Expert Knowledge on Environmental Peacebuilding: the social context of its diffusion in international politics and what it says about it[1]

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Abstract: *In the last two decades, environmental peacebuilding (EPBL) has become a rapidly growing field of research and practice and today, EPBL is embedded in academia, policy making, and education, as well as in practice. The goal here is to learn more about the social complexity and context of the production of expert knowledge on environmental peacebuilding (EPBL) and its diffusion in international politics in the period from 1990s to 2008. It was also discussed what the analysis of social context says about EPBL, and its diffusion. We conclude that as expert knowledge, EPBL emerged in practice, not in academia, and developed within narrow relations in a very small group of conservationists, scholars, and practitioners. Since the end of the 1990s, EPBL has spread globally, being distributed because it has been collectively enacted through relations and mediated by the intersubjective meanings and artefacts such as guidelines, projects, policies, conferences, reports, and books.*

Key words: ***environmental peacebuilding, expert knowledge, social context, diffusion in international politics***

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I. Introduction

Since the 1960s we have been able to observe the increasing attention to the intersection of environment, conflict, peace, and security. This nexus, once entitled "environmental security", later became known as "environmental peacebuilding" when it became connected with thinking about building more peaceful relations through environmental cooperation, natural resource management, climate change adaptation, and disaster risk reduction. The core of environmental peacebuilding (EPBL) creates the idea that conflict and cooperation can co-exist, and that the cooperative planning, management, and use of environmental resources is able to support an increase in trust, communication, and interaction between opposite parties and thus transform the risks of conflict into opportunities for peace (Conca – Dabelko 2002; UNEP 2009a). In the last two decades, EPBL has become a rapidly growing field of research and practice. Today, EPBL is embedded in academia, policy making, and education[2], as well as in practice. The increase in attention to EPBL has resulted in dozens of scientific, as well as practice-oriented papers and books[3], and dozens of field projects all over the world. All this would indicate that we know a great deal about EPBL. However, this is not true. What we do know little about is the social context of the production and diffusion of EPBL as expert knowledge[4] in international politics. Context is that which "surrounds" a particular phenomenon. It refers to the specific setting in which social interaction takes place. But it is not only something that simply surrounds objects; social context modifies conditions and is a mediating mechanism (Pace 2008: 820; Goodin – Tilly 2006). Within broader social science, scholars take social context as their starting point, and often as the primary focus. But students of international politics do this only negligibly. However, EPBL, as with other phenomena, can hardly be understood without its relation to the setting and system of which it is part. The starting point here is that social context matters in the diffusion of expert knowledge in international politics, because the production and diffusion of expert knowledge is not automatic or spontaneous, and neither is it only a technical process based on a series of isolated events (Barth 2008; Hall 1989; Hveem – Knutsen 2012).

The goal of the present study is to learn more about the social complexity and context of the production of expert knowledge on EPBL and its diffusion in international politics. To know more about it may help us to understand

2 For details see www.environmentalpeacebuilding.org/education/curricula/.

3 See list of publications on EPBL on www.environmentalpeacebuilding.org/library/.

4 Expert knowledge is understood here as a spatio-temporal situated phenomenon in practice which is inseparable from everyday actions within a social context (Cook – Brown 1999). It includes facts, information, professional codes and skills gained and generated through education and training, socialization, practice and research (not necessarily done in the laboratory), and through the theoretical and practical understanding of the subject.

what knowledge has been diffused and *by whom*; *who owned* the production and diffusion *process*; *who was included* and *who was excluded* from it; *how relations, interactions, practices and actors assembled* and reassembled around EPBL; *how social connections* and networks *emerged and worked*; and *where and when the knowledge* penetrated academia, education, policy making and practice and *became influential in the international politics*.

The present article scrutinizes the period from the beginning of the 1990s to 2008, starting at the time when EPBL emerged as an idea and ending when UNEP's program called *Environmental Cooperation for Peace* (ECP) was formally launched to produce and diffuse expert knowledge on EPBL, to analyze and suggest politics and technical advisories concerning EPBL, and to implement it (UNEP 2009b, 2015).

In the first part, the research framework and methods used are introduced; attention is paid mainly to the Social Ecological Model which is applied throughout the work. The second part traces the socio-genesis of EPBL and follows the transformation of EPBL from idea to expert knowledge. The third part collects and evaluates empirical evidence about the social context of the diffusion of EPBL. The conclusion firstly discusses what the empirical evidence indicates about the social context of diffusion of expert knowledge about EPBL, and secondly pays attention to what the analysis of social context says about EPBL, and its diffusion.

II. Research framework and methods

The present article represents a contextual analysis and is inspired by studies of social context in sociology, anthropology, and health studies. Contextual analysis is premised on the idea that a consideration of context improves understanding of the phenomenon of primary interest and offers a contextualized explanation. Understanding the social context of a particular setting demands that researchers seek to understand what particular actions, words, and objects mean to people in a particular setting, and the meaning of a particular action or behavior must be understood in relation to the setting and system of which it is part (Pace 2008: 821). There are several models used for studying social context in social sciences; for this scrutiny the Social Ecological Model (SEM) was chosen (for other models see, e.g. Bandura 1997, 2002). SEM is used to explain the complex associations between social and structural factors, individual practices, and the physical environment. It is based on the idea that multiple dimensions of influence between humans and their environment exist and these multi-directional levels are interactive, co-constitutive and reinforcing. SEM enables to combine micro and macro focus, and to see objects and influences between micro and macro and spanning boundaries (Stokols 1992; McLeroy et al 2003). Thus, SEM is a meaningful framework in which to consider the social

context of the process of the diffusion, which itself "works" as the connection between knowledge, its authors, those who would like to use and apply it, and particular social systems in which knowledge is spread. It is a process consisting of global, international, transnational, domestic and inter-organizational interactions which occur between many different entities, including individuals.

SEMs differ in how many dimensions of influence they take into consideration. Here, a five-level SEM is used (Stokols – Pelletier – Fielding 1996). The levels we take into consideration are:

1. *Individual*: Individual factors are biological or behavioral characteristics; they have the capacity to influence how a person behaves. Age, education, economic status, profession, interests, and personal trajectories are some of the many attributes noted at this level. In this research, the individual level gives an account of who was producing and diffusing expert knowledge on EPBL and their individual and group characteristics. Here, attention will be paid to the education, profession, experience, and personal trajectories of EPBL entrepreneurs.

2. *Interpersonal*: The interpersonal level refers to relations and networks. As indicated by Latour (2005), nothing in the social and natural world exists separately; rather, everything is constantly generated and transformed by mutual relations between actors. Relations and structure determine actors' roles and functions and actors give sense and durability to connections, as well as networks. Relations and networks influence behavior, enable social exchange and access to information and opportunities, and playing out social norms (Granovetter 1973). The tracing of relational linkages, their movement, and the circulation of information enable an understanding of how actors enable and mediate organized activities and how social context is generated. In SEM, relational networks are operationalized as a group of people not necessarily bound by geography who have a higher probability of being exposed to the knowledge of others, mediated through increased contact. Here, we aim to discover the relations and linkages of EPBL entrepreneurs, the characteristics of interaction between EPBL entrepreneurs and their quality, as well as between EPBL entrepreneurs and others.

3. *Organizations*: Organizations are instrumental in the development of behavior and deeds as they often set up and enforce regulations and are also able to control the material infrastructure of dissemination and channels of communication (Finnemore – Sikkink 1998). Here, we will concentrate on which organizations exercised influence over EPBL diffusion, particularly who (which organization) organized the process and how, who provided material support, and what organizational practices and rules affected EPBL diffusion.

4. *Community*: In SEM, community is defined as a group of actors who interact with each other and share common beliefs, values, and behavior. This level focuses on who is part of the community and what qualities and characteristics

the environment within the community has in which social relationships occur. Traditionally, communities occurred within bound geographic territories; however, with the development of modern communication technologies, distance has become less important. Here, attention will be paid to the characteristics and qualities of the physical environment, to social structure, and to the beliefs, values, and behavior of the community of EPBL entrepreneurs. The environment in which the community itself is situated will be also scrutinized.

5. *Policy*: Policies and laws provide the general framework for shaping human behavior and have the potential to impact large numbers of people. Policies and laws, and their institutional and financial arrangements, influence processes in the society including decisions about science and the use of scientific knowledge in politics (Jasanoff 2004). Here, we aim to think through the policy environment and the global and regional state of political affairs which surround the EPBL diffusion in international politics.

2.1 Data collection and analysis

Before introducing the methods used here to collect and evaluate data, it is necessary to say that there are at least two obstacles to studying expert knowledge diffusion in international politics. Since it is hard to predict what particular knowledge will spread, it is always necessary to proceed retrospectively. However, retrospective scrutiny is challenged by imperfect human memory, cognitive biases, and materials too conclusive and general, giving only impersonal information and no clear evidence of social ties and social context. Additionally, retrospective scrutiny and the global reach of an analyzed subject do not allow individual researchers "to be there" as a participant or observer. All research into past social processes and contexts have had to find ways of reconstructing the many situations, and even then, they are challenged by the risk of misunderstanding. [5]

Here, a pragmatic combination of methods was used. To collect data, an extensive study of documents, qualitative historical analysis (QHA), biography and interviews were used. The goal was to obtain more details on the socio-genesis of EPBL, to document the process of EPBL diffusion, to determine the *key events* and *key agents*[6] in the process of EPBL diffusion, and to know more about how events happened and who the agents were. The circulation of people across jobs

5 Not only International Relations has been challenged by this problem, similar questions have been discussed within anthropology and sociology. To solve the problem, scholars (Burawoy 2000; Marcus 1995; Stepputat – Larsen 2015) suggested replacing observation and presence with so-called "polymorphous engagement".

6 *Key agent* is somebody (be it individual or organization) who participated in the debate on EPBL for several years and did something to diffuse and implement EPBL in a political environment. *Key event* is the occurrence which unequivocally demonstrates the motion and actionability of EPBL in politics.

and their personal and institutional connections, as well as the developmental and organizational transformations of institutions were traced.

To analyze and interpret data, qualitative evaluation, prosopography, Social Network Analysis (SNA), and topology were mainly used. Because some of the most important instruments of EPBL diffusion are academic, policy, and practice-oriented publications, SNA was used to gain an understanding of the co-authorship network, particularly the relations between those identified as key persons ("nodes" in SNA terminology; more see Wasserman and Faust 1994). At an aggregate level, the network of 12 people (see below) was analyzed as a whole in order to identify important components within the community. More specifically, authors and co-authors were analyzed in terms of their centrality[7] in the EPBL network. Particularly, the betweenness centrality score[8] was measured. The bibliometric data used for SNA was based on the CVs of particular persons and data from EBSCO, JSTOR, and the EPBL Knowledge Hub. SNA was used mapping the relations of key persons between 1993–2007.

Topology was used to scrutinize the means of connections in a group of key agents and their characteristics. A pre-determined set of key agents (12 key persons plus key institutions, see below) was used to define the topological space in 2007. The data about relations and connections were collected from CVs, the web pages and documents of particular institutions, project reports, interviews and information in publications, and from newsletters, to name but a few.

The following scrutiny of social context of EPBL diffusion is divided into two parts: firstly, the genesis of EPBL and its diffusion in international politics is introduced; secondly, the social context is scrutinized through applying five--level SEM.

III. EPBL: from idea to expert knowledge and the evidence of its diffusion in international politics

The idea of a security-environment nexus was born in the 1960s as a reaction to environmental damage during the Vietnam war and prospered in 1980s during debates on water wars, the rise in world population and environmental migration, and the possible impact of nuclear war (Waisová 2017). However, the idea of using environmental cooperation and transboundary conservation as a catalyst for conflict resolution and building peace first emerged at the end of the

7 A central actor is one at the center of a number of connections, i.e. an actor with a large number of direct links with other actors.

8 The betweenness centrality score is a measure of how often a node lies on the shortest path between nodes within the network. Nodes with a high betweenness centrality often connect components of a network that would be disconnected if the node were removed. A high betweenness centrality indicates that an author is frequently identified if other authors within the co-authorship network need to be connected with one another, and they lie "between" them as an intermediary (for details see Bender et al 2015).

1980s within the International Union for the Conservation of Nature (IUCN). In 1988, J. Thorsell[9], then coordinator of IUCN's Program on Protected Areas, organized a workshop on Border Parks that resulted in 1990 in the publication *Parks on the Borderline: Experience in Transfrontier Conservation*. In this, the IUCN cooperated with UNEP and identified places where internationally adjoining protected areas occurred. The wider effects of transboundary conservation began to be traced and evaluated. In academic circles, pioneering studies on the use of environmental cooperation in conflict resolution and peacebuilding appeared (Brock 1991). The next event was a call for Regional Action Plans at the IUCN World Parks Congress in 1992. In 1994, Europe responded with *Parks for Life: Action for Protected Areas in Europe*. The book suggested using environmental issues to support cross-border cooperation. At the same time, (1993) UNEP published the report *Transfrontier Reserves for Peace and Nature: A Contribution to Human Security* edited by A. Westing[10] and written by scholars from IUCN. The book firstly unequivocally articulated the idea of the peacebuilding potential of environmental cooperation and suggested using environmental cooperation to build trust between opposing parties. Since then, EPBL has become the meeting point between IUCN and UNEP and working relations have been established (Hamilton – Sandwith – Vasilijević nd).

The outcome of these developments was the concept of "peace parks". Peace parks were suggested as a specific conservation management strategy for transboundary areas rich in biodiversity but under threat from violence and military conflict (Brock 1991; IUCN 1994). The concept became embedded within IUCN and UNEP and penetrated international conflict resolution. In October 1994, a peace treaty between Israel and Jordan was signed and, following its environmental appendix, the first peace park, called the Red Sea Marine Peace Park, was established in 1996.[11]

9 For people mentioned throughout the text but not included in the group of key persons, short bibliographic information is mentioned in the references. James Thorsell, Canadian nature conservationist, worked for IUCN as senior advisor from the 1980s and cooperated with UNESCO. He joined as CEO of the World Commission on Protected Areas in 1983 and later headed the World Heritage Program.

10 Arthur Westing received, B.A. in Botany from Columbia, and then served in the U.S. Marine Corps during the Korean War. Later he received a master's in Forestry and PhD in Plant Physiology and Ecology at Yale. He worked as an academic at universities, for SIPRI and PRIO. He was an international environmental security consultant to various intergovernmental and non-governmental organizations. Westing is seen as "the most important pioneer on the environmental impact of war," and should be regarded as "the father of the modern, continuous interest in the environmental effects of war" (Brauch 2013).

11 Following the Madrid conference in 1991, a series of negotiations focused on water were set up under the sponsorship of the US. During this period, the USAID and its consultants for hydropolitics (mainly A. Wolf) suggested joint water management as a solution to water scarcity and water conflicts in the Aquaba gulf (Wolf 1993). Aaron Wolf is a professor of geography at Oregon State University. He has an M.S. in water resources management and a, Ph.D. in environmental policy analysis from the University of Wisconsin, Madison. Wolf has acted as consultant to the US Government, the World Bank, and several development agents on various aspects of water resources and conflict management. He has been involved in developing strategies for resolving water aspects of the Arab-Israeli conflict.

In 1997 IUCN opened the Parks for Peace initiative, to be a tool to enhance cooperation on biodiversity conservation, conflict prevention and resolution, and suggested the Draft Code for Transboundary Protected Areas in Times of Peace and Armed Conflict (Sandwith et al 2001). At this time, the idea of EPBL resided only within IUCN and in the heads of several peace research scholars and protectionists, who were mainly motivated by a practical need to solve environmental issues in conflict-prone areas. However, from the mid-1990s, when the international community was challenged by genocide, civil war, resource conflict, several ecological problems in conflict and post-conflict zones, and by the rising quest for conflict prevention and resolution, interest in EPBL began to grow.

When the Environmental Change and Security Program (ECSP) was created in 1994, EPBL emerged within the agenda of the eminent, and historically one of the most influential think tanks worldwide, Woodrow Wilson Center. The program reflected social changes in the US and political transformation after the arrival of the Clinton administration in 1993 (see note 23) and its aim was to support the research of the environment-security nexus, environmental peacebuilding, and the greening of policymaking at home, as well as internationally (ECSP 1995). The program became the "true cradle" of the first generation of EPBL scientists; almost all the people identified here as key agents appeared on the ECSP stage at the time. The milestone was the appointment of the interdisciplinary-based professor G. Dabelko as program director in 1997. Dabelko extensively published on the peace dividend of environmental cooperation and advised several international organizations to implement EPBL in field projects (for his background and role in EPBL diffusion, see Table 1, Pictures 1 and 2).

The idea of EPBL began to transform into knowledge and appeared internationally. In 1998, G. Dabelko met S. Lonergan and R. Matthew when preparing a report for OECD. The report was named *State of the art review on environment, security, and development cooperation* and roofed by IUCN. The idea of a peace dividend of environmental cooperation in conflict-prone areas was clearly articulated through the report. Despite all three working in 1998, as well as later for different organizations (Table 1), they remained devoted to EPBL, met at various events in the following decade, and established cooperation with emerging EPBL friends (Picture 1). Apart from the WWC, EPBL appeared on the agenda of the UNEP Swiss Office, an institutional platform with international reach. The office, headed by S. Lonergan, became one of the most progressively developing UNEP bodies at the end of the 1990s, with a strong effort to penetrate the rapidly developing UN peace agenda and policy making (D. Jensen, Personal Interview, 7 February, 2020).

The period from the end of the 1990s until the emergence of ECP in 2008 was characteristic of winning new knowledge on EPBL through research and

field projects and spreading the knowledge and practice world-wide. In 1998 IUCN issued the Action Plan for the Environment and Security and cooperation with the International Institute for Sustainable Development (IISD) was established. Consequently, in 2000 M. Halle, director of IISD, initiated the establishment of the Working Group on Environment and Security within IUCN with the goal of systematically examining the links between conflict, disaster, and environmental management. IISD acted as the secretariat for the Working Group (Presentation 2012). Later that year, IUCN and IISD created the joint Task Force on Environment and Security. At the same time, the Division of Early Warning and Assessment and the Expert Advisory Group on Natural Resources and Conflict were created within the Swiss Branch of UNEP, both directed by S. Lonergan. Several persons identified here as key agents became members of the group and several others began to cooperate with it (Table 1). Lonergan (2004: 2) symbolically summarized the developments in the introduction to the report *Understanding Environment, Conflict and Cooperation* issued by WWC. He wrote that UNEP "is developing Environment and Conflict Prevention initiative to coordinate and stimulate international efforts to promote conflict prevention, peace, and cooperation through activities and policies related to environmental protection, restoration, and resources. The goal is... to facilitate cooperation on environmental issues."

The increase in interest and in knowledge about EPBL was reflected in two books published in 2002: *Environmental Peacemaking*, edited by Conca and Dabelko, and *Conserving the Peace Resources, Livelihood and Security*, edited by R. Matthew, M. Halle and J. Switzer[12]. The first book was issued by WWC, the second by the IUCN-IISD Task Force on Environment and Security. Today, both are evaluated as being turning points in the diffusion of expert knowledge on EPBL (D. Jensen, Personal Interview, 7 February, 2020). However, EPBL also began to live actively in international politics, where there emerged projects such as the *Red Sea Marine Peace Park*, the *Good Water Makes Good Neighbors* project of the NGO Friends of the Earth Middle East, and *ENVSEC*, a joint project between UNDP, UNEP, NATO and OSCE created in 2003 to manage environmental problems in East Europe and Central Asia, to name but a few. EPBL also penetrated the foreign and development policies of several countries (see note 21nn).

At the beginning of the new millennium, EPBL became rooted in the UNEP, which was reflected by further institutional transformations, as well as changes in the agenda (D. Jensen, Personal Interview, 7 February, 2020). Within UNEP, the Post-Conflict Assessment Unit was established (headed between 2001 and

12 Jason Switzer holds a graduate degree in Environmental Engineering and in Technology Policy from MIT. He was a Project Officer for IISD's Environment and Security initiative, and later worked at the World Commission on Dams and at GeoHazards International.

2004 by P. Haavisto). The Unit "conducted environmental clean-up and capacity building exercises, which went *beyond the mandate* given to the Unit by UNEP" (Brusset 2016; italics the author). The Unit also cultivated relations with several non-UN bodies, such as universities, research institutions, non-governmental organizations, and consultants interested in EPBL (UNEP 2004). The final step was the change in the name of the Unit, (from 2007 it was known as the Post-Conflict and Disaster Management Branch) and the creation of the UNEP Program on Environmental Cooperation for Peacebuilding (ECP). The program was created at a time when UNEP, based on its experience in the Balkans, won a monopoly over post-conflict environmental assessment (Maertens 2018).

ECP began to work in 2008 under the leadership of D. Jensen and with the financial support of Finland and Sweden. When D. Jensen commented on the emergence of ECP (Personal Interview, 7 February, 2020) he argued that "the main driver was the creation of the UN Peacebuilding Commission at the end of 2005. This Commission had a mandate to address the root causes of conflict and lay the foundation for sustainable peace. In this context, UNEP realized that its post-conflict assessments were not well aligned to the needs of the Commission as UNEP only spoke to environmental damage and risks rather than drivers and peacebuilding opportunities. Consequently, the discussion was brokered between UN Secretary General Kofi Annan, Director of UNEP Klaus Topfer, President of Finland Tarja Halonen and Director of the UNEP Swiss Office Pekka Haavisto, whereby UNEP would offer expertise to the UN Peacebuilding Commission on the environmental dimensions of conflict, based on its post-conflict field work, as well as evidence coming from its network of academic partners and institutions. This concept was then wrapped into ECP."

IV. The search for social context of EPBL diffusion in international politics

As indicated above, here, the five-level Social Ecological Model will be used. For analytical purposes, levels are scrutinized separately; however, in the real world the levels are interdependent and co-constitutive, meaning they are formed in relation to and by each other.

4.1 Individual

Despite conventional IR not usually taking individuals into consideration, in studying social context and expert knowledge diffusion even globally, individuals matter (Knorr Cetina 2003, 2005). Here, rather than being interested in the bibliography of a particular individual, we are interested in a group of particular individuals (prosopography). Particularly, who these people are, why and how these individuals came together, what "predetermined" particular individuals

to be EPBL entrepreneurs, and what characteristics influenced their ability to diffuse EPBL.

For prosopography, a group of 12 persons was set up: (in alphabetical order) Carl Bruch, Alexander Carius, Ken Conca, Geoff Dabelko, Pekka Haavisto, Mark Halle, Anne Hammill, David Jensen, Stephen Lonergan, Richard Matthew, Jennifer Wallace, and Erika Weinthal. The names of these 12 people were *repeatedly* mentioned between 1993 and 2007 in publications or in discourse on EPBL as its entrepreneurs, or they alone were authors of *several* pieces on EPBL. People who engaged in related issue areas different from EPBL, such as environmental security, impacts of armed conflicts on environmental degradation, or the management of transboundary water resources were not included.

Information about individual characteristics were sought through the scrutiny of various documents, including CVs, information about authors in articles, books, speeches, and the archived webpages of different organizations. The information is summarized in Table 1.

Table 1: Personal trajectories of key persons between 1993 and 2007

Person	University degree	Profession	Career path	Place of work
C. Bruch	Physics Mathematics Law	Attorney Director Lecturer Legal officer	ELI UNEP	Kenya US
A. Carius	Political science Law Journalism	Managing director Consultant Advisor Scholar	Ecologic Institute for International and European Environmental Policy Advisor to the German Foundation for International Development Lectures at universities Member of the German Foreign Office's Advisory Board "Civilian Crisis Prevention" Adelphi UNEP EAG	Germany International field missions
K. Conca	Geological science Energy analysis and policy Energy and resources	Scholar Advisor	University of Maryland UNEP EAG	US
G. Dabelko	Government and politics Political science	Director Scholar Advisor Editor Investigator	Council on Foreign Relations Foreign Policy Magazine ECSP WWC Lectures at universities UNEP EAG USAID	US International field missions

Person	University degree	Profession	Career path	Place of work
P. Haavisto	None	Advisor Investigator Special representative Director Minister	UN UNEP EU Minister for Environment and Development, Finland Chairperson of the Finnish Greens, later of the European Green Party	Finland Switzerland International field missions
M. Halle	History Environmental sciences	Advisor Executive director	IUCN IISD UNEP and UNEP EAG	Switzerland US
A. Hammil	Geography Environmental studies	Researcher Project manager	IISD GECHS	Canada
D. Jensen	Biology Geography	Advisor Policy and research coordinator Director	UNEP (PCDMB)	Canada Switzerland International field missions
S. Lonergan	Geography	Professor Director	GECHS UNEP Lectures at universities	Kenya Canada
R. Matthew	Politics	Senior fellow Member	GECHS IUCN IISD UNEP EAG University of California, Irvine Georgetown University	US
J. Wallace	Politics Environmental diplomacy	Intern Course coordinator	UNDP Geneva Centre for Security Policy	US Switzerland
E. Weinthal	Political science	Professor Advisor	Duke University UNEP EAG	US

Resources: Official CVs on webpages of their home institutions and LinkedIn profiles
Acronyms:
ECSP: Environmental Change and Security Program, W. Wilson Center
ELI: Environmental Law Institute
GECHS: Global Environmental Change and Human Security Project
IISD: Institute for International Security and Development
IUCN: International Union for Nature Conservation
UNEP: United Nations Environmental Program
UNEP EAG: Expert Advisory Group on Natural Resources and Conflict
USAID: United States Agency for International Development

Analyzing the population of key persons, several of those scrutinized here see themselves as EPBL entrepreneurs, or they are seen playing this role by others. In Carl Bruch's CV on LinkedIn, we can read that he "has been a leader in a global effort to establish a new multidisciplinary field of environmental peacebuilding"[13]. In David Jensen's CV on the UNEP webpages a similar statement can be found.[14] How others see persons from the group can be demonstrated by the words of Erik Solheim, the Executive Director of UNEP: during the ceremony in 2018 when Conca and Dabelko were awarded the Al-Moumin Award on Environmental Peacebuilding[15], he said, "No two individuals have shaped our institutional thinking on environmental peacebuilding more… We owe them a tremendous debt of gratitude for their innovative thinking and the paradigm shift they have catalyzed through their work."[16]

Looking at the data in the table through prosopography, several moments come to the forefront about the population of key persons: they have university degrees and have worked across professions, particularly academic, advisory, policy-making, and field research; they have an interdisciplinary background and a particularly shared attachment to environmental studies, politics and geography; in their professional career they all worked (among others) for UNEP, GECHS or IISD; and their jobs were associated with organizations located in the US, Switzerland and Canada. All these persons were highly mobile, having experience from different parts of the world and having contacts and relations with various experts worldwide. Many of them also held managerial positions, having influence on the agenda and course of the organization directed. The EPBL entrepreneurs assembled around EPBL production and diffusion gave rise to an academic-policy complex based on the cohabitation of scholars, officers, and policymakers, where the border dividing science and policymaking nearly disappeared. The complex was based on mutually useful partnerships, mutual support, and the mutual legitimization of activities and the justification of existence. The scholars were members of various field projects and advisory bodies, or worked directly in particular policy making posts, and high-level officers and policymakers penetrated into typically academic activities, such as academic lectures or editorial work. All the people in the population had international professional experience (even when of different extents), and were engaged in either the greening of politics, security or peacebuilding. These people were professionals with recognized expertise and authoritative claims to policy-relevant knowledge. They also shared a set of beliefs and tried to exercise influence by interpreting environmental-security problems and possible responses for decision makers.

13 See www.linkedin.com/in/carl-bruch-b516b98.

14 See www.unep.org/people/david-jensen.

15 See ELI: eli.org/news/environmental-peacebuilding-researchers-receive-prestigious-al-moumin-award

16 See wilsoncenter.org/article/fifth-al-moumin-award-presented-to-geoffrey-dabelko-and-ken-conca

4.2 Interpersonal

Thinking about the social context of the EPBL diffusion in international politics needs an analysis of the relations between key persons, as well as the relations between the group and the external environment. For mapping relations within the group, SNA was used; for mapping relations in the wider space, topography was used. As Table 1 and the genesis of EPBL indicate, the interpersonal relationships emerged dominantly against the backdrop of three institutional platforms – UNEP, IISD, and GECHS, albeit another two – WWC and IUCN also mattered. While UNEP, IISD and IUCN were located in Switzerland, WWC is located in the United States and GECHS had no particular location, meeting ad hoc. Within UNEP's Swiss office, relations were forged during meetings within field missions, workshops, joint projects including publications and advisories. Relations through IISD grew originally from institutional cooperation between IUCN and IISD, and later from joint interest in the environmental-cooperation--for-peace approach expressed by UNEP and IISD staff located in Switzerland. Important and strong interpersonal links also emerged within ECSP when directed by Dabelko; he regularly invited EPBL friends to join workshops and conferences, and to have public speeches or to publish together (e.g. A. Carius, K. Conca or R. Matthew[17]).

A specific environment for the emergence of new relations was provided by GECHS. This was a project operated between 1999 and 2010 with the goal to develop integrated research on global environmental change and human security. Dozens of scientists from different disciplines participated and established science-policy dialogue and published almost 30 books, over 100 reports and articles, and 9 dozen peer-reviewed papers in scientific journals (O'Brian and Barnett 2013). The project Science Committee was chaired by S. Lonergan and also included R. Matthew and A. Hammill (Table 1).

Many activities assembled around UNEP, IISD, WWC and GECHS were topped off with publications, particularly policy papers, reports, conference handbooks and academic texts. Our idea (and experience) is that to publish with somebody means to meet and communicate regularly, to trust each other, and to share a theme, a vision and an analytical framework. For detecting interpersonal relationships between key persons, an analysis of co-authorships may be a good way. The SNA of the co-authorship relations between 1993 and 2007 (Picture 1) indicates that Dabelko and Carius were at the center of the network of authors writing on EPBL; the most productive co-authorship was between Dabelko and Carius (9 joint publications) and Dabelko and Conca (4 joint publications).

17 For detailed information see archive of the Program /fellows, events, projects, ECSP report series/ on wilsoncenter.org/program/environmental-change-and-security-program

Picture 1: Co-authorship network of key persons, 1993–2007[18]

Resources: Author's visualization based on bibliometric data from EBSCO, JSTOR and EPBL Knowledge Hub.

A network of co-authorship relations developed between key persons, even despite these individuals residing in the different parts of the world. From an analysis of the socio-genesis of EPBL, and of institutional history, we know that UNEP, IISD and GECHS were linked through various projects, publications and filed missions. In summary, the population of key persons regularly met against the backdrop of inter-organizational relations and vice versa – inter--organizational links and joint projects emerged based on the good personal relations of people from the group of key persons and on the fact that these people shared a particular vision and episteme. These people changed their links and relations to a network of working connections over time.

18 The visualization is based on a radial model and includes the robustness of connections and the role of a particular person. The robustness of the line indicates how often particular people published together; the size of the node, how often the person was an editor.

4.3. Organizations

Organizations and institutional platforms are instrumental in the development of norms, behaviors, and deeds as they often set up and enforce regulations, provide necessary infrastructure and financial resources, and are also able to control the dissemination of knowledge and communication channels (Finnemore – Sikkink 1998). From the beginning of the 1990s, EPBL penetrated the agenda of various organizations and became so embedded within several of them that bodies, programs and projects dedicated to the production of expert knowledge on EPBL, and its diffusion were established. In the period between

Table 2: Presence of EPBL in the agenda of selected organizations (examples)

Organization	Year	Event	Proof
ELI	1994	Trilateral Peace negotiations US-Israel-Jordan	"In the early 1990s, ELI helped secure environmental protection and facilitate cooperation around the Gulf of Aqaba through its recommendations during U.S./Israel/Jordan negotiations which led to the Gulf of Aqaba Treaty." (ELI n.d.)
IISD	2002 2010	Task Force on Environment and Security Book *Environment, Conflict and Peacebuilding*	Book: Matthew, Halle, Switzer 2002 "Since 2007, at the request of the UNEP, IISD has led an Expert Group that advises UN agencies on how better natural resource and environmental management contributes to more effective peacebuilding." (IISD 2010) The UNEP-IISD partnership on environmental peacebuilding is confirmed by UNEP.[19]
IUCN	1997	Parks for Peace initiative	"Parks for Peace initiative as a tool to enhance regional co-operation for biodiversity conservation, conflict prevention, resolution and reconciliation … Parks for Peace are transboundary protected areas that are formally dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and to the promotion of peace and cooperation." (Sandwith et al 2001, p. 1–3)
UNEP Swiss office	2007	Environmental Cooperation for Peace Program Expert Advisory Group on Environment, Conflict and Peacebuilding	When the existence of ECP was announced, its goals were declared (UNEP 2009a): 1) the production and diffusion of expert knowledge on EPBL; 2) the analysis and suggestions of politics and technical advisory concerning EPBL; 3) … the production of case studies on how natural resources had successfully supported post-conflict peacebuilding, and; 4) the implementation of EPBL.
WWC	1995	Environmental Change and Security Program	ECSP Report, No.1 (1995)

19 See unep.org/explore-topics/disasters-conflicts/what-we-do/recovery/partnerships

1993 and 2007, the EPBL agenda found standing home and strong support within (listed alphabetically) ELI, IISD, IUCN, UNEP, and WWC. Evidence may be found in various reports, documents and projects (Table 2).

The institutions listed here differ in background, organizational nature, and characteristics (projects, members, location, instruments used, authority, and competence) but between the 1990s and 2007 they assembled around EPBL and EPBL settled their agenda, and they – separately or jointly – built channels and a supportive environment for the production and diffusion of expert knowledge on EPBL. IISD and IUCN jointly established and operated a Task Force for Environment and Security, UNEP and the security program of the IISD established the Expert Group on Conflict and Peacebuilding. Before EPBL was accepted and implemented, some of these organizations – particularly UNEP – had to go through deep internal reorganization. Observers note that internal organizational transformations opening doors to EPBL were possible because people in high management positions were supportive of the process and sponsors of the changes occurred (D. Jensen, Personal Interview, 7 February, 2020, on the role of UNEP directors K. Toepfer /1998–2006/ and A. Steiner /2006–2016/, and Finland and Sweden in the process of EPBL penetration to UNEP environment). The variety of organizations (location, issue area, activity, role in international politics) helped to communicate EPBL to various audiences and to disseminate knowledge among people with different professional backgrounds.

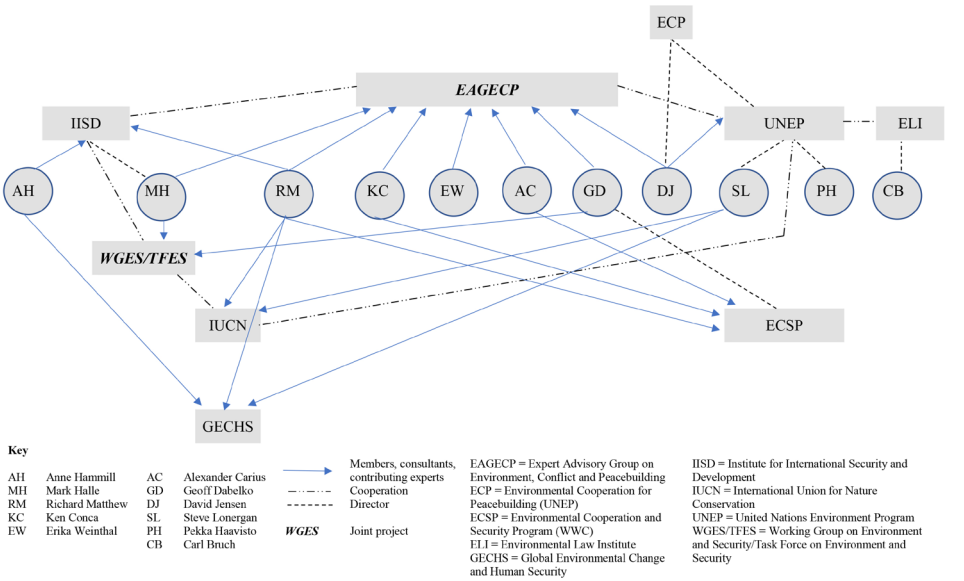
4.4 Community

Community level focuses on the relations between agents that make up the greater community and environment in which individuals and organizations exist and social relationships occur. It also includes physical environments and culture, including values and beliefs. To reconstruct the community context topology will be used and values, beliefs and the surrounding socio-political environment of the time will be investigated.

Topology enables us to visualize the architecture of connections between actors. Topology for the year 2007 (Pictures 2) shows actors, organizations and relations, and it provides evidence that relations assembled around EPBL are multi-scalar, non-hierarchic, and non-centralistic, based on interactions between individuals and institutions of various natures. Meetings of key persons within these platforms enabled the additional strengthening of mutual trust within the community and provided the process of diffusion with stronger material resources and infrastructure. In this network, individuals played a significant role. Most of the nodes are connected to more than one another node in the network with a point-to-point link. Such a network is called a "partially-connected mesh network". Topology-based scholars (Mousa – Mohammed – Mohammed 2019; Sosinsky 2009) agree that such a network structure deals well with the

situation when one node fails, the costs of the creation and maintenance of such a network are relatively low, and the network can be easily extended. However, the speed of transfer and flexibility are lower, and transmission and flows need to be directed and protected against the possible forming of a cycle. After ECP started to work new institutions emerged and the position of several key individuals within the network changed. However, these transformations are already beyond our interest here.

Picture 2: The topology of connections: key agents assembled around EPBL in 2007



Resource: Based on the resources citied in the article

The idea of "community level" believes that not only relations and networks, but also values, beliefs and the frame of mind of societies and politics produce an environment and community context. However, each retrospective analysis of these phenomena is difficult because it can only use current surveys and opinion polls and registered formal expressions of values and beliefs, such as new institutions or particular events. Fortunately, a change in values has been monitored by World Values Survey[20] (WVS), longitudinal research of hundreds of societies making basic data available. For reflection on the surrounding socio-political environment, a study of documents, archived web pages and interviews was used.

20 For details see (worldvaluessurvey.org/wvs.jsp).

The WVS starting point is the idea that after WWII, a global transformation in values and beliefs appeared. Western societies in particular entered into a new era of socio-economic existence called "post-industrial development". This change was conceptualized as a shift from material values to post-material values. Material values are understood as the orientation of people towards economic prosperity, material security, stable economic growth and the maintaining of social order. Post-material societies take greater account of aesthetic and human elements and quality of life, of life as such and its meaning and value. In other words, post-materialists put increasingly less emphasis on the importance of material consumption and economic security and prioritize general human objectives (Inglehart 1977). Postmodern transformations on the micro level spilled over into other levels and impacted both domestic and international politics. Voting behavior changed and new approaches to security, conflict resolution and peacebuilding developed in the 1990s, particularly human security, humanitarian intervention, Responsibility to Protect, and the greening of world politics (see below), to name but a few (Carius – Dabelko 2002; Waisová 2017).

However, the transformation did not only play out against a backdrop of changes in value preferences and political behavior, but also derived from the experience of environmental disasters and their impacts on environment and human communities, such as the Chernobyl power plant accident, the growing number of devastating floods in South-East Asia, the destruction of land by the use of millions of landmines in civil wars, and the devastating impact of violent conflicts on water resources and wildlife. Post-materialism, the growing attention to human security, to climate change and environmental degradation, and the growing need to prevent and solve climate change, loss of biodiversity, violent struggles and genocide, combined with institutional openness to such issues and with the availability of financial resources, opened the door to the implementation of environmental peacebuilding at community level.

4.5 Policy

In the contextual analysis we assume that policies and laws matter because they provide the general framework for shaping human behavior and they influence the processes in a community. Here, policy environment, laws, and the global and regional state of political affairs which surround EPBL diffusion in international politics will be investigated. The 1990s were, in many respects, a revolutionary period. World politics, international trade, as well as many societies experienced deep ideological, organizational and structural transformations. One of the issues was the growing attention to environmental degradation, resource scarcity, and the debate on the global responsibility to protect biodiversity and humankind. At that time, environmental law expanded

(e.g. laws on protecting the environment during armed conflict[21]), policies and projects reflecting the environment-security-peace nexus were on the rise, and new institutions and instruments to green politics were arranged. These changes can be observed not only in UNEP and IUCN, but also in the politics of various countries – Germany[22], Finland[23], and also during the Clinton administration in the United States[24], to name but a few.

For the diffusion of EPBL, probably the most important change was the new United Nations approach to conflict management. This transformation was gradual and deep; it symbolically started with *An Agenda for Peace* introduced in 1992 by B.B. Ghali when talking about the need of conflict prevention and peacebuilding and was symbolically lined by the emergence of the International Criminal Court (1998/2002), the UN Peacebuilding Commission (2005), Responsibility to Protect resolutions (2005/2007), and the greening of both UN security agenda and instruments (see e.g. *Greening the Blue Helmets 2012* project or *Greening the Blue report 2020*). This list of policies and laws that helped open the door to EPBL diffusion is not complete; however, it documents well how the world, policies, and context changed. EPBL, against the backdrop of these conditions, has penetrated into UN agenda and UN inter-agency programming mechanisms and into country programs, directly providing field-level expertise, advice, guidance materials and technical briefs, and often having normative (norm-establishing) goals.

V. The concluding debate: What does the scrutiny of the social context of EPBL diffusion in international politics say about EPBL?

EPBL has been analyzed and discussed many times, both in policymaking and in science. Here, the aim was to explore the context of EPBL diffusion in international politics. Even when context examination alone is extremely interest-

21 On 27 May 2016, the UN Environment Assembly adopted resolution UNEP/EA.2/Res.15, which recognized the role of healthy ecosystems and sustainably managed resources in reducing the risk of armed conflict.

22 See, for example, the German government's Action Plan for Civilian Crisis Prevention, Conflict Resolution and Post-Conflict Peace-Building adopted in May 2004. Consequently, in 2005 Germany adopted a strategy for peacebuilding which formulates guidelines for the use of development aid to better address the structural causes of conflict, including resource governance.

23 Finland covered 65% of the budget for UNEP ECP during 2006 and 2016 and 35% of the budget for ENVSEC, sponsored UNEP's post-conflict environmental assessment program for the Western Balkans, and assisted by delivering pro-EPBL personnel – e.g. P. Haavisto as director of the UNEP Post-Conflict Assessment Unit and an environment and security expert on secondment to the UN Peacebuilding Support Office (Brusset 2016; MFA Finland 2007, 2014).

24 The Clinton administration issued several statements that embrace environmental problems, such as security concerns, and created several new government offices that addressed environmental and security concerns – most notably the Global Environmental Affairs Directorate at the National Security Council, the Department of Defense Office for Environmental Security, and the Office of the Undersecretary of State for Global Affairs.

ing, this was not the only goal; here, it was rather an auxiliary procedure in the analysis of EPBL located within it. No expert knowledge – including EPBL – is socially independent, it is rather situated in social worlds. Expert knowledge and the social setting in which it emerges and diffuses are interdependent entities in the making. Here, what the analysis of social context says about EPBL, and its diffusion will be discussed.

EPBL as an idea was born within a group of a few individuals with specific cognitive maps: had an interest in environmental protection and were aware of the impact of environmental scarcity on human communities, and of violent conflicts on biodiversity and environmental degradation. All of these people worked across professions and globally, being able to bring field experience and lessons learned to high-level policy making bodies. Over time, their contribution was highly appreciated and respected, which helped EPBL spill over into other platforms. When EPBL was born at the beginning of the 1990s within IUCN, its driving force was the environmental protection of transboundary ecosystems; later, when the debate and research penetrated UNEP and IISD, it was predominantly motivated by the effort to invent new ways of conflict and resource management and peacebuilding. It was not only the movement of EPBL knowledge into other platforms, but the change in wider conditions in international politics, particularly the rise of the effort to prevent violence and reduce human suffering, which was reflected in the human security agenda. The idea of EPBL thus landed on fertile soil in many countries, as well as internationally.

The results indicate that in the process of EPBL diffusion, in less than one decade based on daily practice, mutual collaboration and trust, there emerged a network of relations and particular microstructures within a relatively *small* group of scholars, practitioners and policy makers. These people were able to seed international politics and several local communities with the idea of EPBL and generate enough expert knowledge to initiate institutional changes and changes in the agenda of several organizations. They were localized at only a few places on the planet, connected by modern communication tools, coordinating their activities, and having a global influence on environment-security-peace debate at all levels. The group was not formal and rationalized structure, and it was not based on hierarchy and formal authority. It was rather a network which was effective based on the systematic and reflexive use of systems of amplification and augmentation consisting not only of channels, but also of others, such as self-reproducing mechanisms or practices, such as fellowships, joint projects and guest lectures. Knorr Cetina (2005), when she explored the global financial market, observed an entity she called "a global microstructure". She used the term for a small, highly specialized, professional, and effective group of individuals working for big international banks with a specific culture and structure, who were able to combine global reach with microstructural mechanisms that instantiate self-organizing principles and patterns (Knorr Cetina

2003, 2005). The population of key persons assembled around EPBL developed from a group sharing an episteme to a network with global reach based on infrastructure and institutional platforms it created for the diffusion of EPBL, based on rich relations, sharing particular experience, specific culture, values, and practices, in many respects similar to what Knorr Cetina observed on the global financial market.

One another moment should be mentioned: scholars paying attention to markets and companies (Henry – Pinch 2000; Saxenian 2008) point out that one of the main mechanisms of knowledge diffusion across the market is the regular movement of staff between firms. Such a mechanism worked in the case of EPBL diffusion as well. Individuals such as Dabelko, Carius, and Jensen were personally, as well as institutionally equipped to produce, collect, accumulate, and share knowledge on EPBL and when they "travelled" through policy-making and advisory positions (Table 1), they spread EPBL.

The scrutiny of policy context makes it clear that the increase in interest in EPBL was set at a time when world politics underwent revolutionary changes in agenda, actors, strategies, and instruments. Against the backdrop of these revolutionary changes, EPBL developed *from a positive idea*, optimistic toward humane behavior and ability of people to change their minds and close the mental gap, particularly to think about "one world", *into a policy-making framework*, an instrument, and a pragmatic approach to resource management and conflict resolution used not only for transboundary ecosystems. In two decades, EPBL transformed from an idea into socially robust expert knowledge and practice, putting down roots in different parts of the world. The need for environmental protection, as well as for peacebuilding and conflict prevention, was widely and globally accepted; the interdependence between the state of the environment, human security, and peace was taken for granted, the environment-security--peace nexus became a public interest in many societies, and a number of local, bilateral and regional projects based on the EPBL emerged. In the new millennium, the process resulted in *the institutionalization of the production and diffusion* of EPBL expert knowledge, when new bodies, projects, and instruments were established exclusively to produce and diffuse knowledge on EPBL.

To conclude, the present study indicates that the early production of expert knowledge on EPBL has been the result of coincidence, rather than a well--prepared goal-oriented incidental organized and managed process. However, the diffusion itself has not been accidental; the actors worked based on intentions, plans, and later also based on elaborated strategies and emerging infrastructure; however, in many respects they responded to their individual beliefs and environmental values, which met with policymaking demands for new solutions. However, in the first decade of the new millennium, the context significantly changed: the production of expert knowledge on EPBL and its diffusion became an incidental and well-organized and managed process.

The production of expert knowledge on EPBL and its diffusion became policy-oriented and in the service of political and security goals. EPBL left its original link with nature conservation and environmental protection and became placed within security and conflict resolution practices. As expert knowledge, EPBL did not emerge in the laboratory or in an office, rather it emerged in practice and developed within narrow relations between scholars, conservationists, and practitioners. Since the end of the 1990s, EPBL has been distributed because it has been collectively enacted through relations and mediated by the intersubjective meanings that have been invested in artefacts such as guidelines, projects, conferences, reports, and policies to name but a few.

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