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Jocelyn C. Adkins

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THE INTERNET: A CRITICAL TECHNOLOGY FOR THE STATE OF ENVIRONMENTAL LAW

JOCELYN C. ADKINS†

I. INTRODUCTION

INFORMATION is critical to the development, implementation and promotion of environmentally responsible resource management. Having stated the obvious, the question remains; how do we best facilitate the generation and exchange of that information? How do we most effectively make available critical information necessary to finding the solution to the environmental equation? And, yes, there is a solution, the identification of which demands a comprehensive understanding of the factors contributing to our current environmental situation, that is; the economic, legal, and societal as well as environmental variables. Unfortunately, this article does not provide the “answer” to the equation, what it does do, however, is identify and explain how one particular resource can be used to facilitate the exchange of necessary environmental information. The resource is the Internet.

The Internet is an information “mecca” that enables fast and efficient retrieval and dissemination of valuable environmental information. In addressing current and future threats to the earth’s resources, environmental actors should grab hold of this technology and utilize it to its fullest potential. Recognizing the value of the Internet to the environmental movement, the Center for International Environmental Law (CIEL) developed the E-Line initiative. E-Line (Environmental Legal Information Network Exchange) represents an online database specifically created to facilitate the global distribution of critical environmental legal information. This article discusses the design, objective, and execution of the E-Line system. First, however, for those not yet familiar with the Internet, a brief introduction to the electronic medium.

† J.D., University of Maryland School of Law (1996); B.A., University of Connecticut (1991). The author recently completed a law fellowship at the Center for International Environmental Law (CIEL), located in Washington, D.C. Since joining CIEL in 1995, as an intern and then as a law fellow, Ms. Adkins spent a significant portion of her time working on projects involving the present and potential use of the Internet to facilitate sustainable environmental policy development.

II. THE INTERNET

A. What is it?

The Internet is a vast network of communication systems connecting computer terminals worldwide. There is no "center" or "home base" to the Internet; it is simply an extensive system of networks transmitting information over telephone lines, satellites and fiber networks to all parts of the world. Although in existence for several years, it was not until the development of the World Wide Web (Web), with its user-friendly Windows format, that the Internet's popularity exploded.¹

It is estimated that the current number of Internet users is over seventy-six million and that number is believed to be doubling every year.² If history is any indication, computer capabilities will likewise continue to advance at a phenomenal rate.³ There are computers currently in existence that run approximately one *trillion* times faster than older models,⁴ and it is predicted that by the year 2000 computers will be able to transmit approximately 30,000 single-spaced pages per second.⁵ While the present utility of the Internet is exceptional, its future use as an information or communication resource is seemingly limitless.

The Internet provides access to an expansive amount of raw information. By clicking on the mouse, the user can access legal, institutional and technological environmental information. Furthermore, in addition to purely substantive textual information, the Web provides an extensive amount of information in the form of graphics, slides, video imagery and audio.

1. According to a recent survey, 51% of Internet users said they first used the Internet in 1995. See <<http://www.infoworld.com/archives/html/65survey.htm>>.

2. See John S. Quarterman, Matrix Information and Directory Services (MIDS). This statistic was found at the "Internet Statistics Generator" site, <<http://www.anamorph.com/docs/stats/stats.html>>.

3. Because of the exceptional rate at which Internet technology is advancing, Internet users should constantly be on the lookout for new developments. For example, a recent development in Internet technology is Webcasting. Webcasting requires a user to register for service and indicate channels and subjects of interest. Once in place, the Webcasting software will monitor the Web and other information sources, automatically downloading relevant information to the user's computer. The user will then be alerted at scheduled intervals to newly found information. This type of "push" delivery eliminates time often spent by the user sitting in front of the screen wading through non-relevant information. Webcasting is primarily used for commercial purposes, the benefit of which is still a topic for debate. *Special Report: A Way Out of the Web Maze*, by Amy Cortese, BUSINESS WEEK, February 24, 1997, at 94.

4. See John K. Gamble, International Law and the Information Age, 17 MICH. J. INT'L L. 747, 749 (1996).

5. See *id.* at 767.

B. Environmental resources on the Internet

The quantity of environmentally related information available on the Internet is extraordinary and constantly growing.⁶ Environmentally relevant information about current events, government institutions, environmental laws, technological developments and trade issues all readily accessible. Of vital importance to the protection of the global environment is country-specific environmental legal information. This type of information is currently accessible in many different forms on the Internet; for example, the United States Library of Congress maintains the "Thomas: Legislative Information on the Internet" site which provides detailed information about the U.S. legal structure, its operation and its laws.⁷ The site provides the text to proposed and enacted legislation, committee reports and historical documents including, for example, the Declaration of Independence and the Federalist Papers. The Thomas site also provides weekly updates on Congressional floor activities and contains detailed information about how laws are created in the United States. Additionally, the Thomas site includes links to other U.S. government Internet resources, such as links to sites specifically addressing the Legislative,⁸ Executive,⁹ and Judicial¹⁰ branches.

In addition to domestic legal information, Thomas furnishes a hypertext link to the Global Legal Information Network (GLIN), also developed and maintained by the U.S. Library of Congress.¹¹ The GLIN database consists of country-specific legal and regulatory information concerning all areas of law derived from official sources in contributing countries. Although anyone can obtain access to the GLIN database, GLIN "members" have access to both legislative abstracts and original text, whereas non-members can access only abstracts.¹²

Regional institutions are also actively using the Internet to disseminate environmental legal information. The NAFTA Commission for Environmental Cooperation, for example, has established a

6. Please note that this article primarily focuses on information available on the Internet's World Wide Web.

7. See <<http://thomas.loc.gov/>>.

8. See <<http://lcweb.loc.gov/global/legislative/congress.html#legbranch>>.

9. See <<http://lcweb.loc.gov/global/executive/fed.html>>.

10. See <<http://lcweb.loc.gov/global/judiciary.html>>.

11. See <<http://lcweb2.loc.gov/glin/glinhome.html>>.

12. Although still in its formative stages, GLIN's database already includes more than 54,000 records of national legislation. See <<http://lcweb2.loc.gov/glin/glininfo.html>>.

homepage¹³ which supplies links to national environmental law summaries for the United States, Mexico and Canada.¹⁴ Commercial entities, recognizing the market value of the Internet, also take advantage of this medium and profit by selling environmental legal services online. For instance, the California based environmental law firm of Latham & Watkins maintains, through the International Environmental Network, a database of environmental laws and regulations for various countries which can be accessed upon payment of a subscription fee.¹⁵

For the environmental attorney, the World Wide Web Virtual Law Library,¹⁶ maintained by the Indiana University School of Law, is an excellent place to initiate the hunt for online environmental legal information. The Virtual Law Libraries are categorized by subject, organized in alphabetical order, and cover several topics including administrative, international and constitutional law. The Virtual Library of Environmental Law provides hypertext links to an array of resources, including: "The Earth Negotiations Bulletin" maintained by the International Institute for Sustainable Development (IISD),¹⁷ which provides daily reports of negotiations on environment and development at the United Nations; and, "Title 40, Code of Federal Regulations,"¹⁸ which contains U.S. Environmental Protection Agency regulations equipped with a search engine. A multitude of academic institutions maintain their own sites on the Web as well, including: (1) the Tufts law program site, "Multilateral Conventions (Fletcher School of Law & Diplomacy),"¹⁹ which provides the full text to multilateral environmental conventions; (2) the Cornell Law School, which maintains a database organizing legal material by both type and source²⁰ and includes the full text to the United States Code,²¹ which is equipped with search capabilities; Pace University School of Law site, "Pace Global Environmental Law Network,"²² also equipped with a search engine; and (3)

13. See <<http://www.cec.org/>>.

14. See <<http://www.cec.org/infobases/law/index.cfm?format=2&lan=english>>.

15. See <<http://www.eyespeak.com/latham.html>>.

16. See <<http://www.law.indiana.edu/law/lawindex.html>>.

17. See <<http://www.iisd.ca/linkages/>>.

18. See <<http://www.cfrs.nvi.net/>>.

19. See <<http://www.tufts.edu/fletcher/multilateral.html>>.

20. See "Legal Material Organized by Type or Source" <<http://www.law.cornell.edu/source.html>>.

21. See <<http://www.law.cornell.edu/uscode/>>.

22. See <<http://www.law.pace.edu/env/envIRON.htm>>.

Villanova Law School, which maintains the "Villanova Law School, Law Library."²³

Intergovernmental institutions have likewise ventured into the realm of the Internet. The United Nations, for example, has established a site providing hypertext links to locations containing information pertaining to UN programs, institutions, agencies and UN related activities, as have various international financial institutions including the InterAmerican Development Bank,²⁴ the World Bank,²⁵ and NADBank.²⁶

C. Retrieving Information: A basic introduction to accessing information on the internet

Several methods can be employed to locate information on the Web. If the user has the address of a web page, she can travel to that location by simply clicking on the "open" box of the tool bar, typing in the Uniform Resource Locator (URL), otherwise known as the "address," and hitting the "enter" key. If the user does not have an address she can activate one of the multiple search engines available on the Web and search the net for needed information. A search engine is a tool that sifts through the mass of information on the Web to locate sites of interest to the user. Yahoo!, Infoseek and Excite, are examples of some popular search engines. A user can activate a search engine by moving the cursor to the "Net Search" tool bar option or going into the "Directory" at the top of the screen and then scrolling down to the "internet search" option and clicking. Once activated, the user must type in a key word(s) or phrase(s) and then click "search." The search engine then goes to work exploring the Web for pertinent information, the found results of which are displayed to the user.²⁷ Careful selection of search terms will help prevent the retrieval of non-relevant information.²⁸

23. See <<http://www.law.vill.edu/vls/lawlib/info/chartweb.html>>.

24. See <<http://iadb.iadb.org/>>.

25. See <<http://www.worldbank.org/>>.

26. See <<http://www.quicklink.com/mexico/nadbank/nadbank1.htm>>.

27. Note that search engines can vary in how they search the web as well as in the manner in which they display the found locations. For example, when using the Infoseek search engine, results are listed in order of relevance based on a displayed numerical score indicating how well the document matches the search.

28. To learn more about how to choose the most effective search terms, users should take advantage of helpful tips provided by various search engines. Yahoo!, for example, includes on its search engine page, an "option" hyperlink that, if activated, will provide the user with detailed information about how to most effectively execute a search. See <<http://search.yahoo.com/search/help?>>.

Listservs, discussion groups and bulletin boards can also be used to gather and distribute information on the Internet. These services will provide members with information relating to a particular topic and connect them to others interested in the same area.

Other methods of information retrieval include E-mail (electronic mail) and Gopher. E-mail makes it possible to send a message from one computer to another in a matter of seconds. Furthermore, a document can be "attached" to an e-mail message and transported simultaneously to the e-mail recipient. Gophers provide users with lists of available Internet locations containing information on a variety of subjects.

D. The Internet as an environmental tool

By providing environmental professionals, government representatives, private sector actors and the public at large an inexpensive and efficient forum in which to exchange ideas and opinions, the Internet assists in attenuating traditional geographical, political and cultural obstacles, allowing for the freer flow of critical environmental information. In response to the relative low cost and minimal effort required to mount information onto the Web, the number of individuals, organizations, businesses and governments using the Web to disseminate information is increasing at a dramatic rate. In preparation for publishing a web page, text must first be translated into HyperText Markup Language (HTML). The text is then mounted on the Web with the help of a Web server, which is simply a computer connected to the Internet that enables other computers to access the web page.²⁹

So as not to contribute to the vast array of locations on the Web that are content deficient or simply redundant, it is advisable to perform a comprehensive search prior to putting information online. If identical or substantially similar information has already been mounted on the net, the user might opt to create a hyperlink to the relevant locations which will allow visitors to jump back and forth among locations, dramatically increasing the value of the site. By building upon the foundation of resources currently on the Internet, one adds to the value of existing resources, raises the value of new resources, and motivates others to do the same.

29. A user can obtain detailed information on the Internet about how to create a web page. Two examples of locations providing this information are: *How Do I Create A Web Page*, <<http://www.alpine.k12.ut.us/ASD/FAQ/WebPage.html>> and *Creating Net Sites* <<http://home.netscape.com/home/how-to-create-web-services.html>>.

Certainly an effective strategy for distributing information is to include an e-mail address or e-mail direct link on a web page. For years academics and other knowledgeable persons have used e-mail to communicate quickly and inexpensively; with the availability of e-mail in Windows format this number has substantially increased. Although fast and efficient as a communication resource, it is the low cost associated with e-mail that is perhaps its greatest attraction. Payment of a general Internet service fee is all that is generally required to obtain unlimited access to e-mail.³⁰ Obviously, as a low cost method of communication e-mail is especially valuable to those with limited financial resources; for instance, environmental public interest groups and many private citizens.

III. E-LINE

As information-packed as the Internet currently is, there is still no single, accessible, comprehensive environmental law resource on the net. Recognizing this void, CIEL developed, and is in the process of implementing, the E-Line initiative. E-Line was designed to use the Internet as an environmental legal tool. As a non-governmental organization (NGO) which provides both international and national comparative environmental legal services to governments, other NGOs, Inter-governmental organizations (IGOs) and law firms, CIEL has a daily need for current national environmental legal information.³¹ Any lawyer attempting to locate the national

30. For example, as of this writing, the Institute of Global Communications (IGC), a non-profit organization, has two basic rate plans in the Washington, D.C. area. For individual accounts, the monthly subscription fee is \$12.50 per month. This fee provides the user with twelve hours a month online, charging \$1.50 for each additional hour. Special services are offered for groups; for instance, groups of accounts billed to the same address and paid for by one organization are charged a monthly subscription fee of \$50.00 with each additional account costing \$5.00 per month. With this type of account, the first 40 hours per month are "free" and each additional hour costs \$1.00. IGC also offers special rates for high volume users. One should note, however, that due to increased traffic on the Internet tying up phone lines, there is the possibility that additional fees for e-mail use might be imposed in the future. For more information about the Internet's effect on telephone services, see Lee L.Selwyn & Joseph W. Laszlo, *The Effect of Internet Use on the Nation's Telephone Network* (visited Jan. 22, 1997). <http://www2.itic.org/itic/eti_xsum.html>.

31. CIEL was founded to employ the resources of the public interest environmental law movement in order to strengthen and develop international and comparative environmental law, policy, and management throughout the world. The institutional goals of CIEL are to: (1) solve environmental problems and promote sustainable societies through law; (2) incorporate fundamental principles of ecology and democracy into law; (3) strengthen national environmental law systems and support public interest movements around the world; and (4) educate and train public-interest-minded environmental lawyers. See <<http://www.econet.apc.org/ciel/>>.

environmental legal information of a foreign country understands the challenge this task presents. In many cases, access to foreign environmental legislation is restricted or extremely disorganized, making the gathering of information exceedingly difficult. Furthermore, once located, interpreting the material is often likewise a formidable task.

Because costly private sector law firms and other 'for profit' services have traditionally been used to procure needed country-specific legal information, it is those with money that have also traditionally had access to these resources, namely corporations. For example, a public actor would unlikely be able to afford services provided by The Barrows Company which will supply the complete texts of oil laws, contracts and concessions, in all countries, for an initial subscription price of \$6,850 with an \$1,800 yearly renewal fee.³² Other options include hiring a private law firm, which can run several thousand dollars depending on the task or, using the online commercial resources of Lexis/Nexis or Westlaw, also very costly, which provide searchable law, journal and news libraries.³³ Unlike many law firms and corporations, citizens and NGOs, as well as other non-state actors, often lack the financial resources necessary to employ these costly services. As a result, public sector environmental participants are too frequently at a disadvantage in their fight to curb pervasive global environmental degradation. Because of its low cost, efficiency, and the limited tools necessary (computer and modem), the Internet is a logical tool to use in the attempt to balance existing information inequities.

A. Strategy

Prior to recent developments in Internet technology, CIEL experimented with a hardcopy "State of Environmental Law" project intended to provide current national environmental legal information in printed form through the publication of national environmental law handbooks. However, in 1990, then-Senator Al Gore convened a meeting of parliamentarians in Washington, D.C., entitled Global Legislators Organized for a Balanced Environment (GLOBE). It was at this meeting that the idea was introduced to use CD-Rom technology to advance the accessibility of national environmental information. CIEL agreed to work to develop this idea

32. See <<http://www.barrows-company.com/banner.htm>>.

33. Lexis/Nexis, for instance, charges a \$125 per month subscription fee, an additional 75 cents for every minute online, and rates for printing begin at \$2.75 per document. (These were the rates quoted to the author as of this writing.)

but made one change; replacing the use of CD-Rom with the Internet. This idea evolved into what is now the E-Line initiative.

CIEL developed E-Line in order to make *widely* available national environmental legal information at a *low cost*. E-Line represents a system of country-specific environmental law databases containing information on the relevant laws, regulations and secondary materials for each country. The first step in the E-Line system is to draft a series of 50-100 page national environmental law handbooks describing key laws and features of a country's environmental legal system, written by local partners and following a uniform template. E-Line's audience is expected to include law firms, law faculties, citizens, NGOs, IGOs, parliamentarians, ministries of environment and corporations. The E-Line strategy is to combine electronic Internet technology with motivated/self-interested parties. A twenty-five point template developed by CIEL, provides the framework upon which country-specific environmental legal information is mounted on the Internet.³⁴ Through furnishing the means by which to organize information, E-Line aims to facilitate and catalyze others to add resources to the skeletal structure of the template.³⁵ E-Line is intended to not only provide national environmental laws on the Internet but to do so in a manner that promotes comparative analysis of national and regional environmental norms.

The points of the template were selected to best represent the universal characteristics of environmental issues and to enhance the comparative benefits of the database. For example, Section 1 of the template, *Introduction to the Legal System*, provides information about the structure of a country's government, the sources and hierarchy of its law, and the role of the legislature in the law-making process. This section is intended to provide the background needed to understand the legal dynamic of a country and its laws. Examples of other template categories are as follows: (1) Section 8,

34. The current twenty-five point E-Line template is being expanded to include additional sections such as a section on environmental law relating to indigenous peoples.

35. CIEL is basing its strategy on the prediction that the evolution of the Internet in other areas of the world will mimic that occurring in the United States and other developed countries. Of course this will not happen without significant capacity development in the area of telecommunications. For this reason, the E-Line initiative was designed to assist in building the capacity of local private and public institutions in the area of telecommunications by providing comprehensive hands-on Internet and environmental law training for project participants, including periodic training seminars at E-Line project offices and to provide public access to the database through research centers at universities and libraries.

Protection of the Atmosphere,³⁶ (2) Section 12, *Waste Management*,³⁷ and (3) Section 16, *Environmental Management of Public Lands*.³⁸ By providing the framework upon which to build a coherent environmental legal database the template will serve as a model to emulate in other areas of law; for example, trade.³⁹

A critical element of the E-Line strategy is the establishment of local partnerships in project countries. Only local lawyers have the ability to truly understand the laws of their country and once assembled, perform the necessary interpretation of those laws. CIEL's partnership with the Washington College of Law, American University, in the sponsoring of the Joint Research Program in International and Comparative Environmental Law, will supply a source of both present and future local partners. The L.L.M. program consists of approximately 180 students from over sixty countries, continually providing an invaluable international human resource.

36. Section 8, *Protection of the Atmosphere*, provides information relating to: (1) the establishment of air quality standards; (2) permitting requirements; and (3) liability and enforcement.

37. Section 12, *Waste Management*, provides information relating to: (1) criteria and definition of wastes; (2) treatment, storage and disposal; (3) waste reduction (including recycling or reuse policies); (4) siting issues; and (5) liability and enforcement.

38. Section 16, *Environmental Management of Public Lands*, provides information relating to: (1) institutions of public land management; (2) protected areas and parks; and (3) protection of cultural or national heritage.

39. The following constitutes the current E-Line template:

1. Introduction to the Legal System
2. Institutional Framework for Environmental Protection
3. Constitutional Provisions
4. General Environmental Law and Policies
5. Environmental Information
6. Public Participation
7. Environmental Impact Assessment
8. Protection of the Atmosphere
9. Protection and Management of Water Resources
10. Protection of the Oceans and Coastal Areas
11. Chemical Substances and Products
12. Waste Management
13. Responding to Environmental Contamination
14. Environmental Emergencies
15. Private Land Use Planning and Management
16. Environmental Management of Public Lands
17. Conservation of Biological Diversity and Wildlife
18. Mining
19. Agriculture
20. Forests and Forest Management
21. Energy
22. Transportation
23. Military or Federal Facilities
24. Other Domestic Environmental Issues
25. Transboundary and International Issues

B. Organization and Execution

CIEL, in cooperation with selected local partners, will provide the template, server and home page necessary to maintain the full-text electronic database. Additionally, CIEL will coordinate with project country partners to prepare the country-specific environmental law summaries. Although getting online national environmental law summaries is the first step in establishing the E-Line system, additional objectives include providing the following: (1) critical analysis of environmental issues; (2) summaries of significant judicial decisions impacting the state of environmental law; and (3) information on proposed legislative and regulatory action. The E-Line initiative is intended to stimulate others, including project country law schools, NGOs, IGOs, governments and private actors, to assist in the development and maintenance of national databases and to contribute resources to the database. For example, an annual "Report Card" or "State of Environmental Law" might be developed to compare global and regional norms. A country report card might include evaluations regarding public participation or environmental impact assessment in which a country could be graded and receive anywhere from an "A" to an "F" for its environmental practices. Such a grading system would facilitate the ease with which one could compare environmental laws, policies and priorities among countries, thus enhancing the ability to identify strengths and weaknesses of existing environmental legal mechanisms on the state, regional and international level.

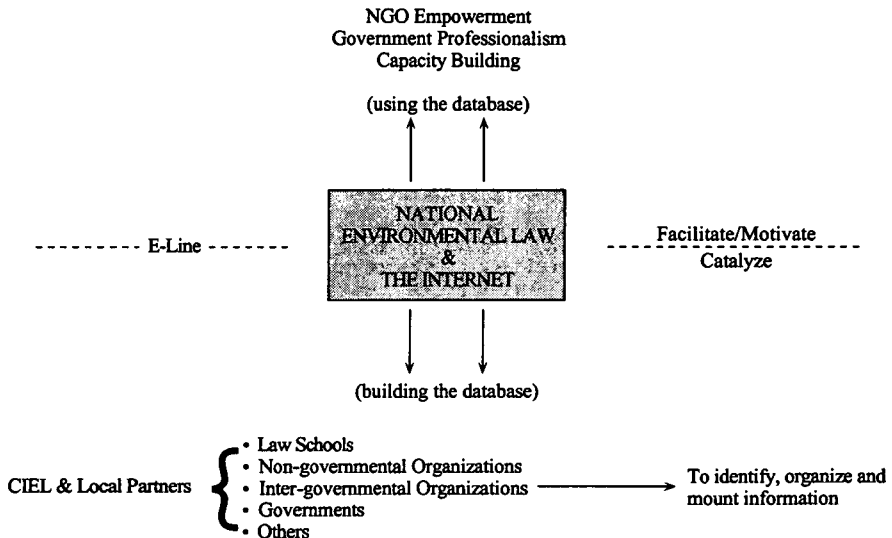
E-Line is also expected to be expanded to include analysis and interpretations of national, regional and global environmental norms. The analysis may be general or issue specific. An example might be the issue of *forum non conveniens* as applied to the case of *Delgado v. Shell Oil Co.*⁴⁰ This federal action was a product liability case brought by citizens of twelve foreign countries seeking damages for injuries allegedly sustained from exposure to a nematocide while working on farms in twenty-three countries. Following removal from U.S. state court and consolidation, defendants filed motions to remand and dismiss on grounds of *forum non conveniens*. The applicable standard of review to be applied by the court in deciding this issue requires that the court consider in which forum the trial will "best serve the convenience of the parties and the ends of justice."⁴¹ Defendants and plaintiffs combined presented the court with more than fifty affidavits by experts arguing that the mo-

40. See *Delgado v. Shell Oil Co.*, 890 F. Supp. 1324 (S.D. Tex. 1995).

41. *Koster v. Lumbermen's Mut. Cas. Co.*, 330 U.S. 518, 527 (1947).

tion should be granted or denied, respectively.⁴² The affidavits embodied extensive expert analysis as to the adequacy or ability of the relevant countries' judicial systems to handle a case of this kind. The E-Line database provides the forum in which this type of pertinent legal analysis can be presented and reviewed. In other words, if managed effectively, the initial E-Line investment (establishing the framework for an environmental law database) will result in long-term dividend returns in the form of complementary environmental legal information included in the database.

By providing the structure upon which others can mount various types of related legal information, E-Line is expected to encourage others to connect and contribute to the substance of the database, promoting a cooperative effort necessary to get online a valuable environmental legal resource. The following is a visual depiction of the E-Line system:



The E-Line system is already in place as a North American prototype created for the NAFTA Commission for Environmental Cooperation (CEC).⁴³ The tri-national environmental law database,

42. Expert testimony in the form of affidavits were provided by experts from several countries, including Costa Rica, Ivory Coast, Ecuador, Nicaragua, and the Philippines.

43. See <<http://www.cec.org>>. The 25 point template for the CEC's Environmental Law Database was prepared by CIEL and the summaries were prepared by the following: (1) United States, CIEL; (2) Canada, Quebec Environmental Law Centre (QELC) and the West Coast Environmental Law Research Foundation (WCELR); and (3) Mexico, Centro Mexicano de Derocho Ambiental (CEMDA).

offered in English, French and Spanish, follows the twenty-five point template and consists of three separate handbooks presenting the relevant laws of the United States, Mexico and Canada.

By enabling a user to quickly travel from one section in the United States Environmental Law Summary to the same section in the Mexican Environmental Law Summary by way of internal hypertext links, the user is able to easily compare the similarities and differences between the two countries regarding a particular area of the law. It is important to understand that in addition to internal hypertext links connecting the project country environmental law databases within the CEC location, there are external hypertext links that allow the user to travel back and forth "outside" the central database to external sources. For example, the CEC U.S. Environmental Law Summary provides several hundred such links connecting text to other information rich locations, including the Cornell Law School's United States Code database providing the full text of statutes and regulations. *To view the Brief Table of Contents from the CEC environmental law database, see APPENDIX A.*

The CEC Environmental Law Summary is a modest, small scale example of the global E-Line initiative. Already, through funding from the United States Agency for International Development (USAID), the E-Line system is being expanded to include Paraguay and Ecuador. Additionally, CIEL has entered into an Agreement for Cooperation with the Organization of American States (OAS) to expand E-Line in the Western Hemisphere, and has also reached an Agreement In Principal with the Library of Congress to cooperate and integrate E-Line into the GLIN database. There are also plans to expand E-Line to other nations in the Inter-American region, Asia and eventually the entire globe.

C. Objectives/Benefits

The E-Line project was developed to meet the following seven primary policy objectives:

- to promote transparency, by making available national environmental laws at a low cost via the Internet;
- to promote accountability, by disseminating national environmental legal information to relevant actors including law firms, corporations, lending institutions, citizens, NGOs and government agencies;
- to increase the capacity of civil society to participate in the law-making process, by providing critical environmental legal infor-

- mation and by working together to create and maintain the database;
- to build the capacity of local private and public institutions in the area of telecommunications;
 - to increase private corporate knowledge of, and capacity to comply with, environmental laws;⁴⁴
 - to facilitate the convergence and upward harmonization of national environmental laws among trading partners, thereby reducing hidden subsidies and other non-tariff barriers; and
 - to promote increased trade and investments in countries with adequate environmental laws.

The E-Line system will assist in enhancing the ability to monitor and evaluate domestic environmental practices and will likewise bring attention to the strengths and weaknesses in existing environmental laws. Additionally, by promoting the distribution of needed environmental information, the “professionalism” of project country governments may improve. Having available information relating to domestic environmental legal norms and institutional mechanisms, often difficult to access, will strengthen the ability of those seeking to influence environmental developments by better equipping them to work within the institutional framework of a given country. Governments which have not heretofore done so may be pressured to implement and enforce existing environmental laws and to amend or enact necessary legislation. By providing citizens, NGOs and parliamentarians with a cost-effective means of access to information relating to country-specific environmental norms, E-Line will serve to reduce the financial obstacle too often impeding the retrieval of national environmental legal information. This will in turn empower those who do not have a formal, clearly delineated, position to influence environmental law development, strengthening efforts to control environmental abuse. Because knowledge of the law translates into knowledge of one’s rights, the E-Line system will serve to help educate and empower civil society with the information necessary to protect those rights. Increased transparency of environmental legal standards promote the increased enforcement and public disclosure of noncompliance, increasing the demand for environmental technologies and services from trading partners.

44. This will be particularly applicable to local corporations, soon to face pressure to obtain certification as in compliance with the ISO 14001 series obligations calling for the establishment of an environmental management system. See generally Thomas J. Schoenbaum, *International Trade and Protection of the Environment: The Continuing Search for Reconciliation*, 91 A.J.I.L. 268 (1997).

The benefits of E-Line are not meant to be exclusive to those with limited financial resources. Although E-Line is intended to increase the level of public participation in the development and implementation of environmental laws, it will also provide valuable benefits to governments and private investment communities. By increasing the ability to conduct comparative research on environmental law, E-Line will promote the convergence of environmental standards, reducing hidden subsidies and other non-tariff trade barriers. Furthermore, by increasing the private sector's knowledge of, and capacity to comply with, environmental laws and regulations, E-Line will support environmentally sound and sustainable economic development. Governmental expenditures committed to environmental enforcement may be reduced as a result of both improved voluntary compliance on the part of private enterprise, and the capacity of both public and private institutions in the area of telecommunications. International environmental legal instruments consistently identify cooperation among States as an essential element to successful environmental management.⁴⁵ Embodied in the obligation to cooperate is the need to promote the exchange of information relevant to the environment. By establishing a country specific environmental law database which is low in cost and user-friendly, E-Line will assist government efforts to satisfy this obligation.

D. Sustaining the E-Line System

In order to ensure the sustainability and currency of the E-Line system, as well as provide for expansion, measures will be taken to establish staff research centers in project countries capable of researching and mounting new and relevant environmental information. Because Internet accessible information is of no value without computers and those capable of operating them, the research centers will provide access to computers and offer user training and support through universities, public libraries and government offices.

IV. CONCLUSION

Through the promotion, development and expansion of environmentally sound and sustainable economic decision-making in both project countries and globally, the private sector, government

45. See generally Chapter 3, The Duty to Cooperate "Concepts and Principles of International Environmental Law: An Introduction" by David Hunter et al., UNEP 1994.

and the public will benefit. Because informed decision-making is essential to the evolution of responsible environmental management policies, by equipping environmental actors with a legal information resource formatted in a clear and concise manner, E-Line will contribute significantly to this process.

By employing Internet technology, E-Line will effectively promote upward "harmonization" or "approximation" of national environmental legal mechanisms, thus leading to increased sustainable environmental management of the earth's natural resources both domestically and internationally. Combined with its capacity-building elements, E-Line will help build the well-informed and capable human resource base so desperately needed to salvage the decaying state of our environment.

If not already patently obvious, the need for the availability and exchange of information aimed at promoting environmentally responsible management of our natural resources is evidenced by language in almost every environmental treaty calling for cooperative efforts involving the generation and exchange of environmentally relevant information.⁴⁶ The Internet is a "critical environmental technology" because of its ability to effectuate just such an exchange. Fundamental to the growth, development and management of national and international environmental resources is a clear understanding of the legal mechanisms influencing environmental policy. An independent understanding of national environmental norms within the broader context of the international playing field is required in order to realistically address the global state of the environment. By promoting comprehensive comparative practices, E-Line assists environmental actors, state and non-state, in identifying the strengths and weaknesses of existing environmental legal mechanisms both nationally and internationally. Subsequently, these actors will have the knowledge to act independently and cooperatively to remedy existing environmental problems and build on environmental victories by promoting informed decision-making. The Internet can serve as a formidable weapon in the battle to save the world's natural resources; we need only accept this, and act accordingly. Although great strides have been made in the last twenty-five years regarding environmental awareness and action, it is essential that environmental law evolve at a faster pace if there is any possibility of catching up to the current rate of decay of the environment.

46. Hunter, *supra* note 46.

APPENDIX A

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Summary of Environmental Law in North America

CEC

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