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Resource Law Notes: The Newsletter of the  
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Winter 2002

### Resource Law Notes Newsletter, no. 53, winter, Feb. 2002

University of Colorado Boulder. Natural Resources Law Center

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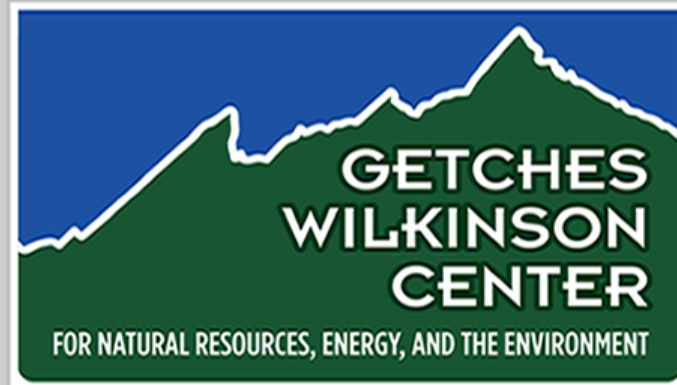
#### Citation Information

Resource Law Notes: The Newsletter of the Natural Resources Law Center, no. 53, winter, Feb. 2002  
(Natural Res. Law Ctr., Univ. of Colo. Sch. of Law).



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# RESOURCE LAW NOTES



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Natural Resources Law Center

School of Law

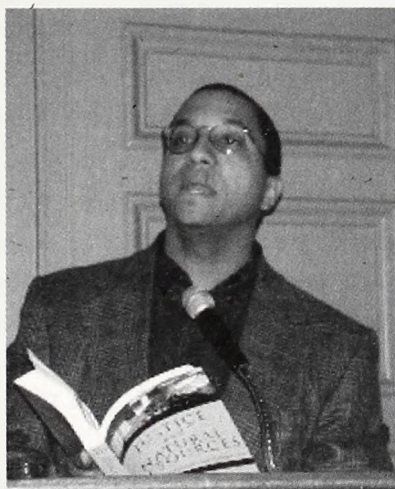
University of Colorado at Boulder

Number 53

Winter, February 2002

## Upcoming Events

- March 5, 2002: Hot Topics  
Public Instream Flow Rights (tentative)
  - April 4-5, 2002: Coal-bed Methane  
Conference
  - April 11, 2002: Hot Topics  
Coal-bed Methane (tentative)
  - April 24, 2002: Short course on the  
Endangered Species Act
  - April 24-27, 2002: Communities and  
Western Wildfire: An Experiential Field  
Tour for Journalists
  - May 20, 2002: Hot Topics  
Non-Federal Hydropower Relicensing
  - May 29, 2002: Endangered Species Act  
Workshop
  - June 11-14, 2002: Annual Conference  
"Allocating and Managing Water for a  
Sustainable Future: Lessons from Around  
the World"
  - June 19, 2002: Endangered Species Act  
Workshop
  - July 15, 2002: Endangered Species Act  
Workshop
  - September 19, 2002: Endangered Species  
Act Workshop - Denver
  - Fall 2002: NRLC 20th Anniversary  
Celebration
- (some dates subject to change)



David Pellow reads from NRLC's book *Justice and Natural Resources* during the Center's recent book release party.

**Conference Agenda &  
Registration Form  
Enclosed!**

## A NOTE FROM THE NEW DIRECTOR

This year, the Natural Resources Law Center is celebrating its twentieth anniversary. In that time, the Center has established itself as one of the leading centers of scholarship of and about the West, its natural resources, its environment, and its peoples. We have strived to be objective and fair and to provide a neutral setting where every stakeholder feels comfortable in joining the discussion about the West's past as well as its future. Over those same twenty years, western lands and water management has evolved, at times dramatically; we believe that the Center's role in that process has been a positive and constructive one.

It is a genuine pleasure to join an institution with such a remarkable record of accomplishment. I am humbled to work in the company of people like David Getches, Charles Wilkinson, James Corbridge, John Sayre and Clyde Martz. My colleagues at the Center are prolific writers and researchers. The University of Colorado Law School is a national leader in environmental and natural resources law and a terrific catalyst for scholarship. And we are finding greater and greater rewards in our interdisciplinary work with physical and social scientists from the University and other research institutions.

My goal as director of the Natural Resources Law Center is a simple one: to build and expand upon the work the Center has done, and to maintain its pride of place among institutions that are working to sustain the West's environment, natural resources, economies, and communities. Over the next few months you will be hearing more about our pioneering summer water conference, our plans for the future, and the celebration of our twentieth anniversary. I look forward to working with every one of you, and I hope you will feel free to contact us with your ideas about the Center's next twenty years.

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## WATER CONFERENCE TO HAVE AN INTERNATIONAL FLAVOR

In honor of the Center's twentieth anniversary, our upcoming summer water conference will feature speakers from around the world as well as U.S. speakers with international experience. We haven't abandoned our western U.S. focus, but rather have decided to import lessons from foreign nations dealing with similar water management challenges.

*Allocating and Managing Water for a Sustainable Future: Lessons from Around the World* will begin with a full day of free public lectures, featuring approximately 60 presentations from water experts in the U.S. and abroad. The following three days, open to conference registrants only, will feature in-depth discussions examining the use of markets and policy processes in water allocation; mechanisms for integrating environmental, cultural, and other values in water regimes; and conflicts and cooperative efforts associated with transboundary water resources. The goal will be to identify strategies for achieving sustainability in the West.

Domestic presenters include Peter Gleick, Pacific Institute for Studies in Development, Environment and Security; Helen Ingram, University of California, Irvine; Aaron Wolf, Oregon State University; and Dan Tarlock, Chicago-Kent College of Law. Panelists from Europe, Africa, South America, North America, and Australia are also confirmed, drawn from a variety of academic organizations, governments, and major international organizations including the World Bank and United Nations. The full conference agenda is enclosed in this issue of *Resource Law Notes*.

In addition to our normal conference activities, a variety of field trips and other events will also be offered. Additionally, conference materials will be crafted into a book, making the event available to a much larger western and international audience.



## Comings and Goings

### Advisory Board



NRLC Director, Jim Martin, and new NRLC Advisory Board member, Felicity Hannay.

### Hannay, Eid and Cowles Join NRLC Advisory Board

The Natural Resource Law Center has always been fortunate to have an advisory board comprised of people of great distinction and experience in the field of environmental and natural resources law. That tradition continues with the three newest additions to our advisory board.

**Troy A. Eid** is a native Coloradan educated at Stanford and the University of Chicago Law School. After graduating law school, Troy clerked for Judge Edith Jones of the U.S. Court of Appeals for the Fifth Circuit, practiced law with the firm of Holme Roberts & Owen in Denver, and then served as General Counsel for InfoTEST International. More recently, Troy has been a member of Governor Bill Owen's staff and cabinet. Currently, Troy is the executive director of the Colorado Department of Personnel and Administration. He is the Chief Administrative Officer for the state's \$13.2 billion state government and is responsible for Colorado's 46,000 state employees (the largest work force in the state). Previously, Troy served as the Governor's Chief Legal Counsel.

**Felicity Hannay** was appointed by Colorado Attorney General Ken Salazar in January 1999 as Deputy Attorney General for Natural Resources and Environment. In that capacity, Felicity supervises approximately forty other lawyers, who in turn represent Colorado's environmental, water and other natural resources agencies, boards and commissions. Felicity obtained her undergraduate degree from Vassar College and her law degree from Boalt Hall School of Law, University of California at Berkeley. Her first job as a lawyer was with the Denver law firm of Davis, Graham & Stubbs. She started there as an associate, became a partner, and stayed until she joined the Attorney General's Office. Felicity is a past trustee of the Rocky Mountain Mineral Law Foundation.

**Macon Cowles** is a lawyer who specializes in representing individuals and citizen groups in toxic tort, environmental, civil rights, class action and employment cases. Among Macon's many cases, he was the lead environmental lawyer and a member of the Plaintiff's Executive Committee in the Exxon Valdez Oil Spill Litigation. He was also the lead plaintiff's lawyer in litigation seeking the cleanup of the neighborhood that surrounds the Asarco Globeville facility in Denver. Macon has been on sabbatical for the past two years and has been collaborating with others to develop scenarios for sustainable growth in Colorado. During that time, he has written the city of Boulder and Boulder County's sustainability policy, and was invited by the Homebuilders Association of Colorado to join a committee developing green standards for the building industry.

### NRLC Staff

**Jeannie Patton** joined us in October on the heels of a two-decade career in communications, education, and marketing. After receiving her Master's from the University of Northern Colorado (Greeley), she moved to Steamboat Springs (Director of Public Relations for both the ski area and the Sheraton Resort Hotel) and then back to her native Boulder to open a communications consulting firm. The author of more than 160 newspaper and magazine articles related to the American West, she has taught journalism, writing, literature and research courses to college freshmen and sophomores, and enjoyed a 10-year stint as a Contributing Editor to SKI magazine. A former river guide and rock climbing instructor, she serves as NRLC's Events and Outreach Coordinator.

**Adam Foster** has spent his whole life in Colorado, with the exception of a semester abroad in Guadalajara, Mexico. He spent the last three years working at Keystone ski resort creating and implementing bilingual job training for the hospitality department. Prior to his career as a ski bum, Adam earned a bachelor's degree in Anthropology from CU Boulder. Adam's background in Anthropology piqued his interest in the NRLC's Environmental Justice project, and he is currently working as a research assistant on the project. When he is not busy being a first-year law student, Adam enjoys travel, camping, skiing, and playing the conga drums. He is very excited to have the opportunity to contribute to the NRLC and meet more people within the Environmental Law community.

**Amy Anderson**, a native of Oregon is just about to finish up her undergraduate degree in Environmental Studies and Political Science at CU. She has worked extensively with the CU Environmental Center and has joined the Natural Resources Law Center for the 2002 spring semester as a student intern assisting with June conference preparations. Amy loves the outdoors and tries to spend most of her time just enjoying the Colorado sunshine.

**Scott Zhong**, continues as a work-study this semester processing publications orders and assisting with IT issues. He is a freshman from Aurora majoring in computer engineering.

We miss **Antje Becker** and wish her all the best. She was unable to continue as a work-study because of scheduling conflicts this semester.

### Spring 2002 Hot Topics

Dates and topics to be updated on our website: [www.colorado.edu/Law/NRLC](http://www.colorado.edu/Law/NRLC)



# Mining and Sustainable Development: Insights from International Law

*Ma. Cecilia G. Dalupan*

2001 El Paso Energy Corporation Law Fellow

In recent years, an increasing number of national and international initiatives have focused on the role of the mining and minerals sector in the context of the sustainable development paradigm definitively ushered in at the World Summit on Environment and Development held in Rio de Janeiro in 1992. At present, numerous governments have established regulatory frameworks covering not only permitting, fiscal or other conventional legal aspects of mining but also broader provisions on environmental and social issues. Industry associations in different countries have also formulated voluntary codes of conduct and best practices covering these areas.

Internationally these are paralleled by efforts of multilateral development and financial institutions as well as governments, industry associations, non-government organizations and other sectors that are involved in various international initiatives, including those of the United Nations Environment Programme and the World Bank, and projects such as the Mining, Minerals, and Sustainable Development Project (MMSD) initiated by the World Business Council on Sustainable Development and the industry's Global Mining Initiative.

Common to initiatives focusing on mining is the effort to identify issues of a more global nature that are commonly experienced with respect to mining in different countries, and to formulate operation and conduct principles that may have general relevance and application. These global issues involve environmental and social impacts of mining and related economic considerations. These concerns – environmental protection, social development and economic issues – constitute the three pillars of sustainable development which is, as defined the 1988 Brundtland Report of the World Commission on Environment and Development, development that meets the needs of the present without compromising the future.

Identifying global issues and formulating general principles raises the possibility that these efforts could lead to the development of international law on mining and mineral resources in the even broader context of international law on sustainable development.

The objective of the fuller study on which this article is based is to analyze how and to what extent international conventions and principles of sustainability are relevant to the development of international law on mining and sustainable development, beginning with a fundamental question: What is the present 'state' of mining in international law and specifically in multilateral agreements?

This article provides an overview of multilateral agreements as they relate to or impact mineral resources exploration, development and utilization. It begins with an analysis of the state and treatment of mining in international conventions, with emphasis on the growing body of international environmental law and agreements entered into in the last three decades, then explores the challenges that recognized and emerging principles of sustainable development pose for the mining sector and the development of international law on mining.

## 1. MINING IN MULTILATERAL AGREEMENTS

International law generally refers to legal relations governing states. The subjects, however, may include international or inter-governmental organizations and even individuals and non-state entities under special circumstances. The Statute of the International Court of Justice (1920), then annexed to the Charter of the United Nations (1945), provides that international conventions or treaties constitute one of the sources of international law. Also called treaties, international conventions have been used to establish governance regimes or regulatory frameworks covering particular geographical areas or subject matters concerning which states may share an interest, though they may be divergent or even conflicting.

An area of international law that developed in the last three decades pertains to environment and natural resources. Earlier in the 20<sup>th</sup> century, such international agreements were largely driven by the need or desire to regulate the use of shared resources or to address transboundary environmental impacts. Thus, the different states' national interests served as impetus for inter-governmental agreement and action, which may certainly be said of international agreements in general, regardless of subject matter. It was in the states' individual national interests to prevent or resolve conflicts and arrive at agreements concerning the management, and thus, economic usefulness, of shared cross-boundary resources.

While there are some early examples of international conventions entered into for primarily environmental reasons, in the late 1960s and early 1970s an 'ecological era' dawned, from which point a very diverse and broad body of international environmental law has developed and continues to expand. Multilateral environmental agreements now number well over a hundred, covering sectors like atmosphere and space, marine and coastal resources, fisheries, flora and fauna, biodiversity and forestry.

Multilateral environmental agreements have traditionally been response-oriented: two or more states with problems sought resolution. However, while national self-interest is the fundamental and immediate driver for participation in an international agreement, regional and even global environmental concerns, together with their economic implications, are important motivations as well. Examples include agreements on desertification, drought, ozone depletion, loss in biodiversity, pollution and industrial accidents and global warming or climate change.

It appears at the outset no formal or general international law with respect to mining and mineral resources exists in the same way as a law of the sea or a convention on biological diversity. Neither is there an international convention or inter-governmental statement of principles as in the case of forestry. Nevertheless, a broad survey of multilateral agreements yields significant observations with respect to mining and mineral resources.

### The Sovereign Right to Exploit Natural Resources and Its Limitations

The sovereign right of a state to exploit mineral and other natural resources within its jurisdiction is one of the basic principles of resource utilization. This right, however, is not and has never been absolute, but has been qualified by the corollary responsibility of a state to ensure that activities within its jurisdiction or control do not cause damage to the environment beyond its national jurisdiction.

The recognition of this right and duty not to cause transboundary environmental harm has been reiterated in international conventions and declarations including the Charter of the United Nations (1945), Convention on the Continental Shelf (1958), the Convention On Long-Range Transboundary Air Pollution (1979), the Stockholm Declaration on Human Environment (1972), the Rio Declaration on Environment & Development (1992) and the UN Convention on Biological Diversity (1992).

The Aarhus Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution of Heavy Metals (1998) clearly has particular relevance to the mining and minerals sector. Its objective is to control heavy metals emissions caused by anthropogenic activities that are subject to long-range transboundary atmospheric transport, and are likely to have significant adverse effects on human health or the environment. To this end, parties to the Protocol commit to reduce their total annual emissions into the atmosphere of certain heavy metals through measures appropriate to their particular circumstances. The Protocol also provides, among others, guidelines for the best available techniques for controlling and general options for reducing emissions of heavy metals and their compounds.



However, the duty not to cause transboundary environmental harm may not be the only limitation on a state's sovereign right to exploit its natural resources. By entering into conventions which provide for limitation and even prohibition of mineral extraction in areas identified for preservation or conservation, states have recognized the legitimacy of curtailing their sovereign rights of resource exploitation. This is true even in early international agreements such as the Convention Relative to the Preservation of Fauna and Flora in their Natural State (1933) entered into by the then Union of South Africa, Belgium, the UK, Egypt, Spain, France, Italy, Portugal, and the Anglo-Egyptian Sudan, which prohibits mining and other development activities in strict natural reserves. This prohibition carried on to the African Convention on the Conservation of Nature and Natural Resources in 1968.

Similarly, the growing body of multilateral environmental agreements and conventions on social concerns indicates that the sovereign right to exploit one's natural resources may no longer be qualified just by the duty not to cause transboundary environmental damage. Even the manner and extent of exploitation within a state may be subject to various qualifications in multilateral agreements to which it is a party or to which it may become subject as a result of customary practice in international law.

Multilateral agreements and declarations have also been formulated on primarily social dimensions which may impact on the manner and extent in which mining and other development activities are carried out, even within the boundaries of a sovereign state. Examples are the Copenhagen Declaration on Social Development and Programme of Action of the World Summit for Social Development (1995), the Aarhus Convention containing Guidelines on Access to Environmental Information and Public Participation in Environmental Decision-making Convention, and International Labor Organization Convention 169 on Indigenous and Tribal Peoples in Independent Countries (1989).

Convention 169, for example, provides that the rights of indigenous peoples to the natural resources pertaining to their traditional lands, including the right to participate in their use, management and conservation, shall be specifically safeguarded. It further provides that in cases where the state retains the ownership of mineral or sub-surface resources, governments shall establish or maintain procedures through which they shall consult these peoples, with a view to ascertaining whether and to what degree their interests would be prejudiced, before undertaking or permitting any programs for the exploration or exploitation of such resources pertaining to their lands. The people concerned shall wherever possible participate in the benefits of such activities, and shall receive fair compensation for any damages which they may sustain as a result of such activities.

In summary, principles found in multilateral and other environmental agreements, insofar as they are binding on states that have voluntarily entered into the same or are recognized as customary in international law, necessarily affect where and how mining is carried out even within the boundaries of a sovereign state.

#### **International Governance Regimes for Mineral and Other Resources**

As noted, there does not appear to be any international governance regime or statement of principles for mining or mineral resources, in contrast with many other resources that have in common their nature as renewable resources. Examples lie in the sectors of agriculture, fisheries, marine and coastal resources.

With respect to fisheries, marine and coastal resources, exhaustive legal texts such as the Fisheries Convention (1964) and the United Nations Law of the Sea (1982) exist together with many other regional agreements formulated over the last five decades. These cover a wide range of living resources including tuna, salmon, dolphins, seals and whales. Bodies of water such as the Black Sea, Atlantic Ocean, Pacific Ocean, the Mediterranean Sea, the Rhine, West and Central African Region, Eastern African Region, Red Sea, Gulf of Aden, Baltic Sea and the Black Sea are given special focus.

In forestry, the international community formulated the Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests (1992) at the World Summit on Environment and Development.

Its long-winded, ambivalent title reflects the difficulty in its negotiation and formulation. Since 1992, however, various regional agreements indicate progress in forestry resources protection, management and utilization.

Mineral and other non-renewable resources may not have lent themselves as readily to international standards or principles as marine or other renewable resources. While various factors – including the different kinds of minerals and their uses, the wide variety in methods of extraction, and the differences in physical environments and climates where mining takes place – make forming general principles difficult, they do not present an impassable roadblock.

One significant factor may be the 'size' of the global mining industry in that the level of capitalization is relatively small. Hence, the necessary impetus for broader action such as the formulation of treaties may not have existed. Perhaps even more significant, is that mineral resources are rarely shared in nature, unlike marine and water resources traversing two or more states. And despite dire predictions such as the Club of Rome's 'The Limits to Growth' (1972), mineral reserves have not been depleted, but are reportedly stable and even increasing at the same time that recycling and other technologies contribute to a longer life cycle of metals. In contrast, an international response has been considered imperative with respect to forestry and biodiversity in order to arrest deforestation and the loss of species.

Furthermore, mineral deposits are usually identified within the boundaries of a particular state, and their extraction can almost always be limited within that state even when mineralization happens to extend beyond it. In exceptional instances where the mineralization does cross borders, as in the Pascua-Lama deposit shared by Argentina and Chile, the countries did enter into agreement. That mineral activities and their impacts are generally confined within the jurisdiction of a particular state is relevant to understand why little action has been taken by the international community on appropriate standards or guidelines of operation. This is confirmed by the fact that, where the few international governance regimes for mining do exist, they apply only to areas beyond national jurisdictions.

#### **Mining Regimes in Areas Beyond National Jurisdictions**

Outer space, the deep seabed and Antarctica are all areas beyond any national jurisdiction; consequently, they are not 'owned' by any one state. However, the first two resources are treated in relevant international conventions as constituting the 'common heritage' of humankind, which connotes that it is a resource owned by all and that consequently, any development should benefit all.

##### *Outer Space: The Moon and Other Celestial Bodies*

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (1967) expressly provides that these bodies are not subject to national appropriation by claim of sovereignty, use, occupation, or any other means. It states a common interest in the exploration and use of outer space for peaceful purposes that should be carried out for the benefit of all peoples, without discrimination and with the interest of maintaining international peace, security and international cooperation and understanding.

The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (1979) definitively characterized the moon and its natural resources as the 'common heritage of mankind' beyond national appropriation by any claim. It recognizes freedom of scientific investigation on the moon by all states-parties, pursuant to which they shall have the right to collect and remove from the moon samples of its mineral and other substances. They may in the course of scientific investigations also use mineral and other substances of the moon in appropriate quantities.

To prevent the moon from becoming an area of international conflict, the states-parties to the treaty undertook to establish an international regime to govern the exploitation of its mineral and other natural resources, characterized by rational management and equitable sharing of benefits.

Since these treaties were formulated, exploiting the moon's mineral and other natural resources has not been determined as feasible, given that there have been no concrete developments in the establishment of an international governance regime therefor.





NATURAL RESOURCES LAW CENTER  
UNIVERSITY OF COLORADO SCHOOL OF LAW



*"Boulder Creek in Eldorado Canyon" circa 1900.  
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**ALLOCATING AND MANAGING WATER FOR A SUSTAINABLE FUTURE:  
LESSONS FROM AROUND THE WORLD**

**JUNE 11-14, 2002  
23RD SUMMER CONFERENCE**

**FLEMING LAW BUILDING  
BOULDER, COLORADO**



# Conference Schedule

## Monday, June 10, 2002

Pre-conference field trips

## DAY 1 - Tuesday, June 11, 2002

8:15 Welcome & Announcements

8:30 INTRODUCTORY PANEL DISCUSSION

*Patricia Wouters, International Water Resources Association*

Refreshment breaks scheduled mid-morning and mid-afternoon.

Lunch (on your own) at 12:10.

Details about concurrent sessions available at [www.colorado.edu/Law/NRLC/Conference/2002\\_Program.html](http://www.colorado.edu/Law/NRLC/Conference/2002_Program.html).

10:30-5:30 CONCURRENT SESSIONS - CONTRIBUTED PAPERS:

- *Transboundary and Transbasin Management*
- *Market Mechanisms / Modeling / Groundwater*
- *Management Strategies: From Local Institutions to National Plans*
- *Balancing Water for People and the Environment*

7:00 EVENING KEYNOTE ADDRESS AND RECEPTION

**"Overview of Global Water Issues and Challenges"**

*Peter Gleick, Pacific Institute for Studies in Development, Environment and Security, Oakland, CA*

## DAY 2 - Wednesday, June 12, 2002

8:15 Welcome & Announcements

8:30 OPENING ADDRESS: **TRANSFERRING LESSONS FROM AROUND THE WORLD TO THE WESTERN UNITED STATES**

*Jim Wescoat, Department of Geography, University of Colorado*

9:30 **THE ROLE OF MARKETS AND POLICY: LESSONS IN WATER ALLOCATION AND USE**

Introduction to Western U.S. Issues by Session Coordinators:

*Chuck Howe, Department of Economics and Institute of Behavioral Science, University of Colorado*

*Helen Ingram, School of Social Ecology, University of California, Irvine*

Panelists:

*Don Blackmore, Murray/Darling Basin Commission, New South Wales and Victoria, Australia*

*Joachim Blatter, Department of Political Science, University of Konstanz, Germany*

*John Briscoe, Senior Water Adviser, The World Bank*

*Miguel Solanes, UN Economic Commission Latin America*

*Marcus Moench, Institute for Social and Environmental Transition, Boulder/Kathmandu*

12:30 Lunch (on your own)

(sessions continue)

4:15 Synthesis of Presentations and Discussion

*Howe and Ingram*

6:30 Cookout on Flagstaff Mountain

Refreshment breaks at 10:30 a.m. and 3:00 p.m.

## DAY 3 - Thursday, June 13, 2002

8:30 **INTEGRATING ENVIRONMENTAL PRESERVATION, CULTURAL DIVERSITY, AND OTHER VALUES IN WATER LAW AND POLICY**

Introduction to Western U.S. Issues by Session Coordinators:

*David Getches, University of Colorado School of Law*

*Sarah Van de Wetering, Writer/Attorney, Missoula, Montana*

Panelists:

*Antonio Embid, Universidad de Zaragoza, Spain*

*David Farrier, University of Wollongong, Australia*

*Robyn Stein, Bowman Gilfillan Inc., South Africa*

*Marcos Terena, Guarany leader of the Terena tribe of Brazil (invited)*

Refreshment breaks at 10:15 a.m. and 3:00 p.m.

11:30 LUNCHEON ADDRESS

*Deborah Moore, Independent Consultant and former Commissioner on the World Conference on Dams, Environmental Defense*

(sessions continue)

3:30 Synthesis of Presentations and Discussion

*Getches and Van de Wetering*

5:30 RECEPTION ON WEST LAWN

*Sponsored by Hydrosphere Resource Consultants*

## DAY 4 - Friday, June 14, 2002

8:00 **TRANSBOUNDARY WATER CONFLICTS AND COOPERATION**

Introduction to Western U.S. Issues by Session Coordinator:

*Aaron Wolf, Professor, Department of Geosciences, Oregon State University*

Panelists:

*Bob Hitchcock, Department of Anthropology, University of Nebraska at Lincoln*

*Jeff Jacobs, National Research Council*

*Miki Nakayama, Tokyo University of Agriculture and Technology*

*Alberto Szekeley, Co-Director,*

*Transboundary Resources Center, Mexico*

*Julie Trottior, Research Fellow, Oxford University*

Refreshment breaks at 10:30 a.m. and 3:00 p.m.

12:30 Lunch

(sessions continue)

2:15 Synthesis of Presentations and Discussion

*Aaron Wolf and Richard Rosenberg, former CEO of Bank of America*

4:00 SUMMARY DISCUSSION: **SUSTAINABILITY AND THE FUTURE OF WATER LAW AND INSTITUTIONS IN THE WEST**

*Dan Tarlock, Professor, Chicago-Kent College of Law*

*Lakshman Guruswamy, University of Colorado School of Law*

## Saturday & Sunday, June 15-16, 2002

Post-Conference Field Trip

[www.colorado.edu/Law/NRLC](http://www.colorado.edu/Law/NRLC)

Visit our website for a complete 2002 Conference schedule and updates.



## Conference Field Trips

### A. Trends toward Sustainable Water Management in Boulder Valley - Monday, June 10, half-day tour

In this half day field trip, participants will be introduced to Boulder's Open Space lands and see how land and water management contribute to the quality of life in Boulder Valley. Issues facing mutual irrigation companies, the changing face of agriculture, and the role of water management for open space stewardship in a highly urbanized area will be addressed. Four field trip stops are planned including one in down town Boulder to look at irrigation ditches in the urban environment and another at a diversion dam to look at fish passage and discuss instream flows. Another stop will be at the South Boulder Creek State Natural Area on Open Space to discuss various land, water, and endangered species management issues. A final stop on Coal Creek will continue the discussion of water management and open space preservation and their role in sustainable development. Transportation and box lunch provided.

### B. South Platte Valley - Monday, June 10, full day tour

A field trip to the South Platte Valley will visit the site of the very controversial proposed Two Forks dam, the upper portion of the valley in Cheesman Canyon (a Gold Medal trout fishery), and the 25 miles in between. The trip will also include Buffalo Creek, the site of a forest fire a few years ago that continues to cause erosion and sediment problems in the South Platte watershed. The trip might include, as well, a visit to the east portal of the Roberts Tunnel, one of the major diversions that takes water out of the Colorado River and delivers it to the Front Range. (Perhaps there would even be the opportunity for an hour of fly-fishing in Cheesman Canyon.) The purpose of the trip would be to see a major river valley that was not inundated by a reservoir and to discuss the issues around the need for and the alternatives to the dam. The field trip will provide an opportunity to discuss current efforts (that include the Denver Water Department, the U.S. Forest Service, and Environmental Defense) to protect the river valley. The trip will be coordinated by Dan Luecke, Rocky Mountain Office of Environmental Defense. Transportation and box lunch provided.

E. Informal discussions on water law and administration will be arranged with Justice Gregory Hobbs, Jr. of the Colorado Supreme Court and Judge Jonathan Hays of Water Division 1. Please contact the Center for arrangements (no charge).

Space is limited on all field trips. Register by May 10 to guarantee participation.

### C. Colorado-Big Thompson Project - Monday, June 10, full day tour

This tour will introduce participants to one of Reclamation's most complex projects and provide insight into the scope of water management responsibilities for the new century. In order to fulfill irrigation needs in the late 1930s and early 1940s, the "C-BT" was constructed for agricultural concerns. Fifty years later, the C-BT is a primary source of water for a booming population. It provides reliable water supplies to 30 cities and towns in 8 different counties, as well as industry water, numerous recreation opportunities, environmental measures, and hydroelectric power generation from six power plants. The C-BT diverts water from the upper Colorado River basin, carrying it deep underneath the Continental Divide and down a 2000 foot elevation drop to the plains of northeastern Colorado. It irrigates 1,000,000 farmland acres and serves approximately 500,000 people. This tour will focus on the east slope collection and power plant section of the project and will also showcase Bureau of Reclamation's engineering skills at one of their Safety of Dams modernization sites at Horsetooth Reservoir. Transportation and box lunch provided.

### D. Fryingpan-Arkansas Project - June 15 & 16, two-day tour

This tour will introduce participants to a trans-mountain, trans-basin water diversion project and the various management issues involved in operating and maintaining a project of this scope and size. The first day of the tour will include an introduction to the "Fry-Ark" project, its history and a brief review of the issues facing project managers. As a multipurpose project, the Fry-Ark serves sometimes conflicting interests: e.g. high "peak" flows for white water rafting vs. required instream flows for cadis fly eggs and fly fishing. Agricultural water is the primary purpose of the project; however, power production is a secondary project purpose. To better understand the role Bureau of Reclamation and the Fry-Ark play in hydropower production, participants will enjoy a complete tour of the Mt. Elbert Power Plant.

For perspective, the second day of the tour will feature a white-water rafting adventure down the Arkansas River. Transportation will be provided, cost of raft trip, lodging and meals will be in addition to the \$25 trip registration fee.

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## Conference Information

**Discounts and Scholarships:** The Center will offer a number of partial registration scholarships.

**Location:** Sessions will be held in the Fleming Law Building, University of Colorado, Boulder. Parking permits are available for \$5 per day.

**Continuing Legal Education:** Over 20 hours of general CLE credits are available from Colorado's Board of Continuing Legal and Judicial Education. CLE credit for other states may also be available.

**Transportation:** Boulder is served by Denver International Airport, 45 miles from campus. The SuperShuttle (303) 227-0000 leaves hourly from DIA 8:10 a.m. to 11:10 p.m. on level 5 (across from the Hertz counter). No reservations are necessary except for returns from hotels to DIA. Cost of the SuperShuttle is \$18 to \$22 one way. RTD ("AB") buses leave DIA hourly at 20 past the hour. Exact change fare is \$8 one way/\$13 round trip.

**Conference Materials:** Conference participants will receive conference materials as part of their registration package. Following the conference, materials notebooks will be sold for \$75 each while they last, and \$10 for a CD-ROM, plus handling, and tax for Colorado residents.

**Refunds and Substitutions:** Conference fee refunds, less \$25, will be available through Friday, May 24. Cancellations received through June 7 will receive a refund, less \$50. There can be no fee refunds after the conference begins. Participant substitutions are allowed at no cost.

**Hotel/Dorm Accommodations:** Blocks of rooms have been reserved for registrants at several hotels. Please make your reservation directly by May 10, 2002, as all reservations made after this date are subject to availability. Mention the NRLC Water Law Conference to take advantage of special rates. A deposit or credit card number is required to hold a reservation. In order to make attendance of the conference more affordable, the Center will attempt to match individuals in double accommodations please call Jeannie at (303) 492-1288 for details.

**Boulder Broker Inn** - 555 30th St., Boulder, CO 80303; Phones: (303) 444-3330; Toll-Free: (800) 338-5407; Rates \$90/night for single or double occupancy, reserve by 5/11/02.

**Courtyard by Marriott** - 4710 Pearl East Circle, Boulder, CO 80301; Phones: (303) 440-4700; Toll-Free (800) 542-0304; Rates \$145/night for single or double occupancy; reserve by 5/14/02.

**Ramada Inn** - 800 28th St., Boulder, CO 80303; Phones: (303) 443-3322; Toll-free (800) 542-0304; Rates: \$80/night for single, double, triple or quads; reserve by 5/10/02.

**Kittredge Dorm** - located near the Law School on the Boulder campus; Phone: (303) 492-5151; e-mail: lodginghousing@colorado.edu.

**University Club** - located on the Boulder Campus at 972 Broadway, Boulder, CO 80309-0120; Phone: (303) 492-6509; Rates: \$49-89.

## Registration Form

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You may fax (303) 492-1297 your registration form if you are paying by credit card or purchase order.

### Registration Fees:

June 11  Free \$ n/c

June 12-14  Regular Rate  Gov't/Academic & Nonprofit  Student \$ \_\_\_\_\_

Rec'd By May 10  \$525  \$275  \$100 \$ \_\_\_\_\_

After May 10  \$575  \$315  \$100 \$ \_\_\_\_\_

Field Trips: A  \$25 B  \$25 C  \$25 D\*  \$25 \$ \_\_\_\_\_

Parking 3 days  \$15 1 day  \$5 \$ \_\_\_\_\_

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Cookout Wednesday (must sign up to attend):

Self  I will attend. \$ n/c

Adult guests @ \$10 each \$ \_\_\_\_\_

Extra notebook of speakers' materials \$75 \$ \_\_\_\_\_

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\*Additional fees for raft trip & lodging to be announced.



*The Case of Antarctica*

The issue of 'ownership' of Antarctica is far from settled, having been claimed by several states that entered into the Antarctic Treaty in 1959. This led to the development of protocols and other treaties, constituting what is called the Antarctic Treaty System, which involves only states either claiming Antarctica or manifesting concrete interest in it. While multilateral in nature, it involves a limited number of states and its legitimacy has been questioned, even by the General Assembly of the United Nations.

Within the framework of the Antarctic Treaty System, the states-parties thereto formulated the Convention on the Regulation of Antarctic Mineral Resource Activities of CRAMRA (1988). After years of difficult and complex negotiations, they arrived at a convention text that was both praised and criticized.

The subject of many legal discourses, the CRAMRA was seen by some sectors as merely a mining code, complete with permitting and other legal procedures, which effectively threw open the doors to the exploitation of a critical and sensitive environment. Others praised what they considered the convention's strong environmental safeguards, and viewed it as a pragmatic document intended to regulate what may be inevitable attempts at mineral development in a vulnerable area.

The CRAMRA, however, was never ratified. Legal analysts have differed in their assessment of the CRAMRA's status, with some declaring it dead, others relegating it to legal limbo, and still others viewing it as capable of resurrection, whether in itself or as a model for future regulatory framework. The legal diagnosis of the CRAMRA is currently moot, in view of the parties' decision to enter into the Madrid Protocol on Environmental Protection to the Antarctic Treaty (1991).

The Madrid Protocol aimed to manifest the parties' commitment to comprehensive protection of the Antarctic environment. Antarctica was designated as a natural reserve, devoted to peace and science. Most significantly for purposes of this article, the Protocol imposed a fifty-year prohibition or moratorium on mineral resource activities other than scientific research. Although certain clauses in the Protocol, such as those allowing parties to disengage themselves from the fifty-year moratorium, have been criticized as contrary to the agreement's environmental protection objectives, this has not happened so far and, thus, the prohibition of mineral resource activities within Antarctica stands.

*The Seabed Mining Regime*

The most developed international governance regime or regulatory framework for mineral resources activities exists in the case of the deep seabed as provided under the United Nations Convention on the Law of the Sea of 1982 (UNCLOS III). Under Part XI, the seabed and its resources are recognized as constituting the 'common heritage of mankind.' Its original formulation stressed the equitable sharing of benefits derived from seabed mining. Requirements such as those on mandated technology transfer, royalties, taxes and other payments were imposed that were largely rejected by industrialized countries. Contentious debates surrounding the deep seabed mining regime are a reason for the delay in obtaining the necessary number of ratifications for the convention which entered into force in 1994.

In the interim when no agreement could be reached on deep seabed mining as it was originally formulated, several industrialized states entered into relevant agreements. The Provisional Understanding Regarding Deep Seabed Mining (1984), entered into by Belgium, France, the Federal Republic of Germany, Italy, Japan, the Netherlands, the United Kingdom and the United States, provided that no party shall authorize or itself engage in the exploitation of the hard mineral resources of the deep seabed before 01 January 1988. In like manner, an Agreement on the Resolution of Practical Problems with Respect to Deep Seabed Mining Areas (1987) was entered into by Canada, Belgium, Italy, the Netherlands, and the then Union of Soviet Socialist Republics.

In order to make Part XI more acceptable to industrialized countries, the Agreement Relating to the Implementation of Part XI of the United

Nations Convention on the Law of the Sea (1994) was negotiated. It still maintained the declaration that the deep seabed was the common heritage of mankind "to be shared by all nations and not subject to traditional territorial sovereignty."

Unlike its original formulation, however, the revised agreement did not contain detailed production policies, systems of assistance to land-based producers, tax impositions or mandatory transfer of technology. In their place were provisions deemed favorable to industrialized countries such as the assurance that market-oriented approaches would be used in management, reduction in the size of institutions, and substantial representation in decision-making bodies.

In July of 2000, the Regulation on Prospecting and Exploration for Polymetallic Nodules in the Area was formulated. As the first set of rules adopted to implement Part XI, it covers only prospecting and exploration, and includes preliminary matter such as the content, procedure and fees for applications and exploration contracts. It also contains provisions on the protection of the marine environment, confidentiality, settlement of disputes and other general provisions.

The Agreement Relating to the Implementation of Part XI thus contains what appears to be the only broad-based international regulatory framework for mineral activities in force today, although it applies only to mining and minerals in deep seabed areas.

**Obligations on Labor Conditions, Mine Safety and Health**

International principles on labor conditions for mine workers have long existed, likely due to greater public consciousness regarding the rights and welfare of workers brought about by different labor movements, and increasing levels of coordination among workers through national and international linkages like the International Labour Organization.

While the Deep Seabed Mining regime applies to a specific area and type of mineral resource, International Labour Organization or ILO Convention 176 is an international agreement pertaining to certain aspects of mining operations in general, regardless of location or type of mineral resource.

Previously found in a host of different legal resolutions and conventions, the provisions pertaining to mine workers have largely been consolidated in ILO Convention 176 on Mine Safety and Health (1995). The Convention prescribes that parties thereto shall adopt measures to ensure its application through appropriate national laws and regulations. These should be supplemented, where appropriate, by technical standards, guidelines, codes of practice or other means of application consistent with national practice, as identified by the competent authority of a state.

ILO Convention 176 recognizes that mine workers need and have the right to information, training and genuine consultation on and participation in the preparing and implementing of safety and health measures. Its objective is to prevent any fatalities, injuries or ill health affecting workers or members of the public, or damage to the environment arising from mining operations.

The Convention provides for preventive and protective measures, the responsibilities of employers and the rights and duties of workers and their representatives. It contains provisions on supervision of safety and health in mines; inspection of mines by those designated by the competent authority; and procedures for reporting and investigating fatal and serious accidents, dangerous occurrences and mine disasters. It recognizes the power of the competent national authority to suspend or restrict mining activities on safety and health grounds and further provides for the establishment of effective procedures to ensure that workers are consulted on matters and participate in measures relating to safety and health.

**2. INTERNATIONAL LAW ON SUSTAINABLE DEVELOPMENT AND MINING**

The last three decades have seen significant developments in the field of international environmental law, marked by the proliferation of multilateral environmental agreements and the formulation of a comprehensive agenda for the environment and natural resources. Three landmark international



environmental legal instruments have played an instrumental role in the development of the sustainable development paradigm.

### **The Stockholm Conference on the Human Environment and the World Charter for Nature**

Delegations from 113 countries, intergovernmental organizations and NGOs participated in the Stockholm Conference on the Human Environment held in 1972, which resulted in the Declaration of the United Nations Conference on the Human Environment and an Action Plan for the Human Environment. The Declaration provides, in part, that the non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that all humankind shares benefits from such utilization.

The Action Plan for the Human Environment contained many recommendations on the different sectors of the environment and natural resources. Recommendation 56 on mining and mineral resources focused on the accessibility, further accumulation and dissemination of pertinent information. Specifically, it recommended that the Secretary-General provide the appropriate vehicle for the exchange of information on mining and mineral processing, including the environmental conditions of mine sites, the action taken in respect of the environment, and positive and negative environmental repercussions.

Further it proposed that the appropriate United Nations bodies send experts to assist developing countries, to provide adequate information on the technology for preventing adverse effects of mining on the environment and the adverse health and safety effects associated with the mineral industry.

The Action Plan also proposed that this body of information could be used for prediction, and that criteria for planning and managing mineral production would emerge and would indicate where certain kinds of mining should be limited, where reclamation costs would be particularly high, or where other problems would arise.

Significantly, these proposals formulated thirty years ago are strikingly similar to current initiatives and existing or proposed agreements which stress assistance to developing countries, the use of appropriate mining technologies, the prevention of adverse environmental impacts and promotion of mine health and safety. It is also significant that the Action Plan proposed the formulation of criteria for planning and managing mineral production, including indicators for where certain kinds of mining should be limited and where reclamation costs would be high.

Ten years after Stockholm, the General Assembly of the United Nations promulgated Resolution 37/7, the World Charter for Nature, which provides that natural resources shall not be wasted, but used with a restraint appropriate to the principles set forth therein. With respect specifically to non-renewable resources that are consumed as they are used, it provides that these shall be exploited with restraint, taking into account their abundance, rational possibilities of converting them for consumption, and the compatibility of their exploitation with the functioning of natural systems.

The Stockholm Declaration and Action Plan, together with the World Charter for Nature, are foundational instruments for what is now a complex body of international environmental law. These are significant for mining and minerals in their recognition of non-renewable resources and concerns in their development, management and consumption.

### **The World Conference on Environment and Development**

The Declaration and Action Plan resulting from the Stockholm Conference and the World Charter for Nature are important international legal instruments which helped pave the way for further development in the area of international environmental law. Ten years after the World Charter of Nature and twenty years after the Stockholm Conference, the World Summit on Environment and Development was held in Rio de Janeiro in 1992.

The largest gathering ever of ministers and heads of 172 states attended the Rio Summit. States-parties there signed five international instruments: the Rio Declaration on Environment and Development (Rio Declaration), Agenda 21, the Statement on Forest Principles, the Convention on Biological

Diversity and the Framework Convention on Climate Change. It definitively ushered in the paradigm of 'sustainable development' which holistically views economic progress as inseparable from environmental protection and social concerns in the pursuit of genuine human development.

Principle 1 of the Rio Declaration provides that human beings are at the center of concerns for sustainable development, entitled to healthy and productive lives in harmony with nature. As such, the genuine development and welfare of human beings are both the fundamental motivation and ultimate objective of any initiative, agreement or program, be they concerned with economic, social, environmental or other issues. Further, Principle 25 expressly provides that peace, development and environmental protection are interdependent and indivisible.

The Rio Declaration reiterates long-standing principles of international law on environment and natural resources although it articulates them in the larger context of sustainable development. These include the sovereign right of states to exploit their resources pursuant to their environment and development policies and the requirement that states notify other concerned states of any natural disasters, other emergencies or adverse transboundary environmental effects.

Emerging principles of sustainable development are also expressly contained in the Rio Declaration, such as the recognition of the right of human beings to development and access to information and justice. It emphasized the importance of public awareness and participation, the balancing of the needs of present and future generations, the recognition of the special situation and needs of developing countries, common but differentiated responsibilities and the need for cooperation in a spirit of global partnership.

With respect to primarily environmental concerns, the Declaration encourages, among others, the precautionary approach, internalization of environmental costs, and use of economic instruments and environmental impact assessment. On social issues, participation of different groups is recognized and encouraged. Particular importance is given indigenous peoples' unique knowledge and their role in environmental management.

Similar to the Action Plan formulated at the Stockholm Conference, the World Summit also witnessed the signing of Agenda 21, a comprehensive blueprint for sustainable development covering five major areas: socio-economic dimensions, conservation and resource management, strengthening the role of major groups, and measures of implementation.

Although the Stockholm Declaration and Action Plan, the World Charter, the Rio Declaration and Agenda 21 are not legally binding, they are landmark statements of principles established by the international community.

'Soft law' principles in international law such as those contained in the Rio Declaration carry weight in the international community, given the degree of consensus obtained. Thus, these 'soft law' principles have paved the way for their incorporation not only in legally binding multilateral agreements entered into since Rio but also in many national laws. Furthermore, the respect accorded principles of sustainable development and their observance by states over time could lead to the development of international customary law, which would then also be obligatory in character.

### **3. PRINCIPLES OF SUSTAINABILITY IN MINING**

In contrast to the Stockholm Declaration, Action Plan and World Charter for Nature, neither the Rio Declaration nor Agenda 21 makes any significant mention of mining, minerals or other non-renewable resources, although minerals are mentioned as constituting one of the multiple components of land resources. Aside from land resources, other natural resources and environmental problems given focus in Agenda 21 are: agriculture, biotechnology, freshwater resources, the atmosphere, oceans, deforestation, desertification and drought and management of toxic chemicals, hazardous, radioactive and solid waste.

A rigid and literal reading of principles of sustainability has led to the theory that mining activities - given their social and environmental impacts and that mineral consumption leaves less for future generations - are inherently inconsistent with sustainable development. A less rigid view - not inconsistent



with sustainable development - considers the broader context and development of international environmental law and resource utilization. The absence of its treatment at Rio does underscore, however, the difficulties in adapting or relating principles of sustainable development in the context of mining and mineral resources.

Formulating general principles intended to direct mining activities has been an on-going task. For instance, the Action Plan from the Stockholm Conference in 1972 had proposed the formulation of criteria for planning and managing mineral production, with specific indicators for where certain kinds of mining should be limited and where reclamation costs would be high. It also recommended that relevant United Nations bodies take appropriate action.

In this regard, the United Nations Environment Programme convened a multi-sectoral group in 1991 which resulted in the formulation of Fundamental Principles for the Mining Sector or Berlin Guidelines. The statement called for governments, mining companies and minerals industries to, among others, recognize environmental management as a high priority, establish environmental accountability, and ensure the participation and dialogue with the affected communities and other directly interested parties on the environmental aspects of all phases of mining activities. Similar efforts to develop guidelines, criteria and indicators for mining and sustainability are being undertaken by governments, non-government organizations and the private sector including MMSD, U.S. Forest Service and Conservation International.

The increasing participation and even initiation of such undertakings by the mining industry itself raises the question of why companies that conduct or intend to conduct operations purely within the boundaries of one state, as mining activities characteristically are, would support the formulation of international criteria and principles.

One answer lies in common sense, or perhaps more appropriately, good business sense. As pointed out by the Global Compact (a United Nations initiative seeking to promote good corporate practices based on universally accepted principles of international law), as markets have gone global, so must corporate citizenship and social responsibility. Principles of sustainable development ultimately must make good business sense in the context of the global economy.

It may be said that the efforts and initiatives of industry, international organizations, NGOs and other sectors can not lead to the formal development of international legal instruments on mining and sustainable development in as much as the parties thereto must be states. In this regard, note that recent developments in international law have come about in large part because of economic and other forces. The role of NGOs, business and other sectors, whose interests are increasingly represented in official delegations of states, is clearly influential in the treaty-making process today, as evidenced in Rio itself and in other international treaty negotiations.

Whether these initiatives will ultimately contribute to the development of a formal body of international mining law and sustainable development remains to be seen. Essential to the further development of international law, whether it be in the form of a statement of principles or the establishment of a more complex governance regime, is consensus among states. Such consensus is the source of legitimacy and authority for the implementation and enforcement of international law where, unlike national legal systems, a presumed authority and a recognized enforcement mechanism almost always exists. For any guidelines, criteria or indicators to contribute to the development of international law on mining and sustainability, discussion and consensus among states through their governments is essential.

The principles of sustainable development have been identified as centering around interrelationship and integration; environment; natural resources and development; international cooperation; public participation, decision-making and transparency; and monitoring, compliance, dispute avoidance and resolution procedures. Under the broad area of environment, natural resources and development, recognized and emerging principles of sustainable development include sovereignty over natural resources and responsibility not to cause damage to the environment in areas beyond

national jurisdiction, sustainable use of natural resources, people's right to development and a healthy environment, equity and the eradication of poverty, the prevention of environmental harm and the precautionary principle.

Developing international law on mining in the context of sustainable development would call for an analysis of these principles as they relate to the mining and minerals sector. The continuing challenge of applicability and relevance lies here. It may be evident how the principle of state sovereignty and the duty to prevent transboundary harm may be immediately relevant to mineral resources activities, as it has been for decades, but this may not be the case for the requirement of 'sustainable use' which is traditionally understood as applying to renewable resources. Nor would the application of the precautionary principle, which provides that the lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation where there are threats of serious or irreversible damage, be readily apparent.

Other emerging principles also call for further reflection and analysis in the context of the mining and minerals sector. Could the principle of 'common but differentiated responses' together with the 'special treatment of developing countries' provide a basis for the formulation of indicators of sustainability that are specifically applicable to mining activities conducted by industrialized states or multinational companies areas situated in developing countries? Can and to what extent may the principles of public participation and access to information be standardized and implemented in large-scale mining operations?

The analysis of sustainable development principles in the context of mining and minerals, or alternatively the reshaping of the sector in the context of sustainable development, are tasks that will not and should not be done in a vacuum. Much is relevant to build on from at least two sources: existing international law and principles relevant to mining as well as the on-going initiatives to develop standards and indicators of mining and sustainability. With respect to the first, an example is the Aarhus Protocol, discussed above, which designed measures to anticipate, prevent or minimize emissions of certain heavy metals and their related compounds expressly as an application of the precautionary principle.

The Stockholm Declaration may also offer valuable guidance on the interpretation of 'sustainable use' of resources in the context of minerals. The Declaration provides that non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that all humankind shares benefits from such utilization. This lends valuable insight to two possible and complementary perspectives on 'sustainable use' of mineral resources. The first pertains to the resource itself where its use is extended through, for example, rational development and management as well as through recycling and other technologies. The second pertains to the benefits from its use, which should be shared and extended in ways that lead to other productive uses.

The challenge found in Principle 27 of the Rio Declaration is most appropriate now for the mining sector as the ten-year review of commitments made at the World Summit on Environment and Development approaches: for States and people to "cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development." It is in the context of this broader challenge that the different national and international initiatives to discuss global mining issues and possible international standards, criteria and indicators for sustainability in mining become most responsive and relevant.

*Ma. Cecilia G. Dalupan is a lawyer and legal consultant who works in the area of mining, climate change and renewable energy in the Philippines. She has been a consultant to the Mining, Minerals and Sustainable Development, the United Nations Environment Programme, the Philippine Department of Energy and the National Renewable Energy Laboratory.*

*Financial support for this fellowship was provided by the El Paso Energy Corporation.*



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This publication is a product of the Natural Resources Law Center, a research and public education program at the University of Colorado School of Law. The Center's mission is to promote sustainability in the rapidly changing American West by informing and influencing natural resource laws, policies, and decisions.

Interpretations, recommendations, or conclusions in this Natural Resources Law Center publication are solely those of the authors and should not be attributed to the Center, the University of Colorado, the State of Colorado, or any of the organizations that support Natural Resources Law Center research.

*Resource Law Notes* is the Center's free newsletter, published three times a year.

Contributions to the Center, through the University of Colorado Foundation are tax-deductible.

### *Resource Law Notes*

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969924