between man and woman be established according to the most transcendental principles of human equality...In indigenous cultures, the woman is a source of energy, she is intuition, a wild woman, not in the original sense of the word, but wild in the sense of deprived from all vice imposed by society, a subtle woman, a primeval woman, a spirit in harmony, an intuitive woman who evolves for the sake of her society and of the planet. This woman is not psychologically or historically conditioned to pass on to her children the attitude of competition and dominance forged by contemporary society. Her power is of a different kind. *Her power comes from the knowledge passed forward along centuries, and hidden by patriarchal histories...*

... the government should acknowledge, through practical actions, the multicultural and differentiated nature of Indigenous Peoples, including gender-related rights, sexual and reproductive rights of indigenous women, and *the feminine traditional knowledge so very important for biodiversity.* Indigenous land tenure should be recognized, as a means to ensure physical, social, cultural, economical and psychological integrity for the indigenous individuals and communities, particularly women, old women, widows and single mothers. (my emphasis) (Potiguara, 2009: 8-9).

I wanted to include the above text because it reflects several aspects of gender theory that were discussed early in Chapter 2: most notably, Shiva's reference to the "feminine principle" (page 32), and how various authors (Pfeiffer & Butz, 2005; Zweifel, 2001) underlined not only the importance of female knowledge of biodiversity but the importance of that knowledge to the empowerment of women (pp. 31-32 above).

The second mechanism is the *Traditional Knowledge Information Portal*, which is described as:

The Traditional Knowledge Information Portal is a broader electronic tool for traditional knowledge research (through the provision of electronic information and web-links) and new ways of communicating. The Traditional Knowledge Information Portal does not provide or document traditional knowledge per se. Its focus is information relevant to, and about, traditional knowledge. *Its aim is to promote awareness and to stimulate dialogue, increase*

*indigenous and local community visibility, facilitate joint work and encourage the exchange of information* (my emphasis) (Secretariat of the CBD, n.d.).

This portal is evidence of the increased awareness, globally, of forms of knowledge other than western and science based. It also indicates the importance of web based technologies to spread knowledge and information and to connect people around the world. In the next section I will analyze the documents presented and relate some of the findings to our discussion on gendered ecological knowledge, after which we will explore the approach to gender and gendered knowledge of biodiversity within the CBD text and decisions of the COP.

### *3.8 Analysis of the CBD Documents and Initiatives Regarding IK or TEK*

The recognition of the importance of TEK by the CBD, the setting up of the Ad Hoc Working Group on Article 8(j) and the details of the COP-9 decisions are all indicators that the issues surrounding traditional knowledge and the important role it plays in protecting and preserving biodiversity are being taken seriously. The COP-9 decisions listed above are guidelines; and although parties are strongly encouraged to take up these guidelines, and are required to report on the progress of implementation of Article 8(j), there is still, in my opinion, a need to develop a set of indicators that will measure progress in a tangible way. Certainly the indicator on trends and status of indigenous languages is a start but this does not address traditional ecological knowledge that may not come from indigenous communities, nor does it address the nuances of knowledge capture and transfer or gendered ecological knowledge. While it is certainly a daunting task to come up with some specific indicators that will measure progress towards the stated sub-targets 9.1 and 9.2 , it does seem

that the conversation within the COP and among traditional knowledge holders (both indigenous and non) is progressing.

It is interesting to note that the emphasis in the COP-9 decisions is on capacity building and prior informed consent on indigenous and local communities regarding their ecological knowledge. Within the *United Nations Declaration on the Rights of Indigenous Peoples* there is also a strong call for both support for capacity building and prior informed consent when it comes to the protection and appropriate use of all natural resources (Gilbert, 2007).

Also of relevance to my analysis are several items listed on pages 88 and 89 of the COP- 9 decisions, most notably: strengthening traditional health-care systems based on biodiversity; developing technologies that focus on traditional methods of cultivation, harvesting and post-harvesting activities (i.e., storage and seed preparation activities); strengthening institutions that foster traditional collection and distribution of food, traditional medicine and other resource; culturally appropriate education-curriculum development and implementation initiatives, in indigenous and local communities; initiatives of indigenous and local communities for culturally appropriate and sustainable development.

My analysis of the case studies in Chapter 2 revealed many of the same recommendations as above when considering gendered ecological knowledge. The strengthening of traditional health care systems based on biodiversity would for the most part be geared towards women's plant gathering activities and home garden cultivation in the case studies presented. As we also saw in the case studies, cultivation, harvesting and post-harvest processing are mostly done by women. Also most of the authors of the case studies called for renewed institutions, including educational, that would support the traditional and

local ecological knowledge of women and men and their initiatives to protect their environment.

Therefore it could be concluded from the documents examined above that the thinking among the Parties of the Convention is certainly appropriate to the issues discovered so far in the case studies explored. What is missing, though, is the context of gender. None of the documents above address the gender issue directly with the exception of the COP-9 decisions which recommend "initiatives bringing together women, youth and elders." This statement strikes me as a bit odd lumping women (over half the population) in with youth and elders. Certainly, it is an attempt to draw attention to the female gender but not in a way that addresses the nuances of gendered ecological knowledge.

There is no doubt that a female voice is present, given the evidence provided by the article written by Eliane Potiguara in the most recent edition of *Pachamama.* Her thoughtful words were a strong indication of the presence of an intelligent, informed, and dynamic Indigenous female leadership. But the question is: is this voice heard in the central meetings and bodies of the CBD? In the next section, I shall explore the nexus of gender in the CBD documents and COP meetings in order to answer this question.

***3.9 Gender and Ecological Knowledge***

Within the context of understanding ecological knowledge there is a need to make a distinction between the knowledge of men and women (Beneria, 2003; Howard, 2003; Shiva, 1989). Gender differences in knowledge have largely been overlooked (Howard, 2003: 17-27). While the science of ethnobotany has become increasingly important in the documentation of TEK - especially as it relates to biodiversity – the field based results have often been disappointingly one sided. As Howard explains, the plant knowledge of a few village men studied largely by male ethnobotanists (or anthropologists) has often been taken

as representative of the knowledge of the entire culture (Howard, 2003: 19). This leads to several errors: 1.) the omission of species and varieties that only women are aware of; 2.) the unreliability of information provided by less informed men regarding identification of plants (names and characteristics) and their management and uses; 3.) the ignorance of gender relations leading to a misinterpretation of people-plant relations (Ibid: 19-20).

In Chapter two, case studies revealed that the lack of a gender focus in research can create cultural blind spots and lead to misleading interpretations. Women's role in the traditional health care of family members was proven to be more important than previously reported. The studies also concluded that the lack of attention to gender in agricultural development projects can jeopardize agrodiversity and biodiversity, and can adversely affect women's work burden and their status. Finally, it was important to investigate home gardens as sites of conservation of biodiversity when women transferred plants formally cultivated or gathered from land that was no longer available.

The above facts are reiterated in a UNDP document called *Biodiversity for Development: The Gender Dimension*. This document also states that:

> Rural women produce between 60 percent and 80 percent of food in developing countries, and in their role of farmers, they improve and adapt plant varieties, cultivate plants, and store and exchange seeds...Women have the broadest knowledge of local plants. They are responsible for most of the conservation and management of the domesticated and wild plants that humans use, and their survival strategies are highly dependent upon biodiversity. These factors make women a key 'entry point' for biodiversity programming. Yet many women's advocates and experts argue that the Convention on Biodiversity and the Bonn Guidelines are not gender-sensitive (UNDP 2005).

So far, the investigation of CBD documents has revealed that little attention is paid to the issues of gender, but in May 2008 at the 9th Conference of the Parties of the CBD a "Gender Plan of Action" was initiated which has the following four strategic objectives:

> 1. To mainstream a gender perspective into the implementation of the Convention and the associated work of the Secretariat;
>
> 2. To promote gender equality in achieving the three objectives of the Convention on Biological Diversity and the 2010 Biodiversity Target;
>
> 3. To demonstrate the benefits of gender mainstreaming in biodiversity conservation, sustainable use and benefit sharing from the use of genetic resources; and
>
> 4. To increase the effectiveness of the work of the Secretariat of the Convention on Biological Diversity (UNEP & CBD, 2008: 8).

It is important to take a deeper look at the CBD gender plan and subsequent documents and activities in order to determine if the UNDP concern (in 2005) of 'gender-insensitivity' is still the case.

### *3.10 The Gender Plan of Action of the CBD*

On May 23, 2008 at the ninth Conference of the Parties in Bonn, Germany, "The Gender Plan of Action (GPA) under the Convention on Biological Diversity" was finalized and published.

In order to understand the context that laid the foundation for the drafting of the GPA it is necessary to take a look at some of the main contributions to gender and biodiversity of the Convention text, Parties and bodies preceding its acceptance in 2008. Table 3.2 contains a selection of the most important contributions listed in the GPA (UNEP & CBD, 2008: p. 4; Annex II, p. 24). Following page: **Table 3.2: Main Contributions to Gender and Biodiversity of CBD Text, Parties, and Bodies**

| Main Inputs from the Convention on Biological Diversity on Gender | |
|---|---|
| **Date/Reference** | **Specific Text (my emphasis)** |
| December 1993:<br>http://www.cbd.int/doc/legal/cbd-un-en.pdf | **CBD - Preamble, paragraph 13:**<br><br>"Recognizing also the vital role that women play in the conservation and sustainable use of biological diversity and affirming *the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation...*" |
| September 1996:<br>http://www.cbd.int/recommendations/sbstta/ | **SBSTTA, Recommendation II/7:**<br><br>A. Socio-cultural Importance<br>(ii) Farmers' knowledge<br><br>"Actual and potential knowledge about local agricultural ecosystems generated by farmer communities is an important key to optimizing the management of those agricultural ecosystems. *Much of the agricultural practices and knowledge are performed and maintained by women in local societies in many regions of the world. The role of women for maintaining those skills and knowledge is of fundamental importance*;" |
| November 1996:<br>http://www.cbd.int/decision/cop/?id=7107 | **COP decision III/11:**<br><br>17. "Encourages Parties at the appropriate level, with the support of the relevant international and regional organizations, to promote...<br>(c) Mobilization of farming communities including indigenous and local communities for the development, maintenance and use of their knowledge and practices in the conservation and sustainable use of biological diversity in the agricultural sector *with specific reference to gender roles*;" |
| May 2000<br><br>http://www.cbd.int/decision/cop/?id=7158 | **Decision V/16: Article 8(j) and related provisions:**<br><br>"Recognizing the *vital role that women play in the conservation and sustainable use of biodiversity*, and emphasizing that *greater attention should be given to strengthening this role and the participation of women* of indigenous and local communities in the programme of work;" |
| Same as above | **COP decision V/16:**<br><br>"Element 1. Participatory mechanisms for indigenous and local communities-<br>Task 4. Parties to develop, as appropriate, mechanisms for |

| | |
|---|---|
| | promoting the full and effective participation of indigenous and local communities with specific provisions for the full, active and *effective participation of women in all elements of the programme of work*, taking into account the need to: (a) Build on the basis of their knowledge; (b) Strengthen their access to biological diversity; (c) Strengthen their capacity on matters pertaining to the conservation, maintenance and protection of biological diversity; (d) Promote the exchange of experiences and knowledge; (e) *Promote culturally appropriate and gender specific ways in which to document and preserve women's knowledge of biological diversity*;" |
| April 2002<br>http://www.cbd.int/decision/cop/?id=7184 | **Annexes I and II to COP decision VI/10;**<br>*...on gender as a social factor that may affect traditional knowledge*; |
| February 2004<br>http://www.cbd.int/decision/cop/?id=7738 | **COP decision VII/1:**<br>11. "*Urges* the Executive Secretary to facilitate the full and effective participation of indigenous and local communities and other relevant stakeholders in implementing the expanded programme of work on forest biological diversity by *developing local capacities and participatory mechanisms, including women, in assembling, disseminating, and synthesizing information on relevant scientific and traditional knowledge on forest biological diversity*;" |
| Adopted in May 2000<br>http://www.cbd.int/traditional/pow.shtml | **Programme of work Implementation 8(j) CBD :**<br>**General Principles:**<br>"*Full and effective participation of women of indigenous and local communities in all activities of the programme of work*;"<br>**Task 4 (e):**<br>"Promote culturally appropriate and gender specific ways in which to document and *preserve women's knowledge of biological diversity;"* |

The above table shows that from the preamble of the text of the Conventions, to recommendations by the SBSTTA and decisions of the Parties, as well as the work of the working group on article 8(j) even before the GPA came into being, there was significant

evidence of the recognition of the importance of women's knowledge of biodiversity and agrobiodiversity and the need to pay special attention to this area. Despite the rhetoric, there were no guidelines on how to deal with gendered knowledge, hence the creation of the GPA.

The CBD Gender Plan of Action is a comprehensive document that embraces the concept of gender mainstreaming, described by the United Nations Economic and Social Council in 1997 as:

> A strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of the policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated (UNDP Fact Sheet, n.d.).

Gender mainstreaming is understood by the CBD to be a methodology that "aims to transform unequal social and institutional structures in order to make them profoundly responsive to gender" (UNEP & CBD, 2008: 5). It is therefore a methodology for achieving gender equality that recognizes the inherent power relationships that prevent women and men from participating equally in the protection and management of biodiversity, and ultimately in poverty alleviation and sustainable development (Ibid: 5).

Recognizing the often slow progress on gender mainstreaming in organizations, especially in the environment sector where some gender policies are in jeopardy of being reversed due to the fragmented and superficial implementation of these policies (Ibid: 5), the CBD Gender Plan, therefore proposes a holistic approach to gender mainstreaming, from the actual drafting of the plan, to the methodology, and the programme of implementation. In order to further understand the comprehensive nature of the GPA, I will expand upon these three areas below.

The plan was drafted in a joint effort which focused on surveying and including inputs from staff of all divisions of the CBD, as well as the participation of United Nations Environment Programme (UNEP), Women in Environment and Development Organization (WEDO), The Global Environment Facility Small Grants Program (GEP SGP) and the United Nations Development Program (UNDP) among others (Ibid: 6). The plan also drew upon several established documents and plans of similar institutions and international partners such as: UNEP, Food and Agriculture Organization (FAO), International Labour Organization (ILO), United Nations Development Fund for Women (UNIFEM), International Union for the Conservation of Nature (IUCN), the Norwegian Agency for Development Cooperation, the Swedish International Development Cooperation Agency, and the Swiss Agency for Development and Cooperation (Ibid).

The methodology used to frame the plan is based on a model called "the web of institutionalization" (Levy 1999). This model posits that within *the web of institutionalization* there are elements, such as research, planning, staff development, political commitment, delivery of programmes and resources etc. (UNEP & CBD, 2008: 7), which represent sites of power but at the same time are interrelated and ultimately reinforce each other (Ibid). These elements are encapsulated by different spheres: policy, organizational, delivery and constituency. The spheres are also interrelated and are sites of activity of groups of peoples attempting to operate and shape the associated elements (Ibid: 6).

Following Page: **Table 3.3: The Gender Plan of Action Spheres and Targets**

**A. Policy Sphere:** Building a policy framework that will support the mandate, strategy and resources to ensure gender mainstreaming in the implementation of the Convention.

***Target 1:*** *Making gender and biodiversity a strategic priority of the Convention*

***Target 2:*** *Securing ongoing commitments from funders to support gender and biodiversity*

***Target 3:*** *Secure high-level commitment for gender and biodiversity within the Secretariat*

**B. Organizational Sphere:** Addressing gender equality in staffing at the CBD

***Target 1:*** *Establish a body within the Secretariat to support gender mainstreaming – appoint a full-time gender focal point (GFP)*

***Target 2:*** *Strengthen gender-specific capacities of all Secretariat staff*

***Target 3:*** *Ensure gender equality is reflected in human resource management*

***Target 4:*** *Increase awareness of responsibility of all staff for gender mainstreaming*

***Target 5:*** *Develop indicators to measure the extent of gender mainstreaming within the Secretariat*

**C. Delivery Sphere:** Ensuring that a gender perspective is present in the formulation and implementation of the CBD including in the underlying theory, methodology and applied research.

***Target 1:*** *Collect and disseminate gender-biodiversity related information*

***Target 2:*** *Link gender, biodiversity and poverty eradication*

***Target 3:*** *Identify, develop/improve and promote gender/biodiversity implementation tools and methodologies*

***Target 4:*** *Establish the basis for Parties to the CBD to integrate a gender perspective into the national biodiversity planning processes*

**D. Constituency Sphere:** Mobilizing partners and building on existing efforts, best practices and lessons learned.

***Target 1:*** *Build partnerships and establish networks to promote the mainstreaming of gender within the CBD*

***Target 2:*** *Link the CBD Gender Plan of Action with the UN System's Activities*

***Target 3:*** *Build awareness of biodiversity issues among gender and women's organizations*

***Target 4:*** *Build capacity of women, particularly indigenous women, to participate in CBD processes and decision-making* (GPA: 8-13).

The holistic nature of the GPA is represented above: from ensuring that the policy framework of the Convention supports gender mainstreaming, and reflecting that policy in the CBD Secretariat and Convention Bodies staffing practices; to applying a gender perspective to delivery of programs and research, and creating partnerships with various organizations within the UN system and without in order to build on best practices.

The Gender Plan then gives details of actions or steps to take to implement the various targets and indicators to measure progress. An example particularly related to our discussion of the global flow of gendered ecological knowledge is Target D-4 as follows:

**Table 3.4-Example of Target, Action/Steps and Indicators of the Gender Plan of Action** (UNEP & CBD, 2008: 20)

| Target | Action/Steps | Indicators |
|---|---|---|
| Build capacity of women, particularly indigenous women, to participate in CBD processes and decision-making | Conduct a capacity building needs assessment | · A capacity building needs assessment carried out |
| | Hold preparatory meetings and training for women, particularly Indigenous women leaders, prior to each COP and COP-MOP | · Number of women participating in COP and COP-MOP<br>· Impact of the training in quality of participation of women during COP and COP-MOP. |
| | Enhance support for capacity building on biodiversity and gender implemented by indigenous women's alliances and other relevant gender organizations | · Budget allocation and technical assistance for capacity building on biodiversity and gender for indigenous women's alliances and other relevant gender organizations |

This is an excellent example of support for gendered ecological knowledge with clear steps and indicators that are effective and easy to measure. This target and related actions would clearly, for example, respond to the conclusion made by Vazquez Garcia (2008) in her study of the Nahuas and Popolucas of Veracruz, Mexico: that capacity building is essential in order to give the knowledge indigenous women have a voice and in order to empower them (see page 45 above). Further, the recommendations of Pfeiffer and Butz (2005) and Zweifel (2001) reflect the need for improved participation of women in decision-making and research and design of programs affecting them (see pages 48-49).

The Gender Plan of Action concludes by acknowledging that this document is a "first attempt to mainstream gender comprehensively throughout the organization" and recognizes that the document will continue "to evolve according to changing institutional, political, and global and regional realities" (UNEP & CBD, 2008: 22).

As a first document on the subject of gender mainstreaming the CBD Gender Plan is impressive. From the drafting of the document to the detailing of the targets, actions and indicators, it is clear that a great deal of thought and work has gone into this document. It is important to see how this document compares to the gender plans or policies of the NGOs included in this study in order to analyze its contents. In the next chapter I shall turn to this task which will also serve to create a framework for the evaluation of interviews and final conclusions.

***3.11 Biodiversity, Knowledge and Gender in CBD – Analysis and Concluding Remarks***

This chapter has explored the concepts of biodiversity, traditional ecological knowledge and gendered ecological knowledge. The concept of biodiversity and the concerns over the increasingly significant loss of biological resources have been in the spotlight on the global stage since the 1980s. The development of the CBD in the last 18

years is evidence of a global consensus on the need to take some action in order to prevent a catastrophic decline in biodiversity. These discussions have stepped outside of the norms of state centered international law and have called on global collective action, sustainable development and equal sharing of the benefits of biodiversity. The CBD discussions are evidence of an evolution in international law which strays from a purely procedural, state centered positivist approach; instead it embraces a more naturalist, moralistic approach similar to the Grotian philosophy of international law.

The increasingly important role of civil society, including indigenous peoples, in these discussions (to be expanded upon in the next chapter) is evidence of the synergistic effects of globalization and supports both Pieterse's hybridization theory and Appadurai's theory of the increasing importance of the role of civil society in globalization. How these events and their related concepts intersect with respect to Beyer's queries on social conditions, power relations and the balance between purities and hybrids is something I will explore in the conclusions.

From the comprehensive *Global Biodiversity 2* and the 2010 Biodiversity Target framework and headline indicators, to the National Biodiversity Strategic Action Plans, the Biodiversity Indicators Partnership and Biodiversity for Development initiatives, one can see the evidence of an increased effort on behalf of the parties and various convention bodies to expand upon the discussion of biodiversity, as well as a concerted effort to implement the various articles of the Convention. The COP and Convention Bodies are quite unique in their active outreach programs which endeavour to encourage states to prepare biodiversity strategies and implement them. Civil society is involved in every step of these initiatives; the COP draws on a growing, wide range of NGOs, UN agencies, and other international

organizations, provides ample opportunity to meet and discuss the issues, and remains open to their input (interview with Canadian TAN).

Within this wide group of civil society are organizations representing indigenous groups including the Permanent Forum on Indigenous Peoples at the UN. The various documents and recent COP-9 decisions are certainly evidence of a wide ranging discussion on the role of Indigenous peoples and local communities in the maintenance of biodiversity. Within this discussion, the high value placed on the ecological knowledge held by these groups is apparent. It is important to note that the COP refers to "traditional knowledge of Indigenous people and local communities," making it clear that they do not believe Indigenous peoples have exclusive rights to traditional ecological knowledge and, by the same token, the opposite would apply: that sound ecological practices are not a part of every Indigenous person or community, as differences in socio-ecological practices exit in every community. There does seem to be, on the other hand, a general acceptance that those communities who have lived with TEK for millennium, have done so while maintaining a balance between their society and the ecology they are dependent upon. Their ability to do so is highlighted in various documents and COP decisions as something we, in the West, can learn from but at the same time must show respect for by honouring the concepts of prior informed consent and self-determination.

As discussion on TEK and IK progress, the concepts of prior informed consent and self-determination will have to be expanded upon in the context of biodiversity and its related knowledge. The recent COP-9 decisions are a step in the right direction calling for prior informed consent with respect to the collection and documentation of TEK and the need for capacity building to ensure that the indigenous and local communities holding this knowledge are able to make informed decisions regarding how their knowledge and

innovations are used. The fact that these statements are taken seriously is indicated by COP-9 decisions requiring: a) Development of elements of sui generis systems for the protection of traditional knowledge, innovations and practices; and b) The Elements of a code of ethical conduct "*...to ensure respect for the cultural and intellectual heritage of local communities relevant to the conservation and sustainable use of biological diversity*" (see COP-9 decisions, page 85). In addition, a clear, measureable set of indicators for Focal Area #5 (*Protecting traditional knowledge, innovations and practices)* is a priority and of utmost importance in achieving the implementation of Article 8(j).

Finally, the implementation of Article 8(j) with respect to TEK and its relationship to biodiversity cannot be fully realized without considering gendered ecological knowledge. The drafting of the *Gender Plan of Action of the CBD* is the first step in the recognition of this fact. This document takes a comprehensive look at gender and biodiversity from recognizing the distinct roles women and men play in their environments to realizing that at all levels gender equality is imperative for poverty reduction and sustainable development. The CBD gender plan, therefore, approaches first the staff and divisions of the CBD in implementing a gender focus; those who work in the Convention bodies and who work to implement the convention must be fully aware in order for gender equality to be a reality. From seeking to establish a cohesive organizational outlook on gender to making sure this strategy is reflected in policy, research, outreach and collaboration, the CBD gender plan has created viable and dynamic document to guide their efforts.

Gendered ecological knowledge is not defined in the CBD gender plan. Nevertheless several targets that will lead them to this definition are set. First, that of: "Collect and disseminate gender-biodiversity related information" (UNEP & CBD, 2008: 18). This target is expected to be reached by the following activities: Finding out who is doing what in the

area of gender and biodiversity; collect and disseminate gender biodiversity case studies and identify and publicize gender-biodiversity related events (Ibid: 18). This initiative combined with the target of "building the capacity of women, particularly indigenous women, to participate in CBD processes and decision-making" should certainly lead to a comprehensive definition of gendered ecological knowledge and eventually advance the CBD's understanding of the relationship between biodiversity, local and indigenous knowledge and gender.

# Chapter 4: Civil Society: On TEK and Gender

## *4.1 Introduction*

The previous chapter explored biodiversity, traditional ecological knowledge and gendered ecological knowledge as concepts, and as themes within the text of the CBD and the work of the COP and various advising bodies of the CBD. Evidence produced demonstrated that significant progress has been made on global policy making in the realms of biodiversity and TEK. By contrast, policy on gender and more specifically, gendered ecological knowledge is lagging behind somewhat. A gender plan has only very recently been put in place and a concerted effort to implement this plan is underway at the CBD Secretariat, and in the advising bodies and parties of the Convention.

In order to fully appreciate the channels of communication on women's ecological knowledge it is now necessary to examine the role of civil society in the capture and transfer of such knowledge. Therefore, in this chapter I explore the role of civil society on the global stage; how civil society organizations relate to TEK; how NGOs approach gender policy; and how their approach compares to that of the CBD.

## *4.2 Civil Society on the Global Stage*

Although the definition of civil society is characterized by Trent (2007) as "slippery," it is generally considered to mean, "international non-governmental organizations which have relationships with international institutions [and are] working in the public interest" (p. 179). The "slippery part" refers to attempting to qualify as civil society, market institutions that may work in the public interest, as well as some transnational corporations who may be working in the public interest (generally transnational corporations are excluded

as they work in their own interest); NGOs that use violence are also excluded from the definition of civil society.

In the last two decades the exponential growth of civil society organizations has produced an emerging global force that has largely replaced governments and intergovernmental institutions as the main actors in international relations (Commission on Global Governance, 1995: 32-35 cited in Trent, 2007: 179). International NGOs numbered 176 in 1909, grew to 28,900 in 1993 and in 2007 were estimated to be over 50,000 (Trent, 2007: 179). As Trent describes, they fulfil many functions:

> ...channelling the interests and energies of many associations outside government; and offering knowledge skills, enthusiasm, a non-bureaucratic approach, expertise, a grassroots perspective, voluntary contributions, administrative efficiency, and flexibility... [as well] many international non-governmental organizations have consultative status in ECOSOC and attend UN summits on an ad hoc basis...

The way NGOs function has also changed significantly over the last decades as they are involved in every aspect of intergovernmental decision making such as policy making, operations, politics, advocacy and delivery of programs (Ibid: 180). The relationship having moved from a more "formal and ceremonial" role to become "political and operational" (Forman and Segaar, 2006: 216 cited in Trent, 2007: 180).

Trent also exposes the weaknesses of NGOs, characterizing them as often lacking "a clear hierarchy, membership and established organizational and governance mechanisms" (Trent, 2007: 180). He also criticizes northern NGOs for dominating global agendas and practices and for being less democratic and accountable as well as fragmented, leading to the lack of ability to present a united front (Ibid: 180-181).

### *4.3 NGOs and Local Knowledge*

The domination of global agendas by NGOs is particularly of interest in regards to local and indigenous knowledge (Dumoulin, 2003). Dumoulin describes local knowledge as a category that has been constructed by "actors with an international understanding of the problems; actors translating localised knowledge into the "global" discourse of science." (p. 593-594). This leads to cultural blind spots (such as those we discussed above with regards to gendered ecological knowledge) as what is given prominence as local knowledge in the global arena is "a range of spot-lighted fragments...by individuals [and NGOs] with their own particular focus of interest" (Ibid: 594).

Dumoulin concedes that local knowledge does exist in reality and the above should not be taken to mean that it exists only "by virtue of international debate" (Ibid: 594). He is more interested in "studying the validation of "local knowledge"...to consider how each of the actors present, each with its own agenda, contributes to the forging of the social representations to which such knowledge refers" (Ibid: 594). In this way, Dumoulin believes that various NGOs and ENGOs (Environmental non-governmental organizations) should be evaluated for the particular position they hold in a network of transnational organizations and how, given their global agendas, they may have contributed to the definition of local knowledge.

In the case of Mexico, Dumoulin discovered that the highest-profile ENGOs – who are involved in the conservationist movement and were involved in the creation of nature

reserves in the 1990s – "only sought to advance the indigenous knowledge issue as a means of justifying nature reserve policy at an international level" (Ibid: 598). He describes these ENGOs as being similar to transnational corporations in the way they are vertically organized and how they manage projects; their approach being more technical than political, often specializing in a single issue (Ibid: 598-599).

Dumoulin compares the role of global ENGOs to that of TANs (transnational advocacy networks) which he defines as "network-based organizations that mount campaigns aimed at criticizing and changing the dominant world order in the name of eco-activism" (Ibid: 600). These organizations are more focused on multiple issues and tend to defend marginalized rural populations, farmer's rights, and indigenous peoples rights when it comes to supporting ecologically sound practices, preventing bioprospecting on indigenous lands and the defence of intellectual property rights (Ibid: 600-601).

Dumoulin's findings regarding TANs are important to note in relationship to my discussion of the transfer of knowledge via NGOs to the CBD. He discovered that although the resources of TANs are limited, they have nonetheless played an active part in discussions regarding Article 8 (j) concerning local knowledge at the various Convention meetings. Often their efforts have helped bring the issue of safeguarding of biodiversity onto national agendas of countries of the south, creating a discussion on possible law-making initiatives to protect biodiversity and its associated knowledge of local and indigenous populations. It is important to note that Dumoulin says that "their campaigns rely heavily on information circulating on highly active, mainly internet-based networks" (Ibid: 601).

The evidence on the role of NGOs in the transfer of TEK above, in particular the role of TANs, gives credence to Appadurai's theories (Chapter 1) on the nature of "grassroots globalization." Civil society is increasingly playing a role in the transfer of knowledge that may, otherwise, remain absent from the global stage. This important role is in turn forcing the doors of international law to increasingly open up to the views of NGOs - the meetings of the CBD being one of the most open at this point. As the doors of international law open up, international law itself is being changed (or hybridized). As the CBD increasingly accepts the viewpoints of many, and not just the states having ratified the Convention (even though they ultimately govern the Convention), the CBD itself (through decisions and amendments by the COP) is evolving from a state centred body of law towards the naturalistic tendencies of Grotius' philosophy of law including taking on a decisive moralistic tone especially regarding the use (and or possible abuse) of TEK as witnessed in the recent COP-9 decisions regarding prior informed consent and guidelines for governments on ethical conduct when collecting TEK (p. 85 and p. 87).

More recently attention has been focused on the gender aspects of biodiversity knowledge, both within civil society and through the COP and advising bodies of the CBD. In order to understand the channels of communication regarding gendered knowledge of biodiversity, I will first compare various elements of the Gender Action Plan of the CBD to the gender policies and plans of various Canadian NGOs.

### *4.4 Gender Policies of Canadian NGOs and the CBD: A Comparison*

The CBD gender plan was influenced by various organizations including civil society as stated earlier on page 97. Most of the non-governmental organizations involved were of the international environmental type, or ENGOs, as Dumoulin described them. In order to

understand the flow of communication of gendered ecological knowledge it is necessary to compare the policies of major Canadian NGOs and TANs, who are working with Latin American rural communities, to that of the CBD. If the policies represented opposite sides of the spectrum, then one would expect that the communication would be difficult. How do NGOs view gender? How do they view women in development? Do they emphasize women's role in the preservation of agrobiodiversity and biodiversity? How do NGOs approach the collection and dissemination of gendered ecological knowledge? As these are the organizations I have decided to focus on for this study, it is important to compare their policies regarding gender and biodiversity in order to fully appreciate the channels of communication between Canadian NGOs and the CBD.

What follows is Table 4.1which summarizes the various aspects of the Gender Plan of Action of the CBD and how they compare to policies and plans of major Canadian NGOs or TANs included in this study.

**Table 4.1:**

**Comparison of the Gender Plan of Action of the CBD to that of NGOs Interviewed**

| **Aspect of CBD Gender Plan:** | **Appears in NGO's or TAN's Gender Policy?** | **Aspect of NGO or TAN Gender Policy that is missing in the CBD Gender Plan:** |
|---|---|---|
| Defines Gender Mainstreaming | Not under this specific title but the various elements are there according to the definition of gender mainstreaming | Relates gender mainstreaming to that of "gender justice": focus on women's rights, discrimination against women, violence against women and empowering women. |
| Collects and disseminates gender-biodiversity related information | Most gender plans do not speak directly to the collection of gender-biodiversity related information, but programs and projects of NGOs working in rural areas do collect related information; and research of TANs working on biodiversity and agrodiversity issues does the same. | Information currently available on most NGO and TAN web sites on gender and agrobiodiversity. The CBD web site pertaining to "women" is not yet developed as funding has not been available (communication with person interviewed at the CBD Secretariat). |
| Links gender, | Gender plans do link concept of gender | |

| | | |
|---|---|---|
| biodiversity and poverty eradication | and women's rights to that of poverty eradication but not specifically to biodiversity. But biodiversity does come through as an issue related to gender in programs and projects; and in research of TANs | |
| Identifies tools and methodologies to promote gender-biodiversity | Tools and methodologies exist such as: gender analysis of all programs and activities, support to women's organizations and movements. | CBD web site pertaining to women as a tool needs to be fully developed. Currently hidden, no direct link to it on main page of CBD web site. Gender Plan difficult to find on CBD web site. |
| Builds capacity of rural women, especially indigenous women, to participate in the projects and processes of the organization | Not specifically addressed in gender plans other than to generally indicate that learning is necessary to develop and share good practices from the local to the global level. But it is obvious from programs and projects that a significant focus is placed on indigenous and rural women in agriculture, health care, education etc. This experience in rural villages provides information and knowledge which helps to shape projects and processes (communication with NGO interviewed). | Most NGOs focus on women on their web sites and many case studies exist on web sites of NGOs on indigenous women in development, specifically with respect to agriculture, seed saving, and health and education. |
| Built in set of indicators or way of monitoring progress in a gender plan | Most gender plans state that monitoring and evaluation of programs will be undertaken but no clear set of actions/methods or indicators are present in the gender plans/policies | |

As the table above shows, most of the elements of the CBD gender plan are represented in general in the gender plans and policies of Canadian NGOs and TANs. The CBD's plan is more specific to gender and biodiversity but this focus is to be expected. Although the relationship between gender and biodiversity is not explicit in the gender plans of NGOs, one only has to take a look at their program or project work in general to realize that NGOs mostly – as TANs are less likely to work on projects in rural areas but are more oriented towards research that supports their role as activists and lobbyists - are well ensconced in the nexus of gender and biodiversity.

Many NGOs have an explicit focus on empowering women as a program initiative. Although this does not speak to a "gender focus" (as it implicates only one gender), there are nonetheless very important reasons for this "female focus" including the hitherto disenfranchisement of most rural women of developing countries.

It is important to recognize the close similarity in the "spirit" of the gender plan of the CBD with the policies and plans of Canadian NGOs and TANs: a common recognition of the importance of supporting women's equality in the eradication of poverty, of the necessity to give rural women a voice, of the necessity to value rural women's ecological knowledge and the role it plays in maintaining households, families and communities. This alone forms a common perspective and a platform from which communication and collaboration can be built. The current status of this communication and collaboration is something that will be explored in the next chapter on the interviews with NGOs and the CBD.

Finally, it should be said that although TANs do not necessarily work on specific development aid projects, they do work closely with their NGO counterparts and exchange related information and knowledge on common issues regarding gender and biodiversity and also proceed to lobby various international organizations, including the bodies of the CBD, as a united front (interview with NGO and TAN persons).

### *4.5 Concluding Remarks: On Civil Society, Globalization and the Nexus of Gender*

The exponential growth of civil society organizations and the rapid development of global communications have facilitated the influence of NGOs as major players on the global stage. The experience of many NGOs in rural communities of developing countries has enabled them to bring a stronger voice advocating for justice for marginalized populations to the international arena. The sheer number of civil society organizations

involved in international negotiations – estimated to be over 50,000 in 2007 and described as the main actors in international affairs (Trent 2007) - speaks to the change in global governance that Pieterse and Appadurai both believe is a part of the process of globalization.

Appadurai (2000) calls this "grassroots globalization" or globalization from below; referring to a ground swell of alternative ideas and viewpoints that makes its way onto the global stage. Pieterse (2004) similarly points to the increase in the variety of forms of political organization which help to open space, both physical and mental, to alternative epistemologies. Beyer would ask us to consider what conditions may have set the stage, politically, socially and economically, for the transformation of civil society into a new global actor. And how have power relations changed as a result? I shall turn to these questions in my conclusions but suffice to say for this chapter that a definite shift is happening. One can no longer consider NGOs as marginal.

Trent (2007), in fact heralds civil society as the vanguard of a new international order. He sees the UN system as broken, bogged down in the self-interest of states and marred by state politics. Trent feels only civil society has the competence, resources, and ethical principles to transform our international institutions. As Trent succinctly states: "Governments react to threat and opportunities. Civil society entrepreneurs act on foresight and principle. Democracy and human rights cry out for such leadership" (p. 259).

Within the realm of civil society and globalization there is increasingly more room to explore and discuss gender issues. Gender mainstreaming may be slow to be implemented in many organizations, but the concern over including a gender approach is evident in every major UN organization and most NGOs. Most UN agencies and Canadian NGOs studied have a solid gender plan or policy in place and indicate that poverty cannot be fully addressed without paying attention to gender equality. Many of these organizations have

specific programs dedicated to women and feature women's issues on their web site and in their main publications, such as annual reports.

Ironically, the NGOs that are the least cognisant of gender and do not have solid gender plans or policies in place are the large, overtly political environmental NGOs (with the exception of IUCN – interview with CBD and TAN). Despite the rhetoric of these ENGOs on the subject of ecology and environment, they are the least likely to have made the connection between biodiversity and gendered ecological knowledge. As Dumoulin discovered, ENGOs are focussed on a single issue. Being tightly vertically organized (hierarchical) ENGOs therefore do not always consider information provided by other NGOs working in the same region or on the same issue. This practice, though, seems to be changing in the arena of international law and more specifically in the COP meetings of the CBD (interview with person from TAN). The consistent efforts of the CBD Secretariat to bring civil society organizations together, including ENGOs on the margins (i.e. Greenpeace), have resulted in more communication between NGOs, TANs and ENGOs.

Therefore, the gender policies and plans of NGOs, TANs and the CBD provide a solid basis for the inclusion of a gender focus that ought to bring attention to the nuances of gendered ecological knowledge of biodiversity. The increasing presence of civil society on the global stage and most importantly in the forums and meetings of international law certainly would indicate that the opportunity is there to make the connection between biodiversity and gendered ecological knowledge. But, is this happening? In order to shed some light on this issue, in the next chapter I shall present the findings of the interviews with Canadian and international NGOs and TANs as well as discussions held with the Secretariat of the CBD.

# Chapter 5: Perspectives of NGOs and the CBD

## *5.1 Introduction: Methodology and Justification*

NGOs working in rural Latin American communities have a unique "on the ground" perspective of the existing socio-economic conditions and challenges facing rural communities that are working towards sustainable development. Many NGOs are intricately involved in supporting projects that relate to women's ecological knowledge such as agricultural, horticultural, health, and educational activities. NGOs are well positioned to fully understand the issues implicated in the capture and transfer of ecological knowledge and are able to advocate for rural women's ecological knowledge on the world stage.

Therefore, in order to provide further insight into the transfer of knowledge and the channels of communication between rural Latin American Communities and international law, I conducted semi-structured interviews with representatives of NGOs and of the CBD.

The interview questions, found in Annex II, were open-ended and drew on the results of the case studies in Chapter 2 and of the analysis of key concepts: biodiversity, TEK and the role of the CBD and civil society in the context of gender found in Chapters 3 and 4. Questions were designed to obtain participants' perspectives on the amount of time and effort that is put into understanding the gendered nature of ecological knowledge and in particular how much attention and effort went into gathering and communicating (to the CBD) women's ecological knowledge of Latin American rural communities. I interviewed one person from each NGO; in order to guarantee anonymity the person chosen was left up to the discretion of each NGO. I also interviewed one person from the Secretariat of the Convention on Biological Diversity.

Originally, I had identified seven major Canadian NGOs to interview (including two that could be categorized as Transnational Advocacy Networks), but due to the fact that four of the seven originally selected were unable to participate, three more organizations were approached. Two of the new organizations approached were unable to participate; the one that agreed is an International TAN. Therefore a total of two NGOs and two TANs were interviewed.

It should be noted that all the NGOs declining to participate cited "lack of time" as one reason and/or "not working in this area" as another. When I asked them to qualify what they meant by the latter comment, the response was that they had not defined gendered ecological knowledge and/or were not communicating to the various bodies of the CBD on this matter. Most of the NGOs that declined did, nonetheless, have gender plans in place and placed a high priority on women's empowerment in developing countries as a prerequisite to eradicating poverty. The declining NGOs gender plans and their approach to gender was, therefore, considered in my analysis in Chapter 4.

Originally, I expected to be able to interview members of participating organizations in person, but this was only possible in one case. All but one of the interviews were conducted by phone, three of the organizations were located far enough away that a face-to-face interview was not possible. Also given the time constraints of the participants, most preferred to be interviewed by phone.

All of the participants interviewed were very open in their discussions with me and were quite willing to share their views on the subject matter. It should be noted that they were not particularly concerned with remaining anonymous, preferring instead to be heard as part of a group that wishes to emphasize the role of civil society and gendered ecological knowledge. Nonetheless, according to ethics guidelines, their anonymity is guaranteed: no

names of organizations or people used in this study are revealed with the exception of naming the Secretariat of the CBD as it was the only organization in international law that was interviewed.

The organizational representatives were originally all asked the same questions (Appendix A). It was necessary, however, to change some questions for the TANs, as they do not participate directly in projects in developing countries but are more involved in networking, research and advocacy work (also found in Appendix A). The new questions were also asked to the NGOs so that all organizations were asked the same questions.

### *5.2 Summary of Results of Interviews with Respect to Main Themes*

*On Biodiversity*

All organizations interviewed were very cognisant of the importance of women's knowledge in the conservation of biological diversity. The NGOs interviewed were concerned that in some locations due to migration, civil war and a loss of cultural diversity, there is a decline in knowledge on biodiversity. Women's role in the conservation of agrodiversity was considered essential and NGOs supported programs on seed saving, organic farming, and the maintenance of local cultivars. There was also a keen awareness of the importance of home gardens in the conservation of biodiversity as well as the role they play in rural household survival. The NGOs interviewed support women's marketing groups, co-ops and advocacy groups with technical assistance or educational and organizational support activities. This assistance helps to support women's activities related to biodiversity. Both NGOs were aware of women's role in gathering medicinal plants and commented on the knowledge of rural women in this domain, which they said often far outweighs that of the men.

*On Women's Ecological Knowledge*

All organizations interviewed, including the Secretariat of the CBD, had not yet defined gendered ecological knowledge. Nonetheless the interviewees were all aware of the need to do so, and of the need to document women's ecological knowledge. One NGO stated it had already taken steps to improve their methods of systematic documentation of women's ecological knowledge in order to further support women's empowerment and the autonomy of the various communities in which they work. Both NGOs spoke of the natural exchange of knowledge and information regarding biodiversity that happens between local communities in the same country, or between countries of the same region. For example, one NGO spoke of seed exchanges that happen at local markets and agricultural fairs. Seed exchanges also take place at "best practice" workshops and meetings of rural agricultural groups (which may happen between countries). In one agricultural fair, an NGO talked of the exchange of seeds of over 92 varieties of medicinal plants.

One NGO said the need for more women agronomists is apparent to support and train other women in the transfer of women's agrobiodiversity knowledge. A positive sign of the local transfer of knowledge is the number of women involved in rural agricultural networks according to both NGOs interviewed.

*On Communicating with the CBD*

Of the four organizations interviewed, both TANs and only one NGO were involved in lobbying the bodies and parties of the CBD. The one NGO that did not attend any meetings of the CBD parties and bodies was well positioned to offer a great deal of information, having significant experience on the ground in rural Central American communities. Unfortunately, funding was an issue and attending such events is not in the budget at the present time.

Of the other three, all spoke highly of the openness of the COP meetings and of the Secretariat of the CBD to the participation of civil society. One person interviewed at a TAN described the civil society alliance of the Secretariat of the CBD as, "the best I've seen in the UN forum since the 1960s." This person has been very pleased with the progress their organization has obtained in the COP meetings, citing several successful decisions supporting their lobbying efforts (on behalf of rural farmers).

One of the TANs interviewed voiced a concern over the lack of understanding of gender issues amongst the male dominated meetings of the COP. This person felt there was still a great deal of "boutiquing or ghettoizing gender issues," that very few women from southern countries were getting to the meetings of the various bodies of the CBD, and that most indigenous women were fed up with indigenous men who control the agenda and who do not speak for the women. This person felt that the culture of male dominance and lack of a profound understanding of the need to focus on women's knowledge is why the implementation of the gender plan of the CBD has not been made a priority to receive core funding.

The person interviewed at the Secretariat of the CBD echoed these concerns and voiced the necessity of a culture change in regards to the acceptance of a gender focus. This person, though, felt that the collaborative efforts between the Secretariat and other UN agencies as well as the adoption of the Gender Plan of Action by the COP were indications of advances made in gaining acceptance for a gender focus. Several new initiatives, including guidelines on gender mainstreaming for the National Biodiversity Strategy Action Plans are a step in the right direction.

*5.3 Analysis*

The above summary helps to reinforce some of the findings of my research. As indicated by the comparison of the gender plans or policies of NGOs and the CBD, there is a concerted effort among NGOs interviewed to place an emphasis on women in agricultural, horticultural, forestry, health and education initiatives. Both the Canadian NGOs interviewed work in areas where due to past civil strife and out migration of men in search of work, women are the main persons responsible for agricultural work. This finding supports evidence presented in Chapter 2 by Rimarachin Cabrera, Zapata Martelo and Vasquez Garcia (2001) in their study of the Otomi of San Pedro, Mexico.

Women in rural communities are also understood, by NGOs interviewed, to be the most knowledgeable in terms of medicinal plants, seed saving, and are currently the most active in advocating for their communities right to maintain traditional varieties. This supports evidence given by Kothari's (2003) study on medicinal plant knowledge of the peasant farmers of La Esperanza, Ecuador and of Hoffman's (2003) study of the Arawakan Women of the Guainia-Negro region of the Venezuelan Amazon. The awareness that home gardens play a significant role in the maintenance of biodiversity and in household survival also speaks to most of the studies in Chapter 2.

It is interesting to note that women's increased role in agriculture has benefitted them in terms of programs being directed specifically at women. More women in villages across Central America, through the two NGOs interviewed, are receiving training in organic farming, are provided with credit to purchase livestock, and with support are able to start selling some of the products of their efforts in local markets. Many rural women benefitting from this support have started "women's producer groups." In Honduras, these self-help groups include over 600 rural women. In one publication of the Canadian NGO supporting

this initiative it states: “The women have undergone a process of empowerment whereby they are affirming their own self worth and increasing their participation in their family and community.”

Another initiative from a Canadian NGO is helping support women’s efforts in seed saving. They are helping women across Central and South America save and cultivate traditional crop varieties that are more resistant to disease and hence, in the long run, tend to produce better yields than most varieties introduced by seed companies. Women have been able to resist the onslaught of genetically modified (GM) varieties of corn and potatoes (which have proven to be less resistant than traditional varieties and require far more expensive inputs) which in some countries have displaced traditional varieties. Support for the seed saving practices of women in these communities has led to several becoming active in political movements protesting against GM crops and advocating for the preservation of local varieties.

It is clear from the interviews, and from the documents obtained from NGOs, that there is a keen awareness of the knowledge of agrodiversity and biodiversity of rural Latin American women. This knowledge is currently mostly documented in anecdotal format; stories are collected that show up in promotional material and as evidence of program implementation on their web sites. Although the NGOs interviewed have not implemented a research methodology that collects gendered ecological knowledge there is recognition that this is necessary and a plan to begin such a collection. Documenting gendered ecological knowledge in a systematic way will enable NGOs to provide substantial evidence of the need to take into consideration the gendered nature of ecological knowledge and will enable them to form a united front when speaking at the meetings of the bodies of the CBD. If this documentation happens through participatory research methods, essentially by having the

women who have this knowledge document it, it would also add to their empowerment and support their efforts locally to conserve biodiversity.

Making this research available to the bodies of the CBD, would help implement the GPA and strengthen the case for a gender focus. As this research has shown, the CBD Gender Plan of Action is an excellent foundational document but it still lacks continued and significant support for its implementation. Funding for the Gender Focal Point (GFP, the one and only person in charge of overseeing the implementation of the GPA) has been difficult to obtain. Funding recently obtained is currently for a two year period. The Gender Plan of Action has yet to secure core funding, and up until the Government of Finland stepped in to fund the GFP and the implementation of the GPA, there was very little funding support (person interviewed at the Secretariat of the CBD).

The fact that significant financial support has not materialized in the form of core funding speaks to the concerns of the TANs that gender issues are still considered marginal and treated as such. Nevertheless, the initiative by the Secretariat GFP to go ahead with the drafting of guidelines on mainstreaming gender issues into the National Biodiversity Strategy Action Plans is a step in the right direction that will inevitably open the discussion up to a wider audience and in turn will hopefully gather more support (i.e. from developing country governments preparing NBSAPs) for the GPA.

The perspective of the two TANs interviewed is supportive of my previous findings on the role of civil society in globalization and international law in Chapter 4. TANs are deeply involved with international law and in the case of biodiversity and agrodiversity, mostly with the bodies of the CBD. One TAN that was interviewed has over 40 years of experience lobbying at meetings of the parties of international legal agreements and was very complimentary of the openness of the CBD to civil society. This organization has had

several successes working within the meetings of the Convention and is very positive about the progress achieved. This cooperative atmosphere has also had an effect on some of the more isolated and radical ENGOs, such as Greenpeace, which now regularly participates in the civil society alliance at the CBD.

Despite successes and achievements on certain issues, there is still a general feeling among TANs that gender issues are "ghettoized," that not enough southern women, including indigenous women are attending the COP meetings, and that their voices are not being heard through their male counterparts who are attending the meetings (particularly in indigenous circles). The issues of the day, currently climate change and REDD – Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, dominate the international arena and in order to give women a voice many organizations must frame gender issues in the context of these global concerns. Both the TANs talked to, as well as the Secretariat of the CBD are actively involved in the Global Gender Climate Alliance (GGCA) and the REDD.

The GGCA was formed in 2007 by WEDO, IUCN, UNDP, and UNEP and its goal is "to ensure that climate change policies, decision-making, initiatives at the global, regional and national levels are gender responsive" (GGCA 2007). They are undertaking the following activities to reach their goal:

> 1.) Provide support to UNFCCC and its bodies to ensure that the UN mandates on gender equality are fully implemented.
> 2.) Ensure that UN financing mechanisms on mitigation and adaptation address the needs of poor women and men equitably.
> 3.) Set standards and criteria for climate change mitigation and adaptation that incorporate gender equality and equity principles.
> 4.) Build capacity at global, regional and local level to design and implement gender-responsive climate change policies, strategies and programmes.

5.) Establish a network for learning, knowledge exchange and advocacy on gender and climate change (GGCA 2007).

The REDD initiative was founded in 2008 by the UN and is a collaborative program between FAO, UNDP and UNEP:

> The UN-REDD Programme is aimed at tipping the economic balance in favour of sustainable management of forests so that their formidable economic, environmental and social goods and services benefit countries, communities and forest users while also contributing to important reductions in greenhouse gas emissions. The aim is to generate the requisite transfer flow of resources to significantly reduce global emissions from deforestation and forest degradation. The immediate goal is to assess whether carefully structured payment structures and capacity support can create the incentives to ensure actual, lasting, achievable, reliable and measurable emission reductions while maintaining and improving the other ecosystem services forests provide (UN-REDD 2009).

Currently there is over US$54 million available for projects; the two TANs interviewed as well as the Secretariat of the CBD are trying to ensure some of this money is directed towards ensuring the maintenance of women's role in forest management. One of the documents obtained that speaks to the need to include a gender perspective in the REDD framework, speaks of the different roles of men and women in forest management: while men are more likely to be involved in timber and non-timber forest product harvest and commercialization, women on the other hand, "typically gather forest products for fuel, fencing, food for the family, fodder for livestock and raw materials to produce natural medicines, all of which help to increase family income" (Aguilar et al. 2007). Women also perform different roles than men in planting, protecting or caring for seedlings and small trees, planting and maintaining homestead woodlots and plantations on public lands (Ibid). The recognition of these distinct roles is essential to not only integrating women's unique knowledge, skill and experience but increases the effective implementation of the UN-

REDD initiative, and ensures that women have equal access to available funds and benefit equally from the intended projects (Aguilar et al. 2009).

### *5.4 Concluding Remarks*

The above discussion has shown how the interviews undertaken with NGOs, TANs and the CBD have confirmed previous findings regarding the role of women in rural Latin American communities in maintaining and preserving both biodiversity and agrodiversity. Women in some countries, with the help of NGOs, are enjoying renewed support in their agricultural work. This support is empowering them to stand up for their community's rights to a livelihood that combines the social with the ecological, and that preserves traditional crop varieties and at the same time biodiversity.

Participatory research methods, undertaken often by NGOs, need to be extended to a systematic collection of gendered knowledge of biodiversity in a bid to further empower the holders of this knowledge, and at the same time increase the likelihood that this information will be presented to the bodies of the CBD. This in turn will bolster the GFP's efforts to implement a culture change in favour of more concerted and better funded gender focus.

TANs and the GFP are very active on the global stage advocating in whatever way they can, be it through climate change or REDD, for the inclusion of a gendered perspective. Their efforts are certainly to be commended and will, at the very least, broaden the discussion in order to foster an awareness of how global processes affect men and women in different ways. Bringing the knowledge that NGOs have of Latin American rural communities into contact with the research and advocacy of TANs more often, will certainly create a greater awareness of what gendered ecological knowledge is exactly, and how to communicate and support its value, not only for the women and men who hold this knowledge but for the health of the entire planet.

# Chapter 6: Conclusions

### *6.1 On Biodiversity*

2010 has been designated "the International Year of Biodiversity" by the Secretariat of the CBD. On the home page of the web site dedicated to this special year, it states, "*Biodiversity is life. Biodiversity is our life*" (Secretariat of the CBD, n.d.). Considering the concept of biodiversity only became public knowledge in the 1980s (Oguamanam, 2006), it is quite remarkable the status it has obtained on the global stage in just a few decades. The International Year of Biodviersity web site calls on the CBD member states and civil society partners across the world to reflect on how to meet the challenge of protecting global biodiversity, which is so essential to all life on earth and which humans have the "power to protect or destroy" (Secretariat of the CBD, n.d.).

In this research I investigated the way in which the concept of biodiversity has attained "global star status." It began with the opening for signature of the *Convention on Biological Diversity* at the Rio Summit in 1992, which was immediately heralded as an important document and had wide spread support. The bodies of the CBD have, in the last 18 years, created documents, decisions and plans that reflect a concerted effort to understand this amorphous concept; to understand how, where and why human beings interact with biodiversity and what the impacts of our actions are.

Despite all the rhetoric, there is still, within the CBD documents and associated decisions, a sense of urgency; that time is ticking for all of life on earth. An urgency that is felt in the pressure on the parties to the CBD to create National Biodiversity Strategy and Action Plans, and in the pressing need to develop sound indicators to measure 2010 biodiversity targets under the seven focal areas.

What the deliberations and negotiations related to biodiversity exclude from consideration is giving enough thought to the concept itself: in an effort to control the demise of biodiversity, have we lost all sense of the true meaning of "life on earth?" It is not my intention to pose an existentialist question here, but it is necessary to understand on a deeper level how we (human beings) can come to terms with "life on earth" and question how we can do this while we are still trying to control it.

Despite the fact that within the advising bodies to the COP commendable attempts are made to measure biodiversity, calculate its decline and come up with indicators that measure targets of our progress in stopping this decline, a holistic consideration of biodiversity needs to consider more fully the perspectives of those who *live in* "life on earth." This includes the birds, insects, and animals that are seemingly (from our perspective) oblivious to our musings, and also the men and women who live in or near the forests, fields, mountains, rivers and oceans, upon which their daily existence depends. How do they define biodiversity; how do they view "life on earth?" In my view, this is the question that those involved with the CBD need to ask; and in asking that question "we" need to take a step back from our addiction to the scientific method of measuring and calculating and come to a place where we can fully comprehend the approach to biodiversity of men and women (and other animals!) deriving their existence on a daily basis from "life on earth."

### *6.2 On Traditional Ecological Knowledge*

In coming to an understanding of biodiversity, it is necessary to give credence to traditional ecological knowledge. This research has examined the way TEK has been defined by those in developed countries who are interested in the value of this knowledge, conversely those who hold this knowledge resist the urge to define it - they live it. It is a part

of a world view, linking the ecological with the social and the spiritual; a way of making sense of everyday activities and making sure those activities contribute to the sustenance of their community today and for many generations to come. While this may not be the case for all Indigenous peoples on the planet, in the documents and meetings of the CBD and the UNDRIP, Indigenous Peoples, tribal peoples or rural inhabitants *that have TEK* are commended for their ability to link the social with the ecological and their attention to sustainable ecological practices.

Complimentary words are easy to find, but actions taken to understand and protect this valued knowledge are more difficult to ascertain. The Ad Hoc Working Group on Article 8(j) has been very active in stating the case for the consideration of TEK, and COP-9 decisions have focused on controversial areas such as prior informed consent and self-determination. But, nevertheless, the focal area least developed seems to be that of "protecting traditional knowledge, innovations and practice" and the only agreed upon indicator to measure the targets is still focused on the "status and trends of linguistic diversity and the numbers of speakers of indigenous languages."

In order to fully support the value that TEK presents, there needs to be a concerted effort to pay more attention to documenting ecological knowledge that can be shared and to valuing that knowledge, not only for the populations to whom it belongs, but also with respect to its contribution to the global social, cultural and economic realms. If there is "power in knowledge" then empowering those with ecological knowledge should not be a difficult task. Perhaps the people with the most pertinent ecological knowledge in today's global society are the most "invisible" to those who seek to protect and document this type of knowledge. As the case studies in Chapter 2 have proven, women's ecological knowledge is often overlooked by ethnobotanists, ethnographers and anthropologists.

### *6.3 On Gendered Ecological Knowledge*

This research has provided ample evidence, both from analysis of the case studies on gendered ecological knowledge in Chapter 2 to conversations with NGOs, TANs and the CBD on the same, of the need to focus on women's ecological knowledge. While gendered ecological knowledge implies the study of the differences between men and women's ethno-ecological knowledge, most current research implicated in the study of gendered ecological knowledge focuses on women's ecological knowledge. The reasons for this are twofold: First, until recently men's ecological knowledge was studied and documented as if it represented both men and women's ecological knowledge, therefore there is need to focus on women's ecological knowledge to clearly state the differences; and second, many men in Latin American rural communities are migrating to work and have lost contact with the land (or may have died as a result of civil strife), and therefore women are most often seen as the keepers of a community's ecological knowledge.

A gendered perspective is meant to bring back some balance in the way we view and live in the world. From Shiva's (1989) perspective, it is a way to rebalance the masculine and feminine attributes found in both men and women; the attributes considered masculine (aggression and activity) have for so long dominated world affairs that anything else seems "weak or abnormal." But is it? A gendered approach advocates a remedy to the current imbalance that has privileged the "masculine" attributes over the "feminine."

Most of the authors explored on the subject of gender seem genuinely concerned for finding another approach to the path of the global market economy. Beneria's (2003) points to the fact that global institutions within the market economy often present characteristics that can be described as altruistic, empathetic, reciprocal and caring; the market is not,

therefore inherently rational, cold, and self-interested. It exudes human qualities in all their manifestations, not just aggression and mean spirited profit making!

Women and men who care for the plants that surround them, and who harvest from the fields, forests, rivers, and oceans where they live are part of a cycle of giving and taking. There cannot be any taking without giving and this is deeply understood by those who live with TEK. This is a simple notion, one that if you work with plants in any manner (be it gardening or farming) you come to understand profoundly and never feel the need to question. It is when the taking "overtakes" the giving that the problems begin; there is no longer a balance.

What does the above discussion mean for gendered ecological knowledge? In order to bring some balance back to the world, it is necessary to listen to those who understand this balance between giving and taking; those who have worked hard all their lives to manage their ecosystems in favour of the well-being of their community and of their offspring. Women in rural Latin American communities (and other rural communities across the world) do not see their knowledge as unique or only pertaining to them; in their eyes it is community knowledge, knowledge that must be shared or taught for future generations to survive (this I know from the personal experience of travelling around the world and staying in rural areas).

The evidence gathered in this research was meant to bring a focus to women's knowledge of their ecosystems as a form of knowledge that has, up until recently, remained relatively unnoticed. Noticing women's ecological knowledge is a first step in valuing it and in empowering women in developing countries in their efforts to reduce poverty and provide a livelihood based on the land for their families and communities. Civil society is implicated in this task, especially NGOs working on agricultural projects in rural areas of developing

countries, TANs which lobby international organizations on behalf of rural farmers of developing countries and anthropologists, ethnographers, ethnobotanists and ethnobiologists who initiate studies of rural communities and their ecological practices.

### *6.4 On Civil Society, International Law and Global Channels of Communication*

This research has shown that the global channels of communication are indeed opening up. As evidence produced in Chapter 4 shows, civil society organizations are proliferating and penetrating into the arena of international law. They are politicized and active in all levels of decision making. Appadurai's (2000) grassroots globalization is a reality and civil society is leading the way. Pieterse's (2000) hybridization theory manifests itself in these findings: physical and mental space is opening up globally to consider alternative epistemologies.

In order to understand the nuances of this global condition, it is helpful to consider Beyer's questions: what conditions have set the stage politically, socially and economically for the transformation of civil society into a new global actor? How have power relations changed as a result? My exploration of the changes in international law over several centuries (Chapter 1, 1.2) illustrated how the global political stage has evolved to accommodate individuals and organizations other than states. International law has moved from a state centered, procedural dominated entity, to one that is increasingly open to alternate views and opinions. The bodies of the CBD are exemplary in this respect, witnessed both by the evidence of tremendous work and insight in the documents produced, but also by the experiences of TANs and NGOs working with CBD parties and bodies.

World poverty may be the impetus, socially, for the proliferation of civil society organizations but global communications have enabled these social movements to feed off each other and to create a force that is increasingly powerful. The increasing extremes

witnessed in the global economy, the gap between the rich and poor - despite the growth of the middle class in some developing countries - is still of great concern globally. The international media in the homes of the privileged of developed countries creates a constant reminder of our responsibility toward those less fortunate. Civil society organizations flourish as a result.

But is this leading to a change in power relations? Is civil society able to exert enough political leverage to effect change? These questions require more research in order to determine case by case if, indeed, there is a significant shift in power relations. Are the efforts of civil society in the international arena creating a synergistic effect – is the result (on power relations) greater than each of them could bring to bear individually? The trend given the evidence presented here on the role of civil society in international law may seem positive but more research is necessary in order to determine if a synergistic result in power relations is taking place on a larger scale.

From my research it is apparent that within the bodies of the CBD, a synergy is apparent. Certain actions have come to pass, like the moratorium on "Terminator" seed technology which one TAN would never have thought possible in another era or international legal framework. The CBD represents a new era of international law: open to civil society, concerned for the well-being of the planet and its inhabitants, as well as the distribution of wealth. Without the mixing of global cultures and the proliferation of global communications this may never have happened. The positive aspects of globalization are apparent here.

### *6.5 Concluding Remarks: Gender, Globalization and the Sharing of Knowledge on Biodiversity*

*"You can't stay in your corner of the Forest waiting for others to come to you. You have to go to them sometimes."-Winnie thePooh*

It may seem somewhat odd to start this section with a quote from a children's book, especially given that this is an academic work. But bear (no pun intended!) with me for a few sentences. I want to follow Appadurai's advice and step out of my "academic mode" to explore some thoughts on the overall findings of my thesis and on how it has influenced my "research imagination" (Appadurai, 2000).

I read a book back in the 1980s called *The Tao of Pooh* (by Benjamin Hoff) and I have kept this book in my bookshelf ever since, occasionally referring to its wisdom. The book essentially explains Taoism through Winnie the Pooh, who the author considers to be the ultimate representation of "The Way" of Taoism. Winnie the Pooh is a simple bear; he accepts the ways of the forest and walks though life with an understanding and peace of mind that is enlightened. No one bothers to ask him about the ways of the forest as he just seems a part of it, like one of the trees or plants. If someone did ask him why, he may say, "because" – he does not need any fancy explanation for things. But, if you spend some time with Winnie the Pooh, you come to understand the ways of the forest on a level that needs no explanation, nor measuring or quantifying; and you come to appreciate all that is there. I have often found the words in these pages to be of great guidance, especially when I was caught up in the roller coaster of work and life in the city.

How does the wisdom of Winnie the Pooh relate to a master's thesis on gendered ecological knowledge? Major decisions are being made on issues regarding biodiversity in the meetings of the bodies and parties of the CBD. While every attempt is made to be

inclusive towards the views of civil society and to probe the various scientific minds around the world, there is an element missing – the knowledge and experiences of those who live in the forests and cultivate the fields, and who harvest and gather plants for their families needs - is largely absent. Women in rural communities around the world have for centuries lived with knowledge of their ecosystems that is essential to their community's survival and to the conservation of biodiversity. Now, more than ever, their knowledge needs to inform the global governing bodies concerned with "life on earth."

Gender mainstreaming in organizations and a focus on gender is a step in the right direction but if this process does not open doors for rural women to speak and participate in the meetings of the CBD, then it will be in vain. As Subrahmanian (2003) concluded,

> Gender mainstreaming as a discourse and strategy has opened up critical spaces for starting to resource women's development, and, in some areas, there have been significant shifts. That these shifts do not go far enough may just be ***a reflection of the limitations of the spaces within which these strategies are being played out***, and also a reflection of the enormous difficulty of advocating social change more generally, particularly within current neo-liberal and neo-conservative policy environments (my emphasis) (p. 120).

Globalization and global communications are providing the impetus for an opening up of new spaces in which to discuss gender and biodiversity. These spaces, such as the civil society alliance of the CBD, need to be inclusive of voices that are seldom heard: those of rural women the world over who live with the effects of policies agreed upon in international law.

This thesis has provided evidence of the value of women's ecological knowledge in rural communities in Latin America in Chapter 2. Similar stories can be found in villages all over the world. Women's ecological knowledge is often invisible to the outside world and undervalued. Yet, it is essential to survival of women, children, and men all over the world.

In the introduction to my thesis I hypothesized that: The process of "grassroots globalization" (as described by Appadurai 2000) is providing the impetus for civil society and international law to consider gendered ecological knowledge or women's ecological knowledge; and that civil society plays a key role in disseminating this knowledge. The evidence presented (in Chapter 4 and 5) indicates that this is indeed the case. The impetus is certainly there in the recognition in policy and practice of NGOs and TANs of the importance of gendered ecological knowledge. What is missing is the systematic documentation of this knowledge and concerted advocacy of NGOs, on the part of rural women, in the international arena. Many NGOs and TANs could become stronger, more persistent advocates for the consideration of women's ecological knowledge and could fund rural women to attend the meetings of the bodies and parties of the CBD.

I also postulated that the evolution of international law and its increasing openness to the views of civil society is providing a framework for the collection and dissemination of gendered ecological knowledge globally. By investigating the documents of the CBD in Chapter 3, I gave evidence of considerable progress on deliberations concerning biodiversity and TEK, and on the Gender Plan of Action of the CBD. In terms of policy, this progress is quite impressive. In theory the framework is there, in practice, however there are a few stumbling blocks.

One stumbling block is funding for the implementation of the CBD *Gender Plan of Action.* Without core funding this comprehensive plan will remain just that, a plan. While funding has been secured for a few years, it is necessary to make the *Gender Plan of Action* part of core funding to ensure its continued support. Only then, will there be opportunities for rural women to attend the meetings of the bodies of the CBD.

Another stumbling block is the necessity for a culture change in order to give credence to gender issues. Organizational culture change is slow, but not impossible. The role of civil society in this respect is fundamental. NGOs can facilitate a culture change by focusing on gender (which most of them are already doing), and can assist rural women in expressing their knowledge and points of view by participatory research, as well as the funding of women's groups and of their representatives to attend the meetings of the bodies of the CBD.

Certainly, there are challenges to overcome in the global communication of gendered ecological knowledge. But, in my opinion all the elements are there to overcome these challenges: women's ecological knowledge is becoming more important to the survival of some rural communities in Latin America (and elsewhere); civil society is well poised to document and value this knowledge and NGOs have proliferated into the international arena in a significant way; international law is increasingly open to civil society; and the bodies of the CBD have made a concerted effort to begin implementing the *Gender Plan of Action*.

Perhaps all that is needed is a "Winnie the Pooh approach" - a concerted effort to get out of "our corner of the forest" and discover what is in "the corner" occupied by rural women all over the world. In doing so one must remember Appadurai's (2000) words concerning the research imagination: that in order to find out how others see the world in their terms; we need to encourage and develop "a critical dialogue between world pictures" (Ibid: 8) and leave behind "[our] own ideas about what counts as new knowledge and what communities of judgement and accountability they might judge to be central in the pursuit of such knowledge" (p. 14). Gendered ecological knowledge can further inform international public policy if we have the capacity to listen and learn by accepting this knowledge as

empowering for those who own it, and by being open to and respecting their terms of engagement with the international community.

# Appendix A: Schedule of Interview Questions

1. How does your organization define gendered ecological knowledge?
2. Do you differentiate between the knowledge that men and women have concerning their environments?
3. Is gendered ecological knowledge incorporated into your policies (NGOs) or principles (CBD)?
4. If so, what knowledge is given priority? If not, why not?
5. Who are the sources of this knowledge and how is this knowledge gathered and documented (methodologies)?
6. Do you consider the role of home gardens in rural Latin American villages as sites of important biological diversity?
7. How is women's role in the conservation of agrodiversity approached when considering agricultural development projects?
8. For NGOs: Do you communicate with the CBD on these issues? If so, what is being discussed? If not, why not?
9. For CBD: Which NGOs do you communicate with most regarding gendered ecological knowledge of rural Latin American communities? What are other potential sources of this information (governments, other UN agencies, religious groups etc.)? How do you obtain this information and how is it documented?
10. How are these discussions helping guide the new gender plan of the CBD?
11. Does your organization have any experience in the meetings of the CBD? If so, how would you characterize the interactions you have had with the bodies of the CBD?
12. What do you think of the Gender Plan of Action of the CBD?
13. Do you work with indigenous groups on issues of gendered ecological knowledge?
14. How is the cooperation in general between NGOs in general on issues of biodiversity within the context of the COP meetings?
15. What issues do you work on internationally?

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