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ENVIRONMENT ENERGY AND RESOURCES

Agricultural Management Committee Newsletter

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MESSAGE FROM THE CHAIRS

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Looking forward, the global agriculture sector is faced with a series of daunting tasks, first among which is feeding a world population of nearly seven billion without jeopardizing the sustainability of the Earth's resources. The sector must also meet demand increases brought about by a shift in Asia to protein-heavy dietary preferences, and contend with climate volatility. At the same time, new technologies have been developed or are under development that may help meet these challenges. In this context, our newsletter returns to the joint format—agriculture meets international—to address some of the most significant environmental issues facing the world. This year energy and food security have collided, while climate change, the benefits and risks of biotechnology, and protection of biodiversity all raise legal issues. Our committees therefore come together for the third joint newsletter of the ABA Section of Environment, Energy, and Resources' Agriculture Management and International Environmental Law Committees.

This year's joint edition covers a broad and exciting array of issues and analyses. First, Daniel McLean, Jennifer Wills, and Tom Redick combine efforts on the opening survey of major international environmental regulatory and liability issues related to agriculture. The survey focuses on pesticide and genetically modified organism use and regulation, and developments concerning the Alien Tort Statute, NAFTA, and the United Nations. Next, Russell LaMotte provides fascinating insight into ocean iron fertilization and its evolving global regulatory framework. His article illustrates how international environmental legal developments are addressing a technology that could permit the oceans to be used in a way to reduce global concentrations of greenhouse gases (GHGs). It also shows how, as with biotechnology, the law is responding to the melding of engineering, technology, and agricultural practices.

Jane Earley then provides an informative update on her previous biofuels article, published in an earlier joint issue. She urges a rapid move to substitute more efficient second generation biofuels for those currently available, such as ethanol, and adequate regulation in the interim. Her article sheds light on the need to find fossil fuel alternatives without increasing deforestation, which can exacerbate climate change and biodiversity loss. Next, Rafael Figueiredo discusses a related topic that has become central to the climate change debate, the deforestation of the Amazon, much of which is cleared for agricultural use. Although 90 percent of Brazil's electricity comes from biofuels and GHG-free hydroelectric dams, the destruction of its forests make

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Thomas P. Redick, Editor

In this issue:

This newsletter is a publication of the ABA Section of Environment, Energy, and Resources, and reports on the activities of the committee. All persons interested in joining the Section or one of its committees should contact the Section of Environment, Energy, and Resources, American Bar Association, 321 N. Clark St., Chicago, IL 60654.

it the fourth largest emitter of GHGs in the world. Dealing with Amazonian deforestation, therefore, has become an important component of any emerging climate change plan. Against this backdrop, Mr. Figueiredo explains Brazil's climate change plan and compares it to a joint ministerial declaration on the Reduction of Emissions from Deforestation and Forest Degradation (REDD) made at the December 2008 United Nations Framework Convention on Climate Change Conference of the Parties in Poznan, Poland. Together, these articles illustrate how climate change may force us to rethink more traditional notions of what constitutes agriculture as market forces encourage the development of alternative fuel sources and the cultivation or preservation of energy- and CO_2-sequestering plants on land and at sea.

Finally, Cari Rincker provides a timely update on an important trade and agriculture issue, reviewing federal legislation requiring food suppliers to provide country-of-origin labeling (COOL) to consumers. Ms. Rincker notes Mexico and Canada's contention that COOL conflicts with the United States' World Trade Organization obligations, and speculates that the Obama administration may attempt to soften COOL's trade effects to avoid a trade showdown.

We hope you enjoy this wide-ranging and informative exploration into these new developments and critical matters. Please contact Tom Redick at thomasredick@netscape.net, or Brett Grosko at brett.grosko@usdoj.gov, if you would like to contribute to future issues of our newsletters.

We would be remiss if we did not also mention another fantastic way to get involved in and benefit from our committees' work: attending the Section's 38th Annual Conference on Environmental Law in Keystone, Colorado, March 12-15, 2009. The meeting will kick off with noted author and environmentalist Amory Lovins addressing "Profitable Solutions to Oil, Climate, and Proliferation"—new energy-efficiency design techniques yielding rapid returns as we build diverse, dispersed, renewable fuels and electricity. Climate and energy law sessions abound this year, as the Kyoto Protocol parties, the United States, and various regions and industries move toward legislative, regulatory, and

voluntary actions to address climate change and store carbon while protecting wildlife species of concern. Sustainability is profiled in a standards session the Agricultural Management Committee helped create on "Cities and Agriculture" regarding the role played by biofuels and nanotechnology in making communities and regions sustainable. Those of you who are increasingly relying on the Internet to learn the law of the world should attend "Life in the Global Environmental Economy—What You Can't Learn From the Internet" to hear from leading global practitioners about environmental practice interpreting laws of foreign jurisdictions.

INTERNATIONAL AGRICULTURE-ENVIRONMENTAL REGULATORY UPDATE

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This update, current as of Feb. 9, 2009, seeks to cover significant events concerning various judicial cases, environmental treaties, and overseas laws that relate to both agriculture and the environment. Readers interested in writing the next such update for the International Environmental Law Committee should contact Brett Grosko at brett.grosko@usdoj.gov.

Pesticide Manufacture and Use

Dismissal of Bhopal-Related Claims Overturned

In 1984, a pesticide manufacturing facility owned by a subsidiary of Union Carbide in Bhopal, India, leaked methyl isocyanate gas, contaminating water supplies and killing thousands of people. Numerous lawsuits ensued. The cases were joined, and ultimately the Second Circuit affirmed dismissal of those claims. *See Bano v. Union Carbide Corp.*, Civ. No. 99-11329 (JFK), 2000 WL 1225789, *1 (S.D.N.Y. Aug. 28, 2000). In 2004, plaintiffs whose claims were not time barred by the statute of limitations filed suit in the U.S. District Court for the Southern District of New York under New York state law. Defendants moved to dismiss. The district court then converted the defendants' motion into a motion for summary judgment and granted the motion. In November 2008, the Second Circuit vacated and remanded the lower court's dismissal, holding that plaintiffs were not given adequate notice of conversion of their motion. *Sahu v. Union Carbide Corp.*, 548 F.3d 59 (2d Cir. 2008).

United Kingdom Court Finds Government Failed to Comply with EC Pesticide Application Directive

In November 2008, a United Kingdom court found the government must reevaluate the need for protections to residents in a case involving allegations of harm flowing from pesticide spray drift. *Downs v. Sec. of State for Environment, Food and Rural Affairs*, Case No. CO/44983/2004 (High Court of Justice, Queen's Bench Division, Nov. 14, 2008). The claimant in *Downs* filed suit to require the government to comply with a European Community directive regarding harm to human health. The Directive prohibits the use of an active pesticide ingredient unless it does not cause harm to human health. The claimant argued that the government failed to consider the long term effects of spray drift on rural residents. The Court found that the controls for pesticide application were not in compliance with the Directive, and, furthermore, that the risk assessment undertaken failed to ensure that there was no harm to human health from crop spraying. The United Kingdom government has appealed the decision.

Venezuela Passes Statute Aimed at Curbing the Use of Pesticides and Regulating GM Crops

In July 2008, Venezuela passed a statute seeking to discourage the use of pesticides and improve the regulation of genetically modified organisms (GMOs). The law establishes a new National Institute of Integral

Agricultural Health ("INSAI" in Spanish), which will oversee the nation's agricultural development, including use of GMOs and agricultural chemicals. INSAI will reportedly favor small farmers and discourage the use of "toxic chemicals." *See* BNA, 31 International Environment Reporter (IEL) No. 22, p.1001.

Italy Institutes Ban on Pesticide Said to Be Harmful to Honey Bees

In September 2008, Italy indicated it will ban all neonicotinoid-based pesticides due to their impact on the country's honey bee population. Germany banned the same category of pesticides in May 2008, while France has had a partial ban in place since 1999. Industry sources claim the chemicals are necessary to keep pests away from corn crops, while the Italian government has said the chemicals cause bees to lose their sense of direction, making it impossible for them to return to their hives. *See* BNA, 31 IEL No. 19, p. 856.

Ontario Publishes Draft Ban on Use of Pesticides for "Cosmetic" Uses

In November 2008 Ontario published for public comment draft regulations to implement the province's proposed ban on the use of pesticides for use on lawns, gardens, parks, and other outdoor areas. *See* www.ebr.gov.on.ca (search item # 010-5080). Final regulations are scheduled to be published in the spring of 2009. *See* BNA, 31 IEL No. 24, pp. 1072-73.

United Nations

United Nations Environment Programme (UNEP) Releases Draft Environmental Liability Guidelines.

A UNEP meeting in Nairobi, Kenya in mid-February 2009 discussed environmental liability guidelines that would help all nations set comprehensive standards for all harm to the environment. This is a worthy effort, given the potential for overly specific strict liability (e.g., hazardous waste, oil pollution, biotech crops) to misallocate resources to particular threats while ignoring other, more serious, threats. Principle 13 of the 1992 Rio Declaration obliges States to develop national environmental liability legislation. UNEP responded to requests from developing countries for assistance in developing legislation to provide compensation for environmental damages. Starting in 2002, UNEP developed these best practices to facilitate the development of national and international environmental liability. Specific laws like the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes, Convention on Biological Diversity, and Cartagena Protocol on Biosafety leave gaps and potential inconsistencies regarding compensation for environmental damage.

The Unied States has various federal and state liability laws in place, while the European Union (EU) enacted directive 2004/35/CE, giving EU member nations until April 2007 to enact national legislation for environmental damages liability. Varying definitions of significant environmental damage can leave developing countries without applicable legislation in environmental damages cases. The UNEP guidelines are a step toward correcting gaps in legal protection of the environment. *See* UNEP Draft Liability Guidelines, www.unep.org/gc/gcss-x/download.asp?ID=937 (site visited Feb. 3, 2009).

Genetically Modified Organisms

New Zealand Issues New Rules for Biotech Crops

In November 2008, new regulations took effect in New Zealand requiring companies desiring to release GMOs into the environment to submit plans to the Environmental Risk Management Authority on how they intend to ensure modified plans are kept separate from other crops. The purpose of the regulations, the government states, is to provide more transparency, accountability, and public openness in the management of GM crops.

Poland Delays Ban on Biotech Feed for Livestock

In August 2008, the Polish president signed into law a bill delaying for over three years the imposition of a ban on the use of GMOs in feed or livestock. One concern was the potential increase in food prices that would

result from such a ban. The ban would have prohibited GMO fodder by farmers and meat producers. Now the ban will not go into effect until Jan. 1, 2012. *See* BNA, 31 IER No. 17, p. 782.

The European Commission Rebuffs Claim of Withheld Approval Vis-á-Vis Biotech Potato

In July 2008, the European Commission (EC) rejected BASF's claims that the EC was illegally withholding approval of its GM potato application. The EC said it would take no action on the seed application until the European Food Safety Authority (EFSA) addresses new scientific concerns. This follows legal action on July 24, 2008 by BASF before the European Court of First Instance, in which the company accused the EC of delaying approval of the potato despite the initial green light from the EFSA. BASF said it has been waiting twelve years for the EC to process two applications—one for cultivation for use in industrial processes that require starch, and another for use in animal feed and foods for human consumption. The potato at issue, "Amflora," contains a gene that confers resistance to certain antibiotics relevant to human and animal health. *See* BNA, 31 IER No. 16, p. 744.

Uruguay Ends 18 Month Ban on GMO Seeds

In July 2008 major grain and oil seeds producer Uruguay announced the end of its 18-month moratorium on approval of new genetically modified seeds. Agriculture Minister Agazzi said President Vazquez signed a resolution confirming the conclusion of the freeze initiated in January 2007 due to concerns about soil contamination and organic crop interference. The resolution also mandated establishment of an inter-ministerial panel to decide on new applications. Uruguay gave the green light to Monsanto's Roundup Ready soy seed and two GM corn seeds before the moratorium was put in place. The government recently also rejected calls for mandatory labeling of GM products. *See* BNA, 31 IER No. 15, p. 714.

Belgian Province Adopts GM Law

In June 2008, Wallonia adopted a law seeking to counteract a European Community directive allowing for the sale of GMO plants and the authorization of experimental GMO dissemination. The law sets conditions on their use, establishes a compensation fund for the accidental mixing of GM and non-GM biological material, as well as the potential creation of buffer zones around GM-planted fields.

North American Free Trade Agreement (NAFTA)

EPA Seeks Comment on a Proposal for a NAFTA Pesticide Registration System

This proposal, developed by the NAFTA Technical Working Group on Pesticides, aims to create a North American pesticides and pesticide-treated products registration system. The working group's five-year plan—through 2013—covers objectives such as providing U.S., Canadian, and Mexican growers with equal access to pest management tools, cooperating to reevaluate and re-register older pesticides, and integrating "smart business approaches and practices" into working group activities. The group is separately working to develop a standard method for establishing maximum pesticide residue levels for U.S. and Canadian crops. *See* 73 Fed. Reg. 42,798; BNA, 31 IER No. 16, p.749.

Dow AgroSciences LLC Files Notice of Intent under NAFTA Chapter 11

In August 2008, Dow AgroSciences LLC (Dow) filed a Notice of Intent to Submit a Claim to Arbitration under Chapter 11 of NAFTA for harm to its investments due to Quebec's ban of the herbicide, 2,4-dichlorophenoxyacetic acid (2,4-D). *See* www.mddep.gouv.qc.ca/pesticides/ permis-en/code-gestion-en/index.htm#active. The Notice was made public in October 2008. Dow claims that Quebec breached its responsibilities under NAFTA Articles 1105 and 1110. *See* www.international.gc.ca/trade-agreements accords-commerciaux/assets/ pdfs/ DowAgroSciences LLC.pdf. Dow alleges that (a) Quebec's ban is not based on science (referencing numerous evaluations by other governmental bodies—including Health Canada); (b) Quebec applied its own criteria inconsistently with respect to 2,4-D; and (c) Quebec revised the

methodology used for determining products subject to the ban without allowing stakeholders an opportunity to be heard. Dow is seeking $2,000,000 for losses resulting from the ban.

2,4-D is an herbicide used to control weeds in residential and non-residential settings. 2,4-D has been prohibited for use on lawns under Quebec's Pesticide Management Code since 2006. *See* http://www.mddep.gouv.qc.ca/pesticides/permis-en/code-gestion-en/index.htm#active. Dow's Canadian subsidiary, Dow AgroSciences Canada Inc. (Dow Canada) has registrations for 2,4-D in Canada. Dow and Dow Canada manufacture 2,4-D for sale to companies that formulate products for sale in Canada. These products are affected by the ban.

Ethanol

Boat-Damage Ethanol Class Action Filed In Florida

Exxon, Chevron, Conoco Phillips, British Petroleum, and Shell—all defendants in a proposed Florida class action lawsuit—lost an opening round in a putative class action claiming damage to boat engines from fuels containing ethanol. The oil companies moved to dismiss on the ground that plaintiffs' tort claims were preempted by federal and Florida law. The Court held, however, that federal law encourages, but does not require, the use of renewable fuels such as ethanol, and Florida does not require it to be used by boat owners. If the suit proceeds to the remedy stage via judgment or settlement, the oil companies could be forced to place a warning label on gas station pumps in Florida (and perhaps elsewhere if corporate policies change), notifying users that gasoline blended with ethanol may be hazardous to their boats. Counsel for the plaintiffs are seeking significant compensation for all Florida boat owners incurring damage from ethanol-blend fuel used in boats. A similar lawsuit in California was dismissed. *See Class Action, Ethanol Blend Boat Fuel*, Maritime Reporter and Engineering News (Jan. 27, 2009), *available at* http://marinelink.com/Story/Class-Action,-Ethanol-Blend-Boat-Fuel-214283.html (last visited Feb. 11, 2009).

Alien Tort Statute

Second Circuit Affirms Dismissal of Claims Regarding Alleged Sterility from Pesticide Use

Originally enacted in 1789, the Alien Tort Statute (ATS) permits district courts to hear a "civil action by an alien for a tort only, committed in violation of the law of nations . . . ." 28 U.S.C. § 1350. While it has been used in the past to curb human rights abuses, the Ninth Circuit recently declined to extend its coverage in a case alleging harm through use of the pesticide 1,2 dibromo-3-chloropropane (DBCP) in western Africa. *Abagninin et al. v. AMVAC Chemical Corp. et al.*, 545 F.3d 733 (9th Cir. 2008). In *Abagninin*, plaintiffs alleged (a) they were banana and pineapple plantation workers in the Ivory Coast; (b) defendant AMVAC Chemical Corporation (AMVAC) was a private business that designed, manufactured, or required the use of DBCP; and (c) DBCP exposure sterilized them and caused their inability to have children. Plaintiffs further alleged that AMVAC knew of DBCP's toxicity as early as the 1950s, but that despite that knowledge continued manufacturing, selling, and using DBCP on plantations owned and operated by an Ivoirian governmental entity. Plaintiffs contended that such conduct supported claims under the ATS for genocide and crimes against humanity.

The court found that plaintiffs' allegations failed to state a claim under either theory. With respect to genocide, the court noted plaintiffs were required to allege a specific intent to harm them. Instead, plaintiffs had merely asserted that AMVAC acted with general intent, *i.e.*, an awareness that "a consequence will occur in the ordinary course of events." The court noted the general intent standard was "not part of a treaty of the United States or part of the law of nations." *Id.* at 740. As for crimes against humanity, the court found plaintiffs failed to show that the existence of a state policy or action caused their harm. The court found neither AMFAC nor the Ivoirian government entity owning the plantations engaged in any state action. Plaintiffs had not alleged that "the use of DBCP was part of a plan or policy to sterilize Plaintiffs" but had, instead, simply contended defendants purchased and provided DBCP for use on crops. The court therefore affirmed the lower court's dismissal.

U.S. GOVERNMENT EXECUTIVE BRANCH AGENCY HEADS			
	Nominee or Confirmed Agency Head	**Title**	**Biographical Website**
Department of Agriculture	Thomas Vilsack	Secretary (confirmed)	http://www.my.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1OB?contentidonly=true&contentid=bios_vilsack.xml
U.S. Dept. of Agriculture, Animal and Plant Health Inspection Service	Kevin Shea	Administrator (Acting)	http://www.aphis.usda.gov/about_aphis/leadership_bios/shea_bio.shtml
Dept. of Health and Human Services, Food and Drug Administration	Frank M. Torti	Administrator (Acting)	http://www.fda.gov/oc/bios/torti.html
Environmental Protection Agency	Lisa Jackson	Administrator (confirmed)	http://www.epa.gov/administrator/biography.htm
Department of the Interior	Ken Salazar	Secretary (confirmed)	http://www.doi.gov/welcome.html
National Oceanic and Atmospheric Administration	Jane Lubchenco	Administrator (nominated)	http://lubchenco.science.oregonstate.edu/
Department of Energy	Steven Chu	Secretary (confirmed)	http://www.energy.gov/organization/dr_steven_chu.htm
Office of the U.S. Trade Representative	Ron Kirk	U.S. Trade Representative (nominated)	http://www.vinson-elkins.com/lawyers/RonKirk.aspx
Dept. of Justice	Eric H. Holder, Jr. Elena Kagan	Attorney General (confirmed) Solicitor General (nominated)	http://www.usdoj.gov/ag/ http://www.law.harvard.edu/faculty/directory/index.html?id=112

Figure 1

Chevron Prevails in ATS Case, Seeks Costs of Suit

Chevron Corporation risked causing a public outcry by filing a motion seeking $485,000 in litigation costs from a group of Nigerian villagers. The villagers had unsuccessfully sued the company over the shooting of protesters who occupied an offshore oil rig. An attorney for the Nigerians said the move was designed to scare off foreigners from bringing similar lawsuits in the future. In late 2008, a federal jury rejected allegations that Chevron had authorized Nigerian soldiers in May 1998 to murder two villagers at a Chevron oil platform's tethered barge. U.S. District Judge Susan Illston has delayed ruling on Chevron's request until after a March 6, 2008 hearing on the Nigerians' motion for a new trial. *See* D. Bulwa, *Chevron seeks legal costs from Nigerians*, San Francisco Chronicle (Feb. 9, 2009), *available at* http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2009/02/08/MNG515PU4S.DTL (last visited Feb.10, 2009).

Editor's Note: to keep you updated on the transition to the new Obama administration, we have compiled the a chart of confirmed or nominated agency heads and biographical Web sites (Figure 1).

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LEGAL POSTURE OF OCEAN IRON FERTILIZATION UNDER INTERNATIONAL LAW

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I. Introduction

This paper provides an overview of the legal posture of ocean iron fertilization (OIF) activities under international environmental law. The global regulatory framework for OIF is still evolving, but it has been significantly clarified over the course of the past year.

The ink was barely dry on that new framework when it was applied by the German government with respect to a joint German/Indian OIF scientific research mission to the Southern Ocean known as LOHAFEX. Soon after the LOHAFEX research vessel left port in South Africa in January 2009, the German Environment Ministry requested that the project be halted, based on newly raised concerns that the experiment was not consistent with a resolution adopted last year under the Convention on Biological Diversity (CBD). In response, the German Research Ministry rapidly initiated an evaluation of the project and its potential environmental impacts, seeking advice of independent third-country scientists. Within two weeks, and despite the continuing objection of the Environment Ministry, the Research Ministry determined that the project posed minimal environmental risks and raised no other legal issues, and therefore authorized the experiment to proceed. In doing so, the German authorities took into account not only the CBD resolution but also more detailed guidance developed under two separate international agreements.

The LOHAFEX case thus presents an interesting example of how authorities are often required to apply, and in some cases reconcile conflicts between, distinct legal and policy frameworks that arise under separate treaties. In addition, the OIF regulatory developments themselves merit more general attention as a potential model for the international community in evaluating how to regulate other forms of "geoengineering" to mitigate climate change.

II. What is OIF?

OIF is a technique for stimulating phytoplankton blooms in the ocean by adding iron nutrients to the water column; iron serves as a trace nutrient that is essential for phytoplankton growth. Natural processes, such as dust storms, river discharge and volcanic eruptions, deliver millions of tons of iron to the ocean, which in turn triggers a cycle of naturally occurring phytoplankton blooms. Analogous to an underwater forest, these blooms remove large amounts of carbon dioxide from the atmosphere through photosynthesis while simultaneously providing the foundation for the food chains in the ocean. OIF, in which humans stimulate this activity intentionally on the high seas, has been proposed and studied as a tool to help mitigate global climate change—indeed, a potentially dramatic and cost-effective tool.

Although the science of OIF is promising, it has also proven to be controversial in light of uncertainties about potentially unforeseen environmental impacts. Questions have been raised about its efficacy for long-term sequestration of carbon, its measurability, and its generation of byproduct greenhouse gases. Some opponents have also argued that research should be halted until more is known about the possible impacts in the form of eutrophication, harmful algal blooms, anoxia, and ecosystem shifts or food chain impacts. Members of the science community, meanwhile, believe that such questions can only be answered with further research and experimentation. And still other questions have been raised about the role of commercial interests and the carbon market as a driver for these activities, as well as related issues involving property rights and the use of the global commons. Many of these questions have been addressed, if not yet fully resolved, in several multilateral fora over the past year.

III. Legal Framework

A. The 1972 London Convention and the 1996 London Protocol

The deliberate disposal of wastes and other matter into marine waters is governed primarily by two agreements that regulate marine "dumping": the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Convention, or LC); and a 1996 Protocol to the LC (the London Protocol, or LP). *See* www.imo.org. The LC requires Parties to impose a permitting requirement for dumping and prohibits dumping certain substances. The LP strengthens the LC by requiring parties to prohibit all dumping with the exception of certain listed substances, which may be only dumped in accordance with a permit.

A threshold question is whether OIF would fall within the scope of these agreements given that both are focused on the disposal of wastes, not the introduction of matter into the ocean for purposes other than disposal. The issue turns on an application of the term "dumping": if the discharge of iron to generate plankton growth *is* "dumping," then these agreements will apply. If not, then the permitting requirements under these agreements will not apply.

The term "dumping" is defined to include "any deliberate disposal into the sea of wastes or other matter from vessels…" but to exclude "placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of [the agreement]." *See* LC, art. III(1); LP, art. 1(4). In evaluating the application of these agreements to OIF, discussion has focused on:

- whether OIF constitutes placement of a substance "for a purpose other than the mere disposal thereof"; and
- whether such placement is contrary to the aims of the relevant agreement.

The question whether OIF is consistent with the aims of the relevant agreement remains the key focal point for the legal analysis. Ultimately, it is an interpretive question that involves both legal evaluation and an understanding of the underlying science. The parties to these agreements have, over the past 18 months, devoted considerable attention to these issues:

- In June 2007, a subsidiary scientific body adopted a "Statement of Concern" in response to reports that a commercial operator planned to initiate an OIF project in the vicinity

of the Galapagos Islands.

- In November 2007, the Consultative Meeting of the Parties to these agreements (a) endorsed the statement of concern, (b) agreed that the LC/LP were competent to address ocean fertilization issues, (c) recognized that it is within purview of each State to consider proposals on case-by-case basis, (d) urged States to use "utmost caution" when considering proposals for large-scale projects, and (e) mandated a scientific subsidiary body and an intersessional legal group to provide further details and clarification on the treatment of ocean fertilization under the agreements.
- In May 2008 the subsidiary scientific body met again on OIF issues. It developed a list of criteria and considerations to be used in evaluating proposed research activities.
- Over the summer in 2008, a legal group solicited input on the key legal scope questions that had been raised and compiled the responses, which varied considerably across many of the open issues.
- In October 2008, these efforts culminated in the adoption of a framework resolution at the LC/LP meeting of the Parties, discussed further below.

B. Law of the Sea Convention

The LC and LP are not the only international agreements relevant to OIF. The 1982 UN Convention on the Law of the Sea (LOS Convention) serves as a framework agreement governing all aspects of oceans law and policy. The LOS Convention imposes certain general obligations with respect to the marine environment that may be relevant to OIF activities. Article 210, for example, specifically governs "pollution by dumping." It provides that states are required to adopt laws to prevent pollution by dumping, to work through competent international organizations (meaning in this case the treaties housed at the International Maritime Organization (IMO)) to establish global rules, and to adopt national regulations no less effective than the global rules. As a result, the LOS Convention points to the LC and LP to clarify the more specific rules that govern "dumping," and effectively extends the coverage of the LC and LP to include all parties to the more widely-ratified LOS Convention.

The Convention also includes a duty in article 195 to act "so as not to transfer, directly or indirectly, damage from one area to another *or transform one type of pollution into another.*" Some commentators have suggested that these provisions serve as a primary source of law governing OIF activities. But it is unclear how such provisions would apply in light of the deference in the LOS Convention to the LC/LP agreements. In addition, article 195 has never been applied to impose such rigid constraints. Indeed, it has been interpreted in precisely the opposite direction, to introduce a necessary measure of *flexibility*. The 1985 UNEP "Montreal Guidelines for the Protection of the Marine Environment from Land-Based Sources," for example, clarify that analogous language in the Guidelines "does not prevent the transfer or transformation of pollution in order to prevent, reduce and control pollution of the environment as a whole." Given that OIF is aimed at producing an environmental result that is beneficial to the environment as a whole, this interpretive gloss provides an important perspective on the relevance of article 195 to OIF activities. In short, with respect to OIF it appears that the LOS Convention serves primarily as a legal vehicle for extending the standards and rules established under the LC/LP to those countries that are parties to the LOS Convention but not to the LC/LP, rather than to establish independent constraints or rules on OIF activities.

C. The Convention on Biological Diversity

In May 2008, the 9th Conference of the Parties (COP) of the CBD adopted, with little open deliberation or input, a decision that expressed concerns about OIF. The decision provides that the COP:

> "[r]*ecognizes* the current absence of reliable data covering all relevant aspects of ocean fertilization; and, [b]*earing in mind* the ongoing…analysis occurring under the [LC and LP], *requests* Parties ..., in accordance with the precautionary approach, to ensure that ocean fertilization activities do not

> take place until there is an adequate scientific basis on which to justify such activities, including assessing associated risks, and a global, transparent and effective control and regulatory mechanism is in place for these activities; with the exception of small scale scientific research studies within coastal waters. Such studies should only be authorized if justified by the need to gather specific scientific data, and should also be subject to a thorough prior assessment of the potential impacts of the research studies on the marine environment, and be strictly controlled, and not be used for generating and selling carbon offsets or any other commercial purposes.

Decision IX/16, *available at* https://www.cbd.int/decisions/.

The CBD decision has been criticized by policy-makers and the scientific community for its lack of scientific rigor, evidenced among other things by the exception it makes for OIF research in "coastal waters," where OIF activities would be least effective and most harmful. One scientific group close to the issue called the decision "arbitrary" and "counter-productive," with "no scientific basis." *See* "Statement of the IOC Ad Hoc Group on Ocean Fertilization," June 14, 2008.

It seems likely that the CBD decision will not be determinative in the context of permitting authorities considering project proposals. Among other things, the decision expressly acknowledges the London Convention and 1996 Protocol as directly involved in overseeing these activities. Given that the Parties to the LC and LP have acted since the CBD decision was taken, and are likely to take additional steps before the CBD subsidiary body meets in May 2010, it is very likely that the weight of policy-making activity will shift even further toward the LC/LP and away from the CBD over the next two years.

As a legal matter, moreover, the CBD decision can also be read as limited in time to the circumstances in place when the decision was adopted. The request to ensure that OIF activities do not take place applies only "until there is an adequate scientific basis on which to justify such activities, including assessing associated risks, and a global, transparent and effective control and regulatory mechanism is in place for these activities." As discussed below, the recent LC/LP resolution arguably constitutes such a regulatory mechanism, thus effectively superseding the CBD decision by the terms of the CBD decision itself.

IV. The October 2008 LC Resolution

The LC/LP Consultative Meeting's Resolution on ocean fertilization adopted on Oct. 31, 2008 serves as the international community's most substantive recent statement with respect to the regulatory framework for OIF, and therefore bears close scrutiny in this context.

Although not legally binding, it is legally relevant to the extent that it constitutes subsequent practice or subsequent agreement of the parties regarding the interpretation of the LC's terms. In the meantime, the LC/LP Resolution serves as the most comprehensive statement regarding the regulatory framework for OIF under international law. The noteworthy features of the Resolution are outlined below.

First, as noted above, the Resolution serves to significantly limit, if not repudiate entirely, the earlier decision by the CBD. The Consultative Meeting was clearly conscious of the CBD decision because it cited the CBD decision in the preamble to the resolution. Yet the Consultative Meeting chose to depart from the CBD approach in at least three key respects:

- It seeks to *encourage* scientific research on OIF.
- It does not exclude scientific research activities funded by commercial interests. That omission is significant not only in light of the CBD decision but also against the backdrop of the intersessional work, where the role of commercial activity was a significant issue. The Parties' decision to omit any references or limitations as such can be read to confirm their understanding that commercial activity is not *per se* incompatible with scientific research.
- It states definitively that "the scope of the London Convention and Protocol includes ocean fertilization activities." In doing so, the Consultative Meeting—which includes many (but not all) of the governments that

participated in the earlier CBD decision—signaled that the LC/LP is the appropriate forum in the international community for regulating OIF activities.

Taking these points together, the Resolution arguably displaces the CBD decision in terms of any practical or operational significance that the CBD decision might otherwise have had, at least for the significant number of countries that are Party to both the LC or LP and the CBD.

Second, the Resolution clarifies that a project that constitutes "legitimate scientific research" should be considered "placement of matter for a purpose other than the mere disposal thereof." This is relevant because, if an activity constitutes placement for a purpose other than disposal, it is not "dumping," provided that it is not contrary to the aims of the agreement. And if an activity is not "dumping," it does not require further permitting.

Under the Resolution, therefore, a Party faced with a proposed OIF research activity that falls within its regulatory jurisdiction must conduct a case-by-case assessment of the proposed activity in order to determine whether it constitutes "legitimate scientific research." If the Party assesses that the proposed activity *does* constitute "legitimate scientific research," no further review is required. This assessment will serve in effect as a permitting determination, since it will determine that a project is consistent with the requirements of the agreement. Indeed, a Party may wish to style this project review as an "assessment of eligibility" or some other grant of affirmative authorization, for the sake of regulatory clarity.

Third, the Consultative Meeting made it clear that it did not intend that a Party must wait for further LC/LP action before proceeding to review and approve an OIF project. Paragraph 6 of the Resolution specifically envisions that some LC parties may act earlier, and provides guidance to them for this interim period: "until specific guidance is available, Contracting Parties should be urged to use utmost caution and the best available guidance to evaluate the scientific research proposals to ensure protection of the marine environment consistent with the Convention and Protocol."

V. Next Steps

Although the October 2008 Resolution has immediate effect as non-binding guidance, the LC/LP parties will engage in further work during 2009 on OIF issues. For example, the scientific group under the agreements will elaborate "assessment criteria" to help Parties evaluate whether a project constitutes legitimate scientific research. And the Secretariat has initiated an intersessional process for a technical working group "on a risk assessment and management framework on ocean fertilization." In addition, a separate intersessional group on "Legal and Related Issues on Ocean Fertilization" will consider proposals to adopt a legally-binding amendment or resolution at the next LC/LP meeting. The nature of such proposals is currently unclear, although at a minimum they would presumably make binding a requirement to assess OIF proposals in accordance with assessment criteria. The recent German government authorizations for the LOHAFEX experiment are likely to be a focus of those discussions as well.

In the meantime, however, as the LOHAFEX case demonstrates, the LC/LP resolution provides a workable framework for OIF research activities, and may also serve as a useful point of reference for regulating geoengineering more broadly. Its virtues as a regulatory regime in this regard include:

- establishment of a mechanism to ensure that environmental issues are assessed in advance of OIF activities;
- establishment of an enabling framework for scientific research on promising technologies that could prove vital in the battle against climate change;
- it subjects research to an appropriate oversight mechanism with international input; and
- it is dynamic, and can evolve relatively easily in response to changing information.

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BIOFUELS AND CLIMATE CHANGE REDUX—INTERNATIONAL REGULATION AND TRADE UPDATE

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Since the Energy Independence and Security Act (EISA) was passed in December 2007, biofuels development has been both in the news for the irrational exuberance concerning ethanol, and in the tank (but some would argue not enough in the fuel tank). Biofuels have also been blamed for food price inflation, deforestation of large swathes of Borneo and the Amazon, and global land use changes that increase greenhouse gas (GHG) emissions rather than reducing them. One analyst estimates that ethanol use is better than nuclear war—but not by much.

Despite ambitious government mandates and strong financial support for the biofuels industry, so-called "first-generation" biofuels have raised a variety of economic, social, and environmental concerns. New information points to the urgent need for a major shift to more-advanced biofuels to prevent negative effects on the climate, land, soil, water, air, and rural economies.

Nearly all studies on the role of biofuels in mitigating global warming and boosting energy security have concluded that "second-generation" (or "advanced") biofuels, which rely on non-food feedstocks and offer dramatically improved energy and GHG profiles, are necessary to make wider use of biofuels feasible worldwide.

Aggressive mandates have ramped up production of biofuels and set the stage for a rapid increase in demand for second generation biofuels. But it remains unlikely that cellulosic and advanced biofuels will be able to meet the rapid increase in demand at a commercial scale, causing some critics to warn that corn-based ethanol and unsustainably sourced biodiesel and cane-based ethanol could expand their dominant market share at the expense of the environment and human rights.

If the United States and the rest of the world are to meet the aggressive mandates for biofuels in place, mitigate global warming by greater use of biofuels, and avoid the environmental, human health, and social welfare problems of first generation biofuels, it will be critical to advance second generation biofuels as quickly as possible and establish rigorous regulations on existing first generation biofuel production processes.

Refresher on Biofuels and Climate Change

Worldwide, efforts to replace oil with biofuels are at a critical juncture. On one hand, double-digit growth in the use of "first-generation" biofuels (those made by fermenting sugars from plants with high starch or sugar content) during the past three years has contributed to a rapid increase in food, feed grain, and soybean prices, as well as a sharp backlash from the environmental community. At the same time, the development of "second-generation" biofuels offers the promise of reduced carbon emissions, biodiversity benefits, and enhanced energy security. But the devil is in the details, as many of the costs and benefits of first- and second-generation biofuels depend less on the fuel and more on sustainability measures, land use practices, and international trade barriers that accompany them.

Evidence is building that the biofuels industry is creating a host of ecological problems while failing to deliver real reductions in GHG emissions. Much of the debate has focused on the total global warming footprint of first generation biofuels, which largely depends on the feedstock used, how and where this feedstock is grown, any land-use changes, and how the fuel is processed. For example, the GHG lifecycle assessment of corn or sugar ethanol can be largely dependent on the source of energy used in the refining process. During ethanol refining, as much as 90 percent of the lifecycle GHG emissions can come from powering the process with natural gas. But as the price of natural gas has risen, many ethanol refineries have switched to more carbon intensive coal. which accounts for nearly 100 percent of the emissions in the refining stage.

The growing demand for biofuels is also creating global pressure for carbon-emitting deforestation and land conversion, as food and fuel compete for scarce resources. This can lead to rises in food prices and greater land conversion in other countries to grow food to meet this demand. Work is underway to refine and further develop methodologies to measure indirect effects, particularly where measurement is required by law. This has resulted in efforts to define and measure the amount of "degraded" land that might be available to grow crops for biofuel use, and efforts to assess the value of these lands for biodiversity.

While first-generation biofuels have largely been at the center of the food versus fuel debate, cellulosic biofuels have not been immune from criticism. Calculation of use of land for biofuels globally, even if these biofuels are non-food crops, casts doubt on the GHG emissions potential of cellulosic as well as conventional biofuels. Fundamental to the calculation of the GHG benefits of cellulosic biofuel will be whether it is grown on land that could grow food, and on how much land is needed to grow whatever feedstock is used. It is possible that more land would be needed to produce some second-generation biofuel feedstocks than their equivalent in terms of first-generation food crops. This is because yields differ according to feedstock. Food crops grown for biofuel also have secondary uses—for instance, as animal feed. For GHG emissions purposes, a second look at second-generation biofuel feedstocks would lead to increased emphasis on those second-generation feedstocks produced from algae, municipal solid waste, agricultural residues, and forest wastes.

Other advanced biofuel feedstocks include non-plant sources such as fats, manure, and the organic material found in urban waste. In addition, algae production has great promise because algae generate higher energy yields and require much less space to grow than conventional feedstocks. Algae also would not compete with food uses and could be grown with minimal inputs using a variety of methods. Second-generation biofuels bring advances in processing as well. For biodiesel, newer technologies abandon the reliance on natural oil feedstocks, allowing for larger-scale production, greater use of industrial and urban wastes, and the creation of synthetic fuels from a wider range of biomass.

However, critics are right to be skeptical about these benefits, and about the economic and environmental conditions that must accompany them in order for them to be realized. The climate change benefit case for second-generation biofuels rests on the calculation that cellulosic biofuels result in much lower GHG emissions than either corn ethanol or soybean biodiesel. Current estimates suggest that fueling vehicles with cellulosic ethanol could reduce GHG emissions by 86 to 94 percent compared to gasoline, versus a reduction of only 12 to 18 percent on average for corn ethanol. But this calculation is based on a number of key assumptions, including that (a) advanced technologies allow more energy to be released per plant and per unit of land; (b) the feedstock requires little-to-no tilling, irrigation, or chemical inputs; and (c) already degraded agricultural land or land planted with annual row crops is converted to native grasses and trees. Obviously, these processes need more research before investment is concentrated in them.

Biofuel Production and Trade

Global biofuel production and trade have expanded rapidly in recent years. World ethanol production has more than doubled over the past 8 years, rising from 7.8 billion gallons in 2000 to an estimated 20.9 billion gallons in 2008. World trade in ethanol has grown even more rapidly, increasing from 792 million gallons in 2000 to more than 2 billion gallons by 2007. The United States remains the lead producer of biofuels worldwide with its corn-based ethanol production rising 38 percent from 6.5 billion gallons in 2007 to an estimated 9 billion gallons in 2008. By 2010, it is estimated that production could top 12 billion gallons, which would exceed existing federal renewable fuel standard targets.

Biodiesel production has been growing rapidly as well. Germany is the largest producer of biodiesel from rapeseed, and Indonesia and Malaysia the largest producers from palm oil. The United States has an estimated 170 biodiesel plants nationwide, but their combined annual capacity was only 2.3 billion gallons

in 2008. However, another 1.1 billion gallons of capacity are slated to come online by mid-2009.

Cellulosic ethanol production in the United States still lags woefully behind corn-ethanol at the commercial scale, and prospects are not good for increased investment absent additional incentives such as those that might be planned as part of the economic stimulus package. Currently, there are an estimated fifty-five cellulosic refineries planned, under construction, or operating in thirty-one states. Most of them are planning to begin operations in 2010 or 2011. Despite this recent growth in production capacity, there is still little chance that significant amounts of cellulosic ethanol will become widely available any time soon, and there is a high probability that corn ethanol will continue to dominate domestic biofuel production. This is true even though other kinds of biofuels might deliver much greater benefits in terms of carbon emissions.

One reason for this is that the United States has long had an extensive network of subsidies, production incentives, and tariffs to protect its domestic ethanol industry. However, growing concern over the GHG lifecycle of corn-based ethanol, its indirect impact on land use at home and abroad, and an overly aggressive target for yet to be commercialized advanced biofuels have resulted in the repeal or scaling back of a number of key U.S. biofuel incentives and trade barriers.

For example, beginning in 2009 the volumetric ethanol excise tax credit, commonly known as the blender's credit or VEETC, was reduced from 51 to 45 cents per gallon—a significant drop in the single largest subsidy to the U.S. ethanol industry since it was passed in 2004. Another important barrier was overcome at the end of 2008 with the closing of the "splash and dash" loophole, which enabled U.S. refineries to take advantage of a similar $1.00 per gallon volumetric biodiesel excise tax credit (VBETC) by blending and re-exporting imported biodiesel. In addition to closing the splash and dash loophole, the 2008 Farm Bill also put an end to duty drawbacks, which enabled ethanol exporters to the United States to offset the duty by exporting a like product. Together, these changes may help reduce the free flow of ethanol imports to the United States.

Although these developments hint at a leveling in the burgeoning international trade in biofuels, some important barriers still exist. Chief among them is the 54 cent per gallon tariff, which was recently extended through 2010. Some have argued that eliminating this tariff would help spur production and use of ethanol that might be more sustainable in terms of carbon emissions, reduce pressure on U.S. cropland, and encourage international trade in a more sustainable commodity. Brazil has pressed the issue even further by signaling that it may consider bringing a case against the United States in the World Trade Organization (WTO). It remains unclear what action the United States will take, but pressure is clearly building for a showdown on the issue, and for increased cooperation.

Prices for biofuels have also fluctuated wildly over the last year, exacerbating trade conflicts and making biofuel project planning and signing supply contracts extremely difficult. Corn prices in 2007 and the first half of 2008 rose so dramatically that some ethanol refineries had problems with supply; as food prices increased in the United States and abroad, livestock and poultry producers argued that they could not afford to compete for corn supplies. When oil prices started to fall in late 2008, some large ethanol plants that had bet on continuation of high energy prices announced they were going out of business.

Renewable Fuels Standards and Sustainability Measures

The passage of EISA marked a significant turning point in U.S. efforts to include second-generation biofuels in renewable fuels standard (RFS) mandates. EISA sharply shifted both the curve and the expectations upward, setting a goal of 36 billion gallons by 2022, with separate, nested mandates for advanced biofuels (21 billion gallons), biodiesel (1 billion gallons), and cellulosic biofuel (16 billion gallons). EISA also directed the U.S. Environmental Protection Agency to lead the effort to define and determine the lifecycle accounting process and assessment, and to assess the indirect effects of biofuels production. These effects, net demand increases for land use for both food and fuel, would contribute to GHG emissions increases.

Together, these potential effects and others predicted for biofuels have led to development of global and national programs advocating certification of the sustainability of biofuels to avoid negative economic, environmental, and social effects.

California's low carbon fuel standard (LCFS) is a prime example. The LCFS aims to progressively reduce the carbon intensity of transportation fuels to 10 percent by 2020. It also requires biofuel refiners, blenders, producers, or importers of transportation fuels to meet a climate footprint life-cycle analysis beginning in 2010. Biofuels that can be used to comply with the LCFS include low carbon ethanol (sugarcane, switchgrass, waste residues) and renewable biodiesel from soy, animal fat, and recycled cooking oils. The LCFS will essentially require the development of sustainable development standards and best management practices for biofuel feedstocks and other renewable energy sources.

At the same time, the European Union (EU) has also resolved how to craft an ambitious biofuels mandate. The EU has approved a binding mandate requiring that 10 percent of transport fuels must be from biofuels by 2020, with at least 20 percent of energy used in the EU to come from renewable sources by 2020. The mandate also envisions a 20 percent reduction of GHG emissions below 1990 levels by 2020. This is in part conditional on sourcing sustainable biofuels. The European Commission estimates that implementing the 10 percent by 2020 mandate would consume production from 15 percent of the utilized agricultural area, but that 30 percent of biofuel production would be from second generation biofuel and 20 percent would be imported. Also, new fuel standards, which require suppliers to reduce GHG emissions per unit of energy by 1 percent a year from 2010 levels will require life-cycle analysis of biofuels to determine if they actually provide a benefit in reducing GHGs.

Voluntary sustainability measures are also taking shape internationally. A variety of private and public multi-stakeholder initiatives have already been launched, and they have developed or are in the process of developing draft sustainability standards for the biofuels industry at the regional or international scale. The Council for Sustainable Biomass Production (http://www.csbp.org/) is working to develop such criteria for second-generation biofuels, including cellulosic biofuels, for the U.S. and Canadian market. Meanwhile, the Roundtable for Sustainable Biofuels (http://cgse.epfl.ch/page65660.html) is working with multiple stakeholders to establish international criteria that would guide production and processing of many kinds of biofuel feedstocks. Many important players in biofuel value chains are already engaged.

Internationally, work has been proposed within the International Standards Organization on sustainable biofuels criteria, and there is a European standard under development within the European Standards Organization. Additionally, the Global Bioenergy Partnership (GBEP, G8 + Brazil, Mexico, China, India, South Africa), has identified an initial set of key sustainability criteria encompassing environmental, economic, social, and energy security. IEA Task 40 (part of the Organization of Economic Cooperation and Development) will also, until the end of 2009, facilitate implementation of sound certification on an international level with the United Nations Conference on Trade and Development, the World Trade Organization (WTO) , and the Food and Agricultural Organization, and will map and develop quality assurance procedures. These will accompany emerging national programs such as Japan's voluntary carbon footprint labeling scheme.

Climate Change—Moving into the Regulatory Arena

As the new Obama administration takes shape, regulatory changes are expected that could influence both biofuels and climate change policies. On the international trade front, the ethanol tariff may be revisited together with other trade policies affecting biofuel use. Domestically, subsidies for the green economy are also in the offing, and green jobs remain part of the ambitious stimulus package. Continued support for cellulosic innovation and production are likely, and removal of the regulatory limits for blending of ethanol may also be revisited.

Finally, renewed legislative proposals to implement a GHG emissions reduction target in the form of either a cap-and-trade system or a taxation system are

expected, together with the necessary debate on whether measures that level the playing field for imports (e.g., access to tradeable permits or border tax adjustments) are consistent with U.S. obligations in the WTO.

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BRAZIL'S FORESTRY PLAN GAINS MOMENTUM AFTER POZNAN

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"Just last week Brazil proposed an *impressive* new plan to halt the destructive deforestation in that nation," said former U.S. Vice President and Nobel Peace Prize recipient Al Gore during his speech at the December 2008 Fourteenth Conference of the Parties (COP) to the Framework Convention on Climate Change in Poznan, Poland. Whether or not progress was made in Poznan has been the subject of much debate. Nevertheless, there seems to be no doubt that Brazil confirmed its leading role in combating climate change at the 2008 COP.

Brazil's efforts to mitigate global warming by addressing issues at the heart of the problem, such as renewable energy deployment and avoided deforestation, were praised not only by Al Gore but also by U.N. Secretary General Ban Ki-Moon, who commended the country's green initiatives and noted at his opening speech in Poznan that "Brazil is an example of [a] 'green economy' that must be followed by the rest of the world."

Furthermore, a joint ministerial declaration to reduce greenhouse gas (GHG) emissions from deforestation was launched in Poznan and endorsed by European Environment Commissioner Stavros Dimas. The declaration commits key rainforest developing countries and a number of industrialized nations to take early action to reduce GHG emissions from deforestation and forest degradation transactions, a mechanism generally known as Reduction of Emissions from Deforestation and Forest Degradation (REDD). "The European Commission has proposed the creation of an international financial mechanism to reward developing countries for their efforts to reduce emissions from deforestation," Commissioner Dimas said. That is the primary rationale behind Brazil's deforestation proposal.

Getting Off on the Wrong Foot

After much ado, in late September 2008, Brazil launched its highly-anticipated National Climate Change Plan (the "Draft Plan") for public comment. The Draft Plan, which encompassed mitigation, renewable energy and biofuel expansion, greater participation in the international carbon markets, deforestation and adaptation, was heavily criticized by environmentalists and non-governmental organizations (NGOs) for not setting out specific GHG emissions reduction targets and timelines to achieve reduction goals. To complicate matters, Brazil's Draft Plan allocated no funds and set no deadlines or specific measures to control and prevent deforestation in the Amazon, other than imposing greater penalties for unlicensed loggers. Taking into account that approximately 75 percent of the country's GHG emissions are estimated to be caused by deforestation, it seems reasonable that any robust climate change plan should address the question in certain detail.

Environmental groups and NGOs urged Brazil's legislators during the public comment period to rework the Draft Plan and establish tangible commitments to reduce, and ultimately eliminate, deforestation in the Amazon rainforest. Even Brazilian Environment Minister Carlos Minc called for specific and mandatory GHG emissions reduction targets after the Draft Plan was launched. Nonetheless, considerable uncertainty surrounded the Draft Plan's future following the consultation period, as the interests of various sectors of the economy as well as of other government ministries clashed.

Brazil Takes a Step in the Right Direction at Poznan

Notwithstanding the internal political dispute among government ministries, and despite resistance to taking strong action from certain industry leaders, who believed that mandatory GHG emissions reduction targets would render Brazil's energy-intensive companies uncompetitive, the Brazilian government and legislators vowed to establish mandatory carbon dioxide (CO_2) emission reduction goals primarily by way of reducing rainforest destruction. To accomplish these objectives, Brazil released a revised plan on Dec. 1, 2008.

Brazil's revised National Climate Change Plan (the "Revised Plan"), launched to coincide with the COP in Poznan, defines specific goals for massive emissions reductions from deforestation in the Amazon. Under the Revised Plan, the Brazilian government establishes a goal of reducing the annual rate of deforestation by 40 percent from average 1996-2005 levels during 2006-09, with reductions of a further 30 percent in each of the subsequent four-year periods. The goal is to reduce deforestation in the Amazon by 70 percent between 2006 and 2017. If achieved, these reductions will mitigate the release of approximately 4.8 billion tons of CO_2 into the atmosphere.

In an attempt to improve Brazil's image after almost a decade of global criticism for not adopting policies to reduce pollution caused by deforestation, the plan marked a long-awaited change in the Brazilian government's position. Whereas previously, Brazil's position tended to be tremendously defensive and focus on fossil fuel use as a driver of climate change, it now appears ready to institute pro-active measures of its own. However, Brazil's attitudinal shift regarding deforestation is also clearly intended to diminish overall reluctance by industrialized countries to finance forest-based projects, and to transfer technology to help Brazil reach the targets set out in the Revised Plan.

To that end, an important component of Brazil's Revised Plan relates to the crucial role of the *Fundo Amazônia* (Amazon Fund), which was created in August 2008 to raise financial resources nationally and internationally for the reduction of deforestation, sustainable land use, and forest conservation. According to the Revised Plan, "[c]ombating deforestation and providing incentives for the economic adaptation of the forest region require a large amount of resources. Achieving these reductions will depend on national and international resources, including those obtained by the Amazon Fund, both new and additional, at levels corresponding to the dimension of the problem." Using the Amazon Fund as the main vehicle, Brazilian officials expect to raise over $21 billion by 2021.

Slowing Deforestation as a New Market Driver

The forest investment sector appears to be ready to blossom, and the leadership position Brazil established in Poznan is poised to strengthen and accelerate this process. Given that the vast majority of the Amazon rainforest lies inside Brazil, and that the Amazon rainforest occupies over 65 percent of Brazil's territory, the targets, policies, and financial instruments adopted in Brazil are likely to have a major impact on how the rest of the world deals with climate change mitigation.

The good news is that Brazil's forestry proposal—in particular vis-**B**-vis the Amazon Fund—is fully in line with the directives and commitments agreed upon at the 2008 COP.

While the question of whether carbon credits will be generated from land and forest-based projects still is up for discussion, the basic idea behind the Amazon Fund is very straightforward. It contemplates payments by developed countries to key rainforest countries for reducing emissions from deforestation and forest degradation. The design is also simple: assuming 1996-2005 levels, for every marginal ton of carbon dioxide not released into the atmosphere as a result of avoided deforestation projects, Brazil is entitled to receive $5. For example, based upon this calculation, and using as a factor how much forest cover was preserved in 2006/2007, the country may withdraw from the Amazon Fund only up to $1 billion in 2009, thereby getting more projects off the ground. The World Bank and voluntary donors would then fund infrastructure capacity building efforts.

Conceptually, the COP strategy for REDD is remarkably similar to Brazil's proposal. As mentioned above, a joint ministerial declaration on REDD launched at Poznan set out what rainforest countries and the international community should be working toward in order to reduce deforestation and protect tropical forests. In brief, forest-rich developing countries should show their willingness to develop national REDD strategies in cooperation with interested stakeholders, including indigenous peoples, other civil society groups, and the private sector. Developed countries endorsing the statement affirm that they will assist developing countries build up their capacity to develop national strategies, and will reward those that move quickly to demonstrate quantifiable and verifiable emission reductions.

In addition, the European Commission has not only endorsed the declaration, but it also "has proposed the creation of an international financial mechanism to reward developing countries for their efforts to reduce emissions from deforestation."

The rainforest countries involved are Brazil, Cameroon, Congo, Costa Rica, Guatemala, Guyana, Indonesia, Madagascar, Panama, Papua New Guinea, Peru, Surinam, Singapore, Thailand, and Uganda. Developed countries which endorsed the statement are Australia, Belgium, France, Germany, the European Commission, Japan, the Netherlands, Norway, and the United Kingdom.

It is no accident that Brazil has a head start. Even before Poznan, Brazilian Environment Minister Carlos Minc voiced his opinion that the Amazon Fund should be a global model for any REDD scheme likely to be adopted as part of the global climate agreement which the international community must conclude by the end of this year. According to Minc, "our war is not won simply by reducing illegal burning in one month; it will be won only when this environmental model that is destroying our communities and our biodiversity is history."

Some developed countries, such as Norway, Germany and the United Kingdom, already have given Brazil a vote of confidence. For example, in August 2008, the government of Norway pledged $1 billion toward the Amazon Fund over seven years, aimed at improving forest conservation and the enforcement of laws regarding deforestation.

Conclusion

There is no doubt that deforestation is still a contentious issue. For example, during the U.N. Climate Talks in Poznan, the United States, Canada, New Zealand, and Australia argued that references to rights of indigenous peoples should be stricken from the text of a future climate agreement, even though these nations favor the adoption of a REDD scheme post-2012. This is in sharp contrast to both the COP joint ministerial declaration on REDD and Brazil's Revised Plan, which support the idea that key actors on the ground also should be compensated for their efforts to slow deforestation.

Furthermore, it is still unclear what role the private sector will play in achieving more ambitious reductions in deforestation. Overall, there is increasing interest by investors in what opportunities exist in the "green" arena, in particular with respect to socially responsible investing. Forest-based projects would appear to fit well within this green investment model. The question will be how legislation will be shaped, and what will drive return on investment.

In like fashion, it remains to be seen whether tropical forests will be included in the world's largest carbon markets. Methodological and linkage concerns, however, so far have persuaded the European Union Emissions Trading Scheme to not include tropical forests in its mechanism. The impending climate change regime in the United States, nonetheless, might be capable of leveling the playing field. In that respect, California, Wisconsin, and Illinois recently signed a Memorandum of Understanding (MOU) with, and pledged financial aid for efforts to curb logging in, Indonesia and Brazil. The MOU may eventually allow investors in the Brazilian and Indonesian forest-preservation projects to earn credits they are given and trade these credits in emerging regional U.S.emissions-trading programs.

While the outcome is still uncertain, the timing and venue used by Brazil to launch its Revised Plan were

undoubtedly wise. Designing and implementing effective REDD mechanisms has been, and will continue to be, included in climate talks in the years to come. And the possibility that forest-rich countries will receive grant support as they build their capacity for REDD, including establishing emissions baseline levels, developing national strategies to reduce deforestation and forest degradation, and designing monitoring systems, seems to be more likely than ever.

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COUNTRY OF ORIGIN LABELING AND ITS POTENTIAL TRADE IMPLICATIONS IN THE OBAMA ADMINISTRATION

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After a decade of dialogue and controversy, federal legislation requiring food suppliers to provide country-of-origin labeling (COOL) to consumers is finally in full force. Economists and policy experts can hypothesize about the long-term effects on the livestock business and livestock prices, but it is important to understand COOL's implications for livestock producers and international trade. Additionally, it will be interesting to observe how the new Obama administration and the new Secretary of Agriculture, Tom Vilsack, implement COOL.

Background

For many years, voluntary COOL regulations have been in place for beef, lamb, pork, and perishable agriculture commodities and peanuts. Recently, the 2008 Farm Bill amended the Agricultural Marketing Act of 1946 (AMA) once more by finally making COOL mandatory. *See* 7 U.S.C. § 1638, *et seq*. The 2008 amendments added chicken, goat, ginseng, pecans, and macadamia nuts to the list of "covered commodities" under COOL. The interim final rule was published by the U.S. Department of Agriculture (USDA) in the Federal Register on Sept. 30, 2008. *See* 7 C.F.R. Part 65 (2009). The comment period has been closed on the interim final rule.

Excluded from COOL are "processed foods" and "mixed foods." For example, raw pork chops will be labeled, but not ham or bacon. Also, COOL is applicable at the retail level only—not the food service industry or butcher shops. *See* 7 C.F.R. § 65.300. In other words, the menus at your favorite steak restaurant or local tavern are not required to comply with COOL requirements.

Labeling Categories

Pursuant to 7 C.F.R. § 65.400(a), "[c]ountry of origin declarations can either be in the form of a placard, sign, label, sticker, band, twist tie, [or] pin tag" labeling the retail unit as a "Product of USA," "Produce of the USA," or "Grown in Mexico." Alternatively, the labeling may simply be in check box form. That said, there are four major categories for COOL designation for beef, lamb, pork, chicken, and goat meat:

(1) United States Only (Category A): This category includes meat derived from animals "exclusively *born*, *raised* and *slaughtered* in the United States." 7 U.S.C. § 1638a(a)(2)(A) (emphasis added). As a general rule, to be labeled as a "Product of the U.S.," the animal product needs to have been on U.S. soil from birth until its retail sale. The only exception is meat derived from an animal "born in Alaska and Hawaii and transported through Canada for no more than 60 days." 7 C.F.R. § 65.260.

(2) Multiple Countries of Origin (Category B): This category includes meat derived from animals "*not exclusively* born, raised, and slaughtered in the United States [but] born, raised, *or* slaughtered in the United States, and not imported into the United States for immediate slaughter." 7 U.S.C. § 1638a(a)(2)(B) (emphasis added). Stated differently, in order to qualify under Category B, the livestock animal must have spent at least one phase of its life in the United States, and one phase outside the United States (e.g.,"Product

of U.S. and/or Canada"). *See* 7 C.F.R. § 65.300(e)(1)(i).

(3) Imported for immediate slaughter (Category C): This category includes "meat that is derived from an animal that is imported into the United States for immediate slaughter." 7 U.S.C. § 1638a(a)(2)(C). More specifically, this category applies to livestock imported into the United States less than two weeks before they are harvested (*e.g.*, "Product of Mexico and the U.S."). *See* 7 C.F.R. § 65.300(e)(1)(ii). Please note that the U.S. is listed last on the label in this instance because countries are listed in descending order of importance.

(4) Foreign (Category D): Finally, this category includes "meat derived from an animal that is not born, raised, or slaughtered in the United States." 7 U.S.C. § 1638a(a)(2)(D). Imported meat products will be labeled according to its origin, "as declared to U.S. Customs and Border Protection (CBP) at the time the product entered the United States, through retail sale." 7 C.F.R. § 65.300(f) (e.g., "Product of Canada").

Interestingly, Congress did not create an "unknown origin" label. From a livestock producer's perspective, if a particular animal's origin is not verifiable (e.g., a stray calf), then those animals will never been eligible for a Category A "Product of U.S." label. If the livestock animal can be proved to be contained within the United States, Canada, and Mexico during their life but harvested in the United States, such livestock will likely be labeled under Category B or C, depending on the time it spent in the United States before harvest. If a farmer or rancher decides to feed out an animal of unknown origin, livestock producers are able to *presume U.S. origin* so long as there are not markings or other means of identification that would indicate that the animal is of foreign origin.

Affidavit

A self-certifying affidavit is considered sufficient evidence to prove the origin of livestock. There are three types of affidavits, each of which used in different circumstances: (i) producer, (ii) consolidated, and (iii) continuous affidavits. Each should be used in different circumstances. If your local salebarn does not voluntarily provide any of these affidavits, make sure to ask them for a copy.

Producer Affidavit. Under the promulgated regulations, a "producer affidavit shall be considered acceptable evidence on which the slaughter facility may rely to initiate the origin claim, provided it is made by someone having *first-hand knowledge* of the origin of the animal(s) and identifies the animal(s) *unique to the transaction*." 7 C.F.R. § 65.500(b)(1) (emphasis added). This provision does not require that the person signing the affidavit be an owner or a ranch representative; however, this person must have personal knowledge *and* be able to identify animals "unique to the transaction" by way of eartag, number of head, breed and sex, the date of the transaction, and the name of the buyer. "First-hand knowledge" is knowledge gained from personal observation or experience, as distinguished from what someone else has verbally stated. That said, a recently hired ranch hand will likely be precluded from signing the producer affidavit.

Consolidated Affidavit. This type of affidavit is used when transferring livestock to another rancher. To illustrate, a consolidated affidavit would be used if you are a first-level producer raising feeder cattle to sell at the weaning stage, or when selling terminal cattle to the feedyard for finishing.

Continuous Affidavit. Some facilities are offering "continuous affidavits" for producers or livestock handlers. After signed once, continuous affidavits are valid in perpetuity until canceled. In other words, if you know you will only be selling cattle born and raised in the United States (or you know you will always be importing cattle from Canada), then you only have to sign this affidavit once, instead of signing a producer affidavit each time you return to the sale barn. One caveat to note, however, is that if you sign a continuous affidavit and anomalously have an animal that was born or raised outside your "norm," you must sign a separate producer affidavit for that particular head if your continuous affidavit is still valid. These continuous affidavits are favorable because they help with efficiency. The National Cattlemen's Beef Association (NCBA) has an electronic version of the affidavit online at www.beefusa.org.

Record Keeping

Typically, a self-certifying affidavit will be sufficient evidence to prove the origin of your animal; however, the federal regulations provide that the U.S. Department of Agriculture (USDA) will perform tracebacks and random audits. Because of this, all livestock producers must implement an accurate, efficient record-keeping system if one is not already in place. If audited, a livestock producer only has *five* business days to produce said documentation. For this reason, the requested information must be readily available. The regulations currently allow for either hard or electronic records and only require that the records be "legible." *See* 7 C.F.R. § 65.500(a). A failure to comply may result up to a $1000 fine. *See* 7 U.S.C. § 1638b(b). Livestock producers are responsible for maintaining records for up to *one year* from the date of the transaction. *See* 7 C.F.R. § 65.500(b)(3).

The 2008 Farm Bill changed COOL's record-keeping mandate: it states that "[r]ecords maintained in the course of the normal conduct of the business of such person, including animal health papers, import and customs documents, or producer affidavits" will serve as sufficient origin verification. 7 U.S.C. § 1638a(d)(2)(A). The USDA's Agricultural Marketing Service (AMS) has been asked by commentators to provide an enumerated list of required records. In the interim final rule, however, AMS maintained that producers only need such records *normally* kept in the course of business. Given the current ambiguity of the regulation, livestock producers should be prepared to present the following paperwork to ensure compliance with the industry standard:

(i) health and vaccination records;
(ii) birth and death records, as well as records of missing cattle;
(iii) production records including feed documents;
(iv) brand inspection documentation or ear tag (visual or electronic) records;
(v) all transaction records such as purchase receipts, lease records, scale tickets, bills of sale, and closeout records;
(vi) transportation and trucker records;
(vii) breed association registration papers, if available;
(viii) financial records such as balance sheets and income statements;
(ix) pen and pasture information including a site map with capacities; and
(x) beginning and ending inventory records (*e.g.*, number of bulls, virgin or bred heifers, open or bred cows, weaned lambs, bred ewes, barrows, gilts, etc.).

Under 7 C.F.R. § 65.500(b)(1), those cattle producers participating in the National Animal Identification System (NAIS) may "rely on the presence of an official ear tag and/or the presence of any accompanying animal markings . . ." in lieu of above listed records. In other words, participating in NAIS could ease the record keeping burden on farmers and ranchers.

Furthermore, a grandfather clause was included in the statutory language so that all livestock residing in the United States as of July 15, 2008 that *stay* in the United States will be considered U.S. born and raised; thus, the meat from those animals qualifies under Category A. Documentation is preferred to prove the animals were on U.S. soil before this threshold date. Further, any cattle that entered feedlot or finishing units after July 15, 2008 will need some type of record of origin (*e.g.*, health papers, production records, affidavit) to be eligible for sale by U.S. retailers.

Trade Implications

Only a few short months after COOL became mandatory, some effects had already become evident, especially vis-**B**-vis the U.S.'s North American Free Trade Agreement (NAFTA) counterparts. Recently, Mexican and Canadian trade officials have publically stated that they are concerned about (a) the possibility that COOL will encourage American consumers to favor U.S.-raised meat, and (b) COOL's effect on their livestock industries. As early as Oct. 7, 2008, the Canadian Cattlemen's Association, Canadian Pork Council, and National Cattle Feeders Association jointly made a statement to the USDA. In their press release, they state that only one month after COOL went into effect, the Canadian livestock industry had seen significant disruption in the markets and was expecting more negative impacts on volume and prices.

See https://www.ontariopork.on.ca. These developments are significant because according to the USDA's Foreign Agriculture Service (FAS), in 2007 Canada and Mexico were the United States' first and second export markets, respectively, for U.S. agriculture products.

According to the Associated Press, moreover, on Dec. 1, 2008, Canada filed a complaint before the World Trade Organization (WTO) in Geneva, Switzerland over COOL. Subsequently, Mexico joined Canada in its complaint. In a written announcement, Canadian Trade Minister Stockwell Day stated that COOL "is creating undue trade restrictions to the detriment of Canadian exporters." Canada's complaint asserts that COOL inflicts unnecessary costs on meat packers using animals derived from Canada. Beyond these concerns, Canada fears that other countries may follow the United States' lead on COOL and implement even greater restrictions for labeling.

Under WTO rules, Canada's complaint triggers a 60-day consultation period to allow for discussions between the complainants and the United States. If common ground cannot be found, the parties will then appoint a panel of three to five experts from different countries, which would function similarly to a tribunal weighing the evidence of the case. The panel's final report would then be circulated among WTO country members. Next, the WTO Dispute Settlement Body (DSB) would issue a ruling on the panel's recommendation unless it is rejected by a consensus among WTO members. Without an appeal, this process can take as long as one year to complete.

If the DSB were then to issue a ruling in favor of Canada and Mexico, the United States could be obligated to significantly alter COOL, perhaps reverting to a voluntary labeling program. Failure to comply with a DSB final ruling may result in the award of monetary damages to the complainants and possibly trade restrictions on U.S. goods. On the other hand, the United States could appeal an adverse decision to the WTO's Appellate Body. Ultimately, however, it will likely be years before the implications of Canada and Mexico's WTO complaint will be known. More information on the DSB procedures can be found at www.wto.org under the "trade topics" section.

USDA Secretary Vilsack on COOL

Another factor to consider is the advent of the Obama administration. We know very little about the views on COOL of Secretary of Agriculture, Tom Vilsack. As the former governor of Iowa, he is the first Iowan to be appointed to the position since the Great Depression. Secretary Vilsack appears to be a political centrist, and a staunch advocate of biofuels and biotechnology. On Dec. 17, 2008, Bob Stallman, president of the American Farm Bureau Federation (AFBF), stated that "[d]uring his tenure as Iowa's governor, one of the nation's top agriculture-producing states, Governor Vilsack was an ardent supporter of furthering the use of renewable fuels such as ethanol, biodiesel and wind, as well as an advocate for biotechnology. He has been a strong proponent of international trade and expanding our export markets." *See* http://www.fb.org. Because Secretary Vilsack is apparently a free trade supporter, it is possible he could lead efforts to alter COOL to soften its effects on trade and the U.S.'s NAFTA-counterparts.

Final Thoughts

Only time will tell what the long-term impacts of COOL will be on the livestock business, especially with respect to trade. It will be interesting to observe any efforts to change COOL led by Secretary Vilsack, and effects on COOL flowing from the complaints lodged before the WTO. In the meantime, to better assist farmers and ranchers in your state to stay in compliance with COOL, more information can be found at www.ams.usda.gov/COOL. Some states have implemented additional regulations, such as specific tag or branding requirements, or health provisions. State department of agriculture or state affiliate agriculture commodity groups may provide useful information regarding COOL and special state-specific standards.

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Global Climate Change and U.S. Law

Michael B. Gerrard, Editor

Because global climate change presents extraordinary challenges to the environment and the economy of United States as well as those of other nations, the debate about how to effectively implement more climate-friendly policies is sure to continue and amplify. The scientific case for strong action is becoming more compelling every month, and opinion polls show that the American public increasingly agrees. The law will play an important part in developing mechanisms to protect the climate, such as conserving energy, using renewable sources of energy, and implementing emission caps and trading programs.

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