

International Environmental Law Committee Newsletter

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MESSAGE FROM THE CO-CHAIRS

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This issue of the International Environmental Law Committee Newsletter focuses on India and China, reviewing important issues of domestic and international environmental law in these two countries as they strive to sustain their economic engines, growing populations, worsening environments, and ever diminishing resources. Rapid economic development over the past several decades in these two countries has moved many millions of people out of poverty, but also has had dramatic consequences for the environment, for example, leading to degradation of India's great Yamuna River, harmful algae blooms in Chinese waters, and air pollution in major cities of all sizes. On the climate front, the role of China as the world's largest emitter of greenhouse gas emissions and economic powerhouse has fundamentally changed the nature of the international negotiations, as most recently experienced in Copenhagen. India too has played an increasingly significant and assertive part in those negotiations.

Accordingly, this issue assembles the work of five authors to cover a diverse array of issues in these key neighboring countries, beginning with two articles on India. First, K. V. Singh and Shephali Mehra Birdi explain the important effect the Environment Protection

Act of 1986 (EPA) has had on the development of environmental law in India. The authors explain that EPA and its associated regulations provide the central government with a comprehensive suite of tools to address environmental protection, significantly impacting virtually all industrial operations in India in some way.

Next, Brett Grosko discusses the significant role that India played in the recent climate change negotiations in Copenhagen. By examining India's public positions on climate change over the past several years and its more recent actions, he concludes that the country will likely be crucial to success in the future of any international climate agreement as it seeks to reconcile both its own diverse domestic interests and competing demands from the developed and developing countries.

Shifting north to China, Wyatt Golding assesses recent amendments to China's Law on the Prevention and Control of Water Pollution. Focusing on the effects of aquaculture on water quality, Golding notes that the amendments require aquaculture to be cost-effective and protective of public health while seeking to bring about change through the empowerment of new institutions and citizen suits.

Patricia Britton then gauges the Clean Development Mechanism's (CDM) ability to transform the way China produces energy and manages its natural capital. Britton notes that the CDM, a key part of the Kyoto Protocol, is potentially too small in scale and project driven to help China achieve its broader climate change goals, which include a plan for emission intensity

**International Environmental Law
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Brett Grosko, Editor**

Inside this issue:

Message from the Co-Chairs
Jim Rubin and Roger Martella 1

Environment (Protection) Act of 1986—
Umbrella Legislation for Environmental
Protection
K. V. Singh and Shephali Mehra Birdi 3

India and Climate Change
Brett Grosko..... 6

Amended Water Law in China Holds the
Promise of Enhancing Enforcement Through
National Standards and Personal
Accountability
Wyatt Golding 11

A Stopover in Marrakesh on the Way to
Copenhagen: Why We Need More than the
Clean Development Mechanism to Reduce
CO₂ Emissions in China
Patricia A. Britton 15

China's Involvement in Latin America's
Natural Resource Sector
Roxy Carter 20

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reductions. She considers the utility of action targets and action allowances in helping China move to a less carbon-intense development trajectory.

Finally, Roxy Carter takes on a controversial issue regarding China's development of resources beyond its borders by examining the country's investment in and imports of products from Latin America's natural resource sector. Carter concludes that despite the short-term economic benefits that accrue to Latin American countries, concerns remain with respect to environmental effects and these countries' ability to satisfy Chinese demand.

We hope you enjoy this informative exploration into these new developments and critical matters. We particularly are pleased to welcome the contributions from new members such as Ms. Carter and Ms. Britton and students such as Wyatt Golding. Please contact Brett Grosko at bgrosko@verizon.net, if you would like to contribute to future issues of our newsletters.

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ENVIRONMENT (PROTECTION) ACT OF 1986—UMBRELLA LEGISLATION FOR ENVIRONMENTAL PROTECTION

**K. V. Singh
Shephali Mehra Birdi**

In the post-independence era, rapid industrialization and the growth of high-polluting industries posed a great challenge to India's environment and natural resources. There was substantive decline in environmental quality due to increasing pollution, loss of green cover, damage to biological diversity, and excessive concentration of harmful chemicals and effluents in the ambient air, water bodies, and soil. Though laws existed that dealt directly or indirectly with several environmental matters, including forests, wildlife, water, and air, many of these laws dated back to the British era and were not adequate to deal with new and emerging challenges. There was a need for general yet comprehensive legislation on the environment that could address the multiple challenges of existing environmental issues and future environmental threats while balancing the development needs of the country.

The turning point in India's environmental policy and regulatory regime came with the introduction of the Environment (Protection) Act of 1986 (EPA). EPA was enacted to give effect to the decisions taken at the United Nations Conference on the Human Environment held in 1972. EPA provided a much-needed umbrella framework for environmental protection and improvement through regulation of developmental activities. EPA not only ushered in clarity and precision in the government's approach toward development from the perspective of environmental protection, but also was instrumental in identifying the environmental hazards not addressed under a regulatory framework. It also aimed at providing control mechanisms to guard against slow, insidious buildup of hazardous substances, especially new chemicals, in the environment. The idea was not to discourage industry, but to encourage "environment-friendly" development.

EPA lays down a very broad regulatory framework on all aspects of the environment including water, air, land,

and the interrelationship that exists among water, air, land, human beings, other living creatures, plants, microorganisms, and property. It seeks to centralize the powers relating to formulation of nationwide environmental planning, policymaking, and coordination of actions taken by various state governments with the central government through its Ministry of Environment and Forests (MoEF). The act enables the MoEF to lay down standards for environmental quality; emissions or discharges of environmental pollutants from various sources; procedures for handling materials; rules for locating industry; compulsory reporting of environment pollution by industry; and recovery of costs of cleanup from the polluter. EPA provides a mechanism for establishing environmental laboratories, taking samples of air, water, soil, or any other substance from an industrial establishment, analysis of such samples, and initiation of penal action against erring industries.

While laying down the broad principles for environment protection, EPA offers much-needed flexibility to the legislature as well as policymakers to devise means and measures to address emerging environmental issues and concerns. EPA has enabled the government to develop and further strengthen the regulatory regime on critical environmental hazards, to introduce innovative mechanisms for balancing environmental and developmental needs, and to delegate specific responsibilities to specific organs of the government. These have been given effect in the form of rules, notifications, and circulars. Some of the measures that have been adopted under the auspices of the umbrella framework offered by EPA include standards for discharge of environmental pollutants, land use regulation, waste management, chemicals management, environment impact assessment, and regulation of developmental activities in coastal zones.

I. Standards for Discharge of Environmental Pollutants

EPA empowers the MoEF to lay down standards for emission or discharge of environmental pollutants from various industries and operations. Standards for almost 100 different industries have already been laid down under the Environment Protection Rules of 1986 formulated under EPA. Further, the Central Pollution

Control Board (CPCB), State Pollution Control Boards (SPCB), and Pollution Control Committees (PCC) have been empowered to establish emission and effluent standards even more stringent than the ones prescribed under these rules. Needless to say, compliance with these standards is essential, and industries that fail to comply face stringent penalties and prosecution under EPA, including suspension or closure of operations.

II. Land Use Regulation

An important aspect of environment protection is to identify areas that are ecologically fragile and devise measures for regulating indiscriminate developmental activities in such areas. Under Section 3(2)(v) of EPA, the central government is empowered to identify and specify areas in which industries, operations, or processes can be prohibited or restricted. For example, in 1989 the Doon Valley in the northern Uttarakhand state was declared an “ecologically fragile area” by way of a notification, and various industrial and commercial activities, including mining, establishment of industries, grazing, and tourism in this area were either restricted or prohibited. A similar notification for prohibiting industries in Murud-Janjira, Raigadh District, Maharashtra, was issued in the same year. Thereafter, a number of such notifications followed and accorded special protection to several ecologically sensitive areas in various parts of the country, including areas situated in and around national parks, sanctuaries, coastal areas, and forests. It is interesting to note that areas having historical significance have also been given protection under EPA. For instance, the area surrounding the Taj Mahal in Agra was declared as a Taj Trapezium Zone, and a Taj Trapezium Zone Pollution (Prevention and Control) Authority was constituted, inter alia, to monitor progress of the implementation of various schemes for protection of the Taj Mahal from pollution and for taking all necessary steps to ensure compliance with specified emission standards.

III. Coastal Regulation Zone Notification

Until 1991, there was no specific law or regulation for protection and conservation of coastal habitat in India. In 1991, the MoEF issued the Coastal Regulation

Zone (CRZ) Notification under EPA for declaration of coastal stretches as CRZs and for imposing restrictions and prohibitions on the setting up and expansion of industries, operations, and processes in these areas. The coastal stretches of seas, bays, estuaries, creeks, rivers, and backwaters that are influenced by tidal action (in the landward side) up to 500 meters from the high tide line and the land between it and the low tide line have been declared CRZs.

Importantly, the CRZ Notification does not impose an all-pervasive ban on activities along the coast. It only seeks to regulate perilous and high-polluting industrial activities in ecologically fragile coastal stretches. The CRZ Notification regulates a variety of human activities, such as industrial activities, manufacture, handling, storage, or disposal of hazardous substances, fish processing units, and the landfilling of city or town waste.

CRZ is divided into four categories, depending on its geomorphology and existing features of settlement. The regulations and restrictions on industries vary from one CRZ category to the other. A National Coastal Zone Management Authority at the central level and state coastal zone management authorities in the states have been established under the CRZ Notification.

IV. Environmental Impact Assessment (EIA)

An important aspect of environment and land use planning is to identify, evaluate, and assess social and environmental impacts of any proposed development or industrial activity. In India, the concept of EIA came into existence around 1978. However, it was restricted to river valley projects. It was only in 1994 that EIA was formalized by issuance of a notification under EPA. This notification mandated obtaining environmental clearance for setting up new projects relating to specified industries or processes or for expansion or modernization of such processes or operations.

In 2006 the MoEF issued a fresh notification on EIA. The notification lists certain projects or processes, such as mining of minerals, river valley projects, thermal power plants, cement plants, airports, building and

construction projects, and special economic zones that require prior environmental clearance, both for setting up a new project and for expansion or modernization of an existing project. The notification provides for a detailed procedure for obtaining environmental clearance, which includes screening, scoping, public consultation, and appraisal. The notification also elaborates the postclearance monitoring process.

V. Waste Management

In any country, generation of waste, including industrial, hazardous, toxic, human, or household, is inevitable. The management of such waste is critical. India's waste management regime is governed by various rules framed under EPA. The government of India has enacted separate rules for hazardous waste, biomedical waste, and municipal solid waste. These rules cover an array of stakeholders, such as industries, hospitals and health-care facilities, municipal bodies, regulatory bodies, and households.

These rules are essentially based on a permit regime. For example, under the Hazardous Waste (Management, Handling, and Transboundary Movement) Rules of 2008, activities involving handling of hazardous waste, including generation, treatment, disposal, storage, import, export, recycling, and reuse require prior approval of the concerned SPCB or the PCC. Similarly, under the Bio-Medical Waste (Management and Handling) Rules of 1998, clinics, dispensaries, and health-care institutions that provide treatment to more than 1,000 patients per month require an authorization from the SPCB or the PCC for generation, collection, storage, handling, treatment, and disposal of biomedical waste. Though the aforesaid rules provide for stringent monitoring and regulation by the regulatory authorities of industrial and commercial activities generating waste streams, they lack a holistic approach toward waste management. The current waste management regime fails to provide an impetus for "self-regulation" measures. The necessary emphasis or incentive to adopt cleaner technologies and production processes by the industry is also missing. Waste disposal, recycling, and

treatment, which are still handled by the informal and unorganized sector, are increasingly becoming unmanageable and a great concern.

VI. Chemical Management

EPA empowers the central government to regulate hazardous substances. The MoEF has used the provisions of EPA for framing regulations to handle hazardous chemicals, hazardous microorganisms, genetically engineered organisms, and ozone-depleting substances, and to address issues concerning health and safety.

The Manufacture, Storage, and Import of Hazardous Chemical Rules of 1989 have been formulated to regulate usage, storage, transportation, or import of hazardous chemicals in India. The rules especially emphasize the prevention of accidents that may occur while handling hazardous chemicals, and the operators of facilities handling such chemicals are required to prepare on-site emergency plans and safety reports and to conduct safety audits. Further, such operators are also bound to disseminate information regarding major accidents or hazards likely to occur in the facility.

Similarly, the Ozone-Depleting Substances (Regulation and Control) Rules of 2000 have been framed to regulate production, consumption, sale, purchase, use, import, and export of ozone-depleting substances in India. The rules prohibit ozone-depleting substances from being imported or exported to countries that are not a signatory to the Montreal Protocol.

Conclusion

EPA is the single most important law on environment protection in India. EPA and rules and regulations issued thereunder significantly impact almost all industrial operations in India in some way. EPA and its associated rules become relevant from the stage of conception of any development project or industry in India, including its location and potential environmental

Brett Grosko

and social impact, and are pervasive through the implementation of the project and operation of the industry. EPA continues to regulate the day-to-day functioning of an industry, discharge of its effluents and emissions, use and storage of hazardous materials in its production process and generation of waste, and trade-related conduct.

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[Editor's Note: This article was adapted from an article first appearing in the Washington, D.C.-based Environmental Law Institute's Environmental Law Reporter India Update.]

One Million Trees Project— Right Tree for the Right Place at the Right Time

Join Section efforts to plant one million trees by 2014. This project calls on ABA members to contribute to the goal of planting one million trees across the United States in the next five years. In addition to planting trees, the Section also intends, through public outreach and partnering efforts, to raise the nation's awareness of the multiple benefits of trees. To participate in the One Million Trees Project, please visit any of the information pages at our partners' Web sites linked from: http://www.abanet.org/environ/projects/million_trees/home.shtml.

If attending the 39th Annual Conference on Environmental Law in Salt Lake City, please sign up to participate in the *Public Service Project: TreeUtah* on Saturday, March 20, 2010, 1:00 p.m. - 4:00 p.m.

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The emphasis on China in the news leading up to and during the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in Copenhagen, December 7–19, 2009, has tended to obscure the importance of India in the international climate change debate. In light of the role that India played at the conference, this article seeks to complement the coverage of Chinese negotiating positions by briefly highlighting three of the reasons why India was a key player in Copenhagen and will continue to play an important role in future negotiations. It then discusses how India has deployed this influence in the past and at Copenhagen.

Several factors give rise to India's emergence as a key player in Copenhagen. First, India is an emerging regional and geopolitical actor, and its views will only become more influential in the coming years. Its economy is the fourth largest in the world, growing six percent annually from 1980 to 2002 and 7.5 percent from 2002 to 2006. This makes it one of the world's best-performing economies of the period. In the fiscal year ending in March 2009, the economy grew 6.7 percent despite the effects of the global recession. To match its economic rise, India has sought to enhance its geopolitical profile by (a) detonating a nuclear device in 1998; (b) expanding its navy; (c) improving overall relations since 1991 with the United States; (d) recently suggesting an openness to reconsidering its long-standing refusal to join the Nuclear Non-Proliferation Treaty; and (e) seeking to secure a permanent seat on the U.N. Security Council. These efforts have begun to bear fruit, for example, in the July 2005 nuclear energy accord negotiated with the United States.

Second, while historically India is responsible for a little over two percent of global emissions, today India is the world's fourth largest greenhouse gas (GHG) source. The Paris-based International Energy Agency (IEA) found that India's energy-related emissions doubled from 1990 to 2007, from 0.6 to 1.3 gigatons of CO₂ (see <http://www.worldenergyoutlook.org/docs/>

weo2009/climate_change_excerpt.pdf). India's GHG emissions amounted to five percent of global energy-related emissions in 2007. By 2020, however, the IEA expects India's energy-related emissions to increase nearly sixty percent, to 2.2 gigatons. By 2030, the same emissions are expected to jump to 3.3 gigatons, an increase of sixty-seven percent from the 2020 figure. Looking at total emissions, which include nonenergy-related emissions such as those from the agriculture sector, India's own estimates for 2031 show increases of as much as three times current levels (7.3 gigatons of CO₂ equivalent) (see <http://pib.nic.in/release/release.asp?relid=52329>). Meanwhile, coal supplies thirty nine percent of India's total primary energy, including fifty-five percent of electricity production. Coal, moreover, is projected to remain the country's primary energy source, with demand growing nearly threefold by 2030. These energy scenarios—as well as India's significant economic development and leadership role among developing countries—promise to keep attention on India in the future. Notably, Indian Prime Minister Manmohan Singh was part of a select group of leaders from the United States, China, Brazil, and South Africa that negotiated the Copenhagen Accord.

Third, even if venues such as the G20 or Major Economies Forum emerge to complement or take the place of the UNFCCC for future climate negotiations, India will remain a leader within the developing nation community. India's prominent role and its self-avowed place on the “moral high ground” appear to stem from its reaction to its colonial legacy and involvement, along with other former colonies and other developing nations, in the G77 and Non-Aligned Movement. This historic animosity to the dictates of developed countries dovetails with its repeated position that developed countries are chiefly responsible for climate change and should bear the burden of addressing it while allowing developing countries to grow without such limitations on their emissions, i.e., the equity argument (see J. Lamont, *Indian PM Calls for Fairness in Climate Fight*, FIN. TIMES, Jan. 5, 2010). Developing nations' participation and agreement will be important to ensure the legitimacy of any future agreement that may emerge. While India will seek to advance its own interests in 2010, global equity concerns will likely remain a factor. India may be

hesitant to allow itself to be painted as not taking less developed nations' interests into account.

I. Pre-Copenhagen

India's attempts to address climate change domestically and internationally will take place within the context of the factors described above and in its recent climate change-related actions. India's efforts have been ongoing for several years. In the summer of 2008, for example, the Indian prime minister announced its first climate change action plan, establishing a framework for pursuing solar energy and energy efficiency, and establishing a strategic knowledge platform for climate change. The 2008 plan reinforced India's stance that developed nations created the bulk of the climate problem, and should be responsible for resolving it. Consistent with this position, in July 2009, during Secretary of State Hillary Clinton's visit to India, India's Environment Minister, Jairam Ramesh, stated, “There is simply no case for the pressure that we, who have among the lowest emissions per capita, face to actually reduce emissions” (see <http://www.washingtonpost.com/wp-dyn/content/article/2009/11/20/AR2009112004309.html>).

Then, at the July 2009 Major Economies Forum in D'Aquila, Italy, India signed on to the Declaration of the Leaders of the Major Economies Forum on Energy and Climate. While not binding, the declaration noted signatories' intention to “undertake transparent nationally appropriate mitigation actions, subject to applicable measurement, reporting, and verification, and prepare low-carbon growth plans” (see http://portal3.sre.gob.mx/groupfive/images/stories/laquila/MEF_Declarationl.pdf). The document also stated signatories' desire to undertake actions to bring about a meaningful deviation from business as usual in the midterm, supported by financing, technology, and capacity building. As to a future peak emissions year, it noted that “peaking of global and national emissions should take place as soon as possible, recognizing that the timeframe for peaking will be longer in developing countries. . . .” India and others also recognized the goal of limiting the increase in global average temperature above preindustrial levels beyond two degrees Celsius, and noted the parties' plan to “work between now and Copenhagen . . . to identify a global

goal for substantially reducing global emissions by 2050.” The declaration observed that “[p]rogress toward the global goal [would be] regularly reviewed, [given] the importance of frequent, comprehensive, and accurate inventories.”

Next, on November 9, 2009, Ramesh’s Ministry of the Environment and Forests (Environment Ministry) released and seemed to endorse a report by the former deputy director general of the Geological Survey of India, challenging the conclusions of the U.N. Intergovernmental Panel on Climate Change (IPCC) on the effects of climate change on Himalayan glaciers (see <http://timesofindia.indiatimes.com/india/No-proof-of-Himalayan-ice-melting-due-to-climate-change/articleshow/5213045.cms>). The earlier IPCC report had found that climate change has caused their melting, that they are receding faster than in any other part of the world, and are likely to disappear by 2035 if current melting rates continue. The study released by the Environment Ministry suggested that there is no conclusive evidence of such a link. (The IPCC has recently stated that some of the science on which it relied concerning the melting of Himalayan glaciers constituted “poorly substantiated estimates of rate of recession and date for the disappearance of Himalayan glaciers.” (see <http://www.ipcc.ch/pdf/presentations/himalaya-statement-20january2010.pdf>). Several weeks later, Ramesh cited studies by the Indian Council of Agricultural Research in arguing that there is no conclusive scientific study to substantiate the claim that the recent floods in India’s coastal areas, drought, and rain shortfall in crop-producing states were attributable to global warming.

Then, on December 3, 2009, Ramesh spoke before the Indian Parliament and announced a commitment to reduce India’s level of emission intensity by 20 to 25 percent compared with 2005 levels by 2020. (India’s emission intensity in 2007 was 0.5 million tons per \$1000 purchasing power gross domestic product (GDP) unit, roughly equivalent to the United States; China’s figure stands at 0.9 million.) India’s statement may have been in reaction to announcements this year by the United States and China of their intention to cut emissions (U.S.) or emission intensity (China), or some combination of these and earlier commitments by

Brazil, Mexico, South Korea, and South Africa. Whatever its genesis, the statement marked the first time that India had offered to meet any type of numeric goal. India noted the country was “prepared to do even more if a fair deal [were] reached in Copenhagen” because “[h]aving global aspirations and assuming global responsibilities are two sides of the same coin.” Explaining the timing of the announcement, Deputy Chief of the Planning Commission Montek Singh Ahluwalia stated that the commitment would help India counter the argument that it is an obstructionist and demonstrate that India had come to Copenhagen with its own plan. Several key Indian negotiators poised to leave for Copenhagen threatened to stay home in protest (see <http://timesofindia.indiatimes.com/india/Key-negotiator-pulls-out-of-Copenhagen/articleshow/5306377.cms>). They eventually relented, reportedly after being assured that India would not agree to make the goal binding. While Ahluwalia assured critics that based on past performance, the announced goal would not be difficult to reach, others complained that the commitment would entail substantial costs and would not elicit a reciprocal agreement from developed countries.

More revealing were the reasons that Ramesh gave for this announcement. For instance, he stated that the decision to reduce carbon intensity is essential for India to stake a claim to global leadership on climate change and take the moral high ground. He also emphasized that India had its own stake in reaching an accord. Ramesh started his speech with the observation that “India is the country most vulnerable to climate change” due to the country’s dependence on the monsoons, the receding of the Himalayan glaciers, the presence of ecologically sensitive areas, and the fact that climate change would exacerbate the effect of mining in the forest areas of Jharkhand, Orissa, and Chhattisgarh states (see <http://timesofindia.indiatimes.com/india/Indias-2020-target-Reduce-emission-by-20-25/articleshow/5297073.cms>).

Ramesh also said it is important to show those Indian people residing in low-lying areas vulnerable to rising sea levels and severe storms and those living nearby melting glaciers that the government is taking action to protect them from climate change. To accomplish its

emissions reduction goals, Ramesh said the government would propose statutes mandating: (a) fuel efficiency for all vehicles by December 2011; (b) an annual assessment of the increase in forest cover, (c) an energy-conserving Green Building Code, and (d) clean coal technology for India's coal-fired power plants. Ramesh has also stated that he has allocated \$200 million to increase India's forest cover from the sixty-five million hectares currently covered (twenty percent of its land mass). Separately, in December 2009, the Indian government launched, as part of its National Mission for Enhanced Energy Efficiency, a market-based mechanism to incentivize energy efficiency in energy-intensive industrial sectors, including power generation (see <http://timesofindia.indiatimes.com/india/Coming-energy-efficiency-norms-for-industry/articleshow/5320693.cms>).

These events appear to reflect a discernible divide within the government. On the one hand are reformers like Ramesh who, with the backing of Prime Minister Singh, seek to assert a positive leadership role for India (J. Elliott, *Setting the Pace on India's Climate Change*, FIN. TIMES, Dec. 9, 2009). This impulse may account for the December 3, 2009 voluntary emission intensity reduction announcement referenced above. On the other hand are those primarily fearful that the imposition of binding emission reductions will impede India's growth. This latter group tends to view the climate negotiations charily. Statements by public officials have put these diverging viewpoints on display.

II. Copenhagen Accord

These competing viewpoints informed India's position in Copenhagen, although it appears that the country largely sought to align itself with China to enhance its overall influence. Only a few of the issues addressed in the Copenhagen Accord will be mentioned here. First, with respect to legally binding emissions reductions, India's position remains that it is not historically responsible for the climate change problem and that it will not accept a commitment to reduce overall emissions. India along with other developing countries did agree to submit to the UNFCCC secretariat a national plan to reduce emissions. However, on

balance the Copenhagen Accord's text does not suggest that India has abandoned this view (see <http://unfccc.int/resource/docs/2009/cop15/eng/107.pdf>). Second, the accord reaffirms the commitment to avoid a temperature increase exceeding two degrees Celsius. But it does not contain any quantified emission reduction objectives for developing nations. Nor did the accord establish a date by which global emissions would peak. Ramesh has recognized that the peaking of emissions will have to take place at some point, but says that whichever year is fixed for peaking for developing nations will have to be later than that for developed nations.

In contrast, on the issue of international scrutiny, India's position appears to have shifted somewhat. Prior to Copenhagen, India stated that any emission reduction actions that it took on its own would not be open to international scrutiny. India noted that depending on the concessions agreed to by Western countries, and in consultation with China, Brazil, South Africa, and other G77 countries, the country would consider opening to international review those actions supported by international financial mechanisms.

The Copenhagen Accord, however, appears to establish that those actions supported by international finance, technology transfer, and capacity building will be subject to international measurement, reporting, and verification (MRV). Ramesh recently stated that the government had departed from its pre-Copenhagen position, and that the negotiating team did not limit applicable requirements to informing the UNFCCC about domestic mitigation programs (see <http://timesofindia.indiatimes.com/india/Copenhagen-accord-doesnt-affect-sovereignty-Govt/articleshow/5365643.cms>). In explaining the move, the minister argued that India had to be flexible because the BASIC nations did not want to appear to be responsible for failure of the talks. At the same time, he asserted that the provision for international consultations and analysis would not affect India's sovereignty. Ramesh pointed out that relevant guidelines had yet to be drafted, and that India could ensure through the drafting process that (a) its national sovereignty is respected; and (b) the consultative process will not become intrusive.

Conclusion

While China will remain paramount for the foreseeable future on climate change issues, there is also an urgent need to continue to engage India on the subject. Future engagement should take place with the knowledge that India faces pressure from many different directions. India seeks to reconcile its own diverse interests—avoiding constraints on its own development and use of its coal resources—while securing a global agreement to reduce emissions and ultimately protecting the ecosystems on which Indians depend. It also faces developed country demands that it take on responsibilities commensurate with its growing GHG emissions, economic strength, and

political clout. How India responds to these crosswinds will play a significant role in determining what comes after the Copenhagen Accord.

Brett Grosko is a trial attorney with the U.S. Department of Justice, Environment and Natural Resources Division. The views expressed herein are his alone, and do not necessarily reflect those of the U.S. Department of Justice or any other agency.

[Editor's Note: For more coverage of South Asian environmental law, see the IELC's May 2005 Newsletter. It is available at: [http://www.abanet.org/environ/committees/intenviron/newsletter/archive/.](http://www.abanet.org/environ/committees/intenviron/newsletter/archive/)]

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March 9, 2010

Quick Teleconference

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AMENDED WATER LAW IN CHINA HOLDS THE PROMISE OF ENHANCING ENFORCEMENT THROUGH NATIONAL STANDARDS AND PERSONAL ACCOUNTABILITY

Wyatt Golding

If you ate seafood in 2006, there was over a thirty percent chance that it was shipped from a Chinese aquaculture farm (FAO World Fisheries and Aquaculture Report (2008)). And if you were in the United States at the time, there was a five percent chance that the Food and Drug Administration (FDA) inspected a fish in that shipment, and less than one percent chance that the agency conducted a laboratory examination (Import Watch, Food & Water Watch (2009)). Chinese aquaculture regulations were very likely the only legal force acting to ensure the quality and safety of your meal, and, in 2006, even the *People's Daily*, a government-controlled newspaper, conceded that those regulations were limited and rarely enforced. However, your future meal may be safer, due to the 2008 amendments and revisions to the Law on Prevention and Control of Water Pollution (LPCWP) (see www.chinaenvironmentallaw.com/wp-content/uploads/2008/03/water-pollution-prevention-and-control-law.pdf). The revised LPCWP empowers and requires Chinese environmental agencies to more closely regulate water quality in adherence to national minimum standards. In recognition of the industry's growth and role as a pollution source, the new law also includes a specific provision for aquaculture. Through the lens of aquaculture, a rapidly growing industry that has been characterized as both a victim and perpetrator of water pollution in China, this article will discuss the content of the revised LPCWP, the context from which it arose, and its possible effects.

I. The Law on Prevention and Control of Water Pollution and How It Works

The LPCWP aspires to reform an environmental enforcement scheme plagued by ineffective and, in some cases, perceived corrupt localized implementation, difficulties that have not been limited to the politics of water and fisheries. The Chinese government has struggled to enforce regulatory

authority in a decentralized system where local governments are evaluated based on economic growth, and without regard to environmental protection. The standing committee of the 10th National People's Congress passed the LPCWP in February 2008, to be effective in June 2008. The purpose is to prevent and control water pollution while protecting the environment, maintaining safe drinking water, and encouraging sustained economic and social development. The LPCWP applies only to freshwater, which is where most Chinese aquaculture occurs.

The law attempts to overcome local conflicts of interest by implementing national pollutant standards, increasing fines, and creating the nation's first statutory discharge permit program. The shift to national regulation parallels the shift to federal control embodied in environmental legislation passed in the United States in the 1970s, most directly the Clean Water Act.

In some provisions, the LPCWP on its face innovates and is more stringent than American legislation in that it stresses personal accountability. Article 5 adds "fulfillment of water environmental protection targets" to the criteria for evaluating government officials' job performance (which was previously assessed almost solely on local gross domestic product (GDP)); Article 69 allows disciplinary sanctions against officials who knowingly fail to enforce the amendments; and Article 83 attaches personal liability of fifty percent of the preceding year's income to responsible employees of companies that commit pollution violations (D. Winalski, *Cleaner Water in China?*, 24 J. ENVTL. L. & LITIG. 181, 197 (2009)). The LPCWP addresses aquaculture in Article 50, which reads in translation, "[W]ith respect to aquaculture, the aquatic ecological environment shall be protected, breeding density shall be scientifically determined, and bait and drugs shall be utilized reasonably in order to prevent aquatic environment pollution." Food safety should be enhanced both through improved water quality and enhanced regulation of the industry. Most important, however, are more stringent enforcement provisions that should allow greater oversight and control of local officials by a stronger regulatory body.

By adding both local incentives and liability to promote the enforcement of environmental laws, the LPCWP

represents a strong statement of priority by the national government. There has long been a disparity between law developed in Beijing and law implemented on the ground, but truly effective policies of national significance have been implemented by attaching punishments and incentives for responsible local officials. To administer these incentives, the LPCWP shifts power to national agencies. For example, the law requires aquaculture to be cost-effective and healthy, and, according to the Wilson Center's China Environment Forum, attempt to achieve that goal by empowering the national Fisheries Department and strengthening civil suit provisions. The department now has greater authority to supervise and regulate the prevention and control of fisheries water pollution, as well as an express mandate to train officials and raise awareness with fisheries workers and the general public.

A dramatic shift is that the LPCWP now places the burden of proof on the polluter to show compliance instead of on the victims. In past cases brought by the Center for Legal Assistance by Pollution Victims (CLAPV), the country's only environmental civil legal organization, courts have acknowledged polluter fault but refused to award damages because of the heavy burden on the victim to show a causal link between illegal pollution and injury (see www.clapv.org, *Yuan Chun Yu v. Tianjin Hong Yuan Rug Company*, and the frog farmers' dispute with polluting companies in Zhejiang Province). Under the new law, the burden is on the polluter to show a lack of causality.

II. Source of the Amendments and Revisions

Environmental degradation, a booming economy, and international trade disputes converged in the last five years to bring water to the attention of the National People's Congress. The immediate catalyst for the legislation was the November 2005 Songhua River benzene spill, a devastating accident in which a chemical plant explosion leaked enormous amounts of diesel fuel into the Yellow River, shutting off water supplies to millions and creating an international relations embarrassment as it reached into Russian waters (Jingyun Li & Jingjing Liu, *Quest for Clean*

Water, China's Newly Amended Water Pollution Control Law, China Environment Forum (January 2009)).

Beyond the Songhua spill, China is in a water crisis of a severity unprecedented in world history. According to the China Watch Institute, seventy percent of the country's rivers and lakes are contaminated. In five of the seven major river systems, over seventy percent of the water is so contaminated as to be unsafe to touch and unfit for any human purpose (State Environmental Protection Agency (2003)). Not only is water intensely polluted, it is also scarce and overused to the extent that, according to a 2007 *New York Times* article, scientists widely expect the aquifer below northern China to be completely depleted in 30 years. Widespread land reclamation during Mao's "Take Grain as the Key Link" era reduced natural water storage and wetland filtration systems, now diminishing ecosystems' abilities to cope with increased human strain.

The economic, environmental, and international benefits and consequences of water pollution are well represented by the evolution of the Chinese fish industry. An initial disregard for water quality fueled massive growth, but environmental and health effects are quickly becoming an unsustainable burden. Public pressure, economic slowdown, and international embarrassment have fueled regulatory legislation.

In the face of water crisis, wild freshwater fisheries collapsed, and aquaculture filled the void. Since 1978, aquaculture production has grown 490 percent, and China is now the only country in the world with more seafood output from farming than wild capture (Fishing Murky Waters, Wilson Center (2009)). With less water, more pollution, fewer wild fish, greater demand, a new focus on private investment, and virtually no regulations, farmers across China tapped aquifers to turn fields into densely populated fish farms. The rewards have been huge—while average rural income is just over \$200 a year, a farmer in Fuqing converted his fields to a fish farm and made \$500,000 annually in the early nineties and was able to send his son to Cambridge (D. Barboza, *Farming Fish in Toxic Waters*, N. Y. TIMES, Dec. 15, 2007). The Fisheries Department reports that there are now 4.5 million fish farmers in China.

However, with enormous growth, Chinese aquaculture has followed the path of industrial farming. In order to increase production and lower prices, farmers have grown more fish in dirtier conditions, and battled the ensuing disease problems with antifungal and antibiotic medications. Most of those medications are illegal in food products in the European Union (EU), Japan, and the United States, and some of the most prevalent drugs, such as nitrofurans, are illegal in China. Chemicals from agriculture and industry accumulate in the fish as well. A 2006 Chinese Academy of Sciences report found DDT in seafood samples from eleven cities in the Pearl River Delta of southeastern China and concluded that the level of DDT contamination in China was second in the world only to Egypt.

In 2003, the inevitable fallout occurred when the EU placed a temporary ban on Chinese seafood imports. In 2005, Japan followed with a ban on imported Chinese eel, with devastating financial impact. China reportedly addressed these disputes by blacklisting farmers in offending areas, while covering up claims of larger regulatory failure with broad political attacks on the banning regions. In reaction to each dispute, the Chinese government banned specific farms, bans that companies simply flouted or avoided by exporting through cover corporations. Then, in the summer of 2007, after tense trade disputes swirling around lead toys, milk, and melamine-contaminated pet food led to a global decline in confidence in the Chinese brand, the Food and Drug Administration blocked the import of five major species of fish.

The Chinese government's reaction was swift. While 30,000 regulators swarmed fish farms throughout China, the director of State Administration of Quality Administration criticized the U.S. decision as a political stunt and called for an immediate repeal of the "indiscriminate" ban. But as the ban and negative publicity continued, growth in the industry slowed from nineteen percent in 2007 to four percent in 2008. While the amendments had been in development prior to the import ban, and their reach stretches far beyond aquaculture, the aquaculture provisions can be seen as a codification of the official reaction. They strengthened national-level enforcement and made a strong push to restore the reputation of an increasingly critical industry.

III. How Will the New LPCWP Affect Chinese Aquaculture?

As with all environmental laws in China, the effect of the amendments will entirely depend on the degree to which the government enforces them. If enforced, it could radically shift the regulatory focus on aquaculture from one dictated by foreign import standards to prioritizing the health of the Chinese consumer and citizen.

In order to truly enforce compliance, the courts and the national government will have to send a clear message to officials that the incentives and punishments in the law are real. Without a shift in enforcement and regulatory priorities, this seems unlikely. Previous environmental laws have proven weak due to a lack of regulatory attention and resources, which is precisely what is required to enforce compliance with the amendments and to assess penalties. For example, in 1998, in Shanghai, China's most populous and one of its wealthiest, most modern, and most international cities, pollution inspectors working full time could not manage to visit each factory within the city even once a year. When officials reported violations and assessed fees, they were able to collect only twelve percent of those fees. The Environmental Protection Bureau (EPB) for the city of then approximately 13 (now 19) million had only three attorneys and as such functionally did not prosecute violations (E. Economy, *The River Runs Black* (2004)). Furthermore, it is as of yet unclear in the LPCWP accountability provisions the extent to which enforcement of the law will dictate officials' evaluations, what degree of knowledge will be required to assess disciplinary sanctions on local officials, and what those sanctions will be.

While providing penalties and rewards to local officials has been a largely effective strategy for enforcement for priorities of clear national significance, environmental regulation will likely prove to be a more difficult challenge, in that those regulated are politically and economically powerful companies rather than individual families. Indeed, even a fifty percent pay cut may not significantly change the economic calculus for employees helping a company skirt the LPCWP, particularly if they are otherwise compensated. Many

large state-run companies have already found it financially advantageous to pollute in the face of the new national pollutant discharge permitting system, because the fines are less costly than compliance. In order to be truly effective, the national government must back the LPCWP by strengthening regulatory oversight and funding of enforcing officials.

An encouraging sign is that also in 2008, the 11th National People's Congress elevated the State Environmental Protection Administration (SEPA) to ministry level, placing the newly formed Ministry of Environmental Protection among the twenty seven major ministries and commissions of the cabinet. This is notable in that, previously, SEPA was outranked by the industry-promoting agencies it was attempting to control.

Another encouraging sign is that, rather than simply promulgating new rules, the LPCWP, through the national pollutant discharge system, accountability for enforcement, and plaintiff-friendly procedural changes, provides some tangible change. Wang Canfa, the director of CLAPV who won China's first class-action environmental lawsuit, forcing the construction of a two-million yuan water treatment plant and compensatory damages on behalf of an injured fish farmer, brought Chinese water quality and aquaculture to American attention in 2007 when he won *Time* magazine's "Heroes of the Environment" award. His hope is that one day the Chinese people will have faith in the law to redress their environmental injuries. Hopefully, the amended and revised LPCWP is a step on the way there, and the future aquaculture industry will be both well protected and regulated.

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[Editor's Note: For more coverage of Chinese environmental law, see the IELC's August 2008 Newsletter, which focused exclusively on Chinese environmental law. It is available at: <http://www.abanet.org/environ/committees/intenviron/newsletter/archive/>.]

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A STOPOVER IN MARRAKESH ON THE WAY TO COPENHAGEN: WHY WE NEED MORE THAN THE CLEAN DEVELOPMENT MECHANISM TO REDUCE CO₂ EMISSIONS IN CHINA

Patricia A. Britton

Introduction

Did December's Copenhagen Climate Change Conference fail as some suggest? Or did the brief, nonbinding Copenhagen Accord provide a new basis for negotiating a binding, practical, and effective global agreement that can include the United States and China?

The Copenhagen Accord (see <http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf>) provides that Non-Annex I Parties will submit mitigation actions consistent with Article 4.1 and 4.7 of the Kyoto Protocol and sustainable development. The mitigation action plan design is left to the developing country and the action plan need not include an emission target. Meanwhile, Annex I Parties (essentially, the developed countries) agree to provide emission reductions targets.

The accord distinguishes between Non-Annex I Parties and least developed nations and small-island developing states. The accord references a two-year framework for reporting and verification that respects national sovereignty. For the first time, China agreed to provide a mitigation action and to submit to some form of review, albeit limited and nonbinding.

I. Are Action Targets a Basis for Further Negotiation?

In 2006, Kevin Baumert and Donald Goldberg suggested the concept of "action targets" for developing countries willing to agree to a mitigation plan but concerned about constraining future growth by agreeing to predetermined emissions limitations (see K. Baumert, *Participation of Developing Countries in the International Climate Change Regime: Lessons for the Future*, 38 GEO. WASH. INT'L L. REV. 365

(2006); K. Baumert & D. Goldberg, *Action Targets: A New Approach to International Greenhouse Gas Controls*, 5 CLIMATE POL'Y 567 (2006)).

Their approach allowed a developing country to propose its mitigation plans and the percentage of reduction it would achieve during a compliance period. Under this theory, if the country adhered to its plan—e.g., solar, wind, closing inefficient plants, increasing efficiency of new plants, etc.—then emissions levels would vary with activity but would be reduced as compared with what they would have been without the mitigation plan. The action target formula suggested by the authors is $RR = AT \times E$, where:

- (i) RR = number of reductions a country must achieve during a compliance period;
- (ii) AT = percentage by which the country has agreed to reduce its emissions during that compliance period; and
- (iii) E = total country emissions during the compliance period.

If a country fails to meet its RR for the compliance period, it must purchase international emissions credits under the Kyoto Protocol (or its successor) to meet its obligations. Thus, the commitment is binding and works with the carbon price point if properly structured within the appropriate accounting system. If the country overachieves, it can sell its action targets on a basis equivalent to international emissions under the Kyoto Protocol. The mitigation plan would be subject to review and agreement with the parties to the international treaty.

China's recent climate change efforts as outlined in this paper suggest that the action target approach merits further study. Recent studies indicate that China could use good old American know-how and management skills to make some of China's ambitious projects work more effectively to achieve near-term CO₂ reductions. Offering American companies the opportunity to invest and participate in major governmental projects with an additional incentive of overflow action target credits from overachievement could speed and facilitate global CO₂ emission reduction. To maximize the incentive and economic

stimulation, the overflow action target credits should be freely tradable by U.S. companies in any international or U.S. climate change scheme, state or federal.

II. What About the Clean Development Mechanism?

The Kyoto Protocol's current mechanism for environmental investment in developing countries, the Clean Development Mechanism or CDM, does not provide a vehicle for transformational climate change investment in developing countries. The framers of the Kyoto Protocol devised the CDM as the way for developed countries to achieve greenhouse gas (GHG) reductions by transferring technology and investing in sustainable development in developing countries. In exchange, developed countries receive emission offset credits (CERs) to offset their emissions. The Kyoto framers fleshed out the detailed rules required for implementation of the CDM in Marrakesh, Morocco, in 2001 at the Seventh Conference of the Parties to the U.N. Framework Convention on Climate Change (see <http://unfccc.int/resource/docs/cop7/13a01c01.pdf> (the Marrakesh Accords)).

China is a prime beneficiary of the CDM mechanism, with 652 registered CDM projects or about thirty-five percent of the 1873 current projects (see *UNFCCC Statistics*, available at <http://cdm.unfccc.int/Statistics/Registration/NumOfRegisteredProjByHostPartiesPieChart.html>). China is also the largest GHG emitter in the world.

The Marrakesh Accords require the potential CDM project to be project specific. CDM projects must demonstrate real, measurable, and verifiable emission reductions that are additional to what would have occurred without the project. Thus a CDM project that overlaps a broad-based governmental GHG mitigation program will most certainly be disqualified, as it would not be "additional" to what the government would have achieved without the project. Therefore, China's announced efforts to close inefficient coal plants and coal mines and to upgrade its electrical grid

would not be "additional" CDM projects because these are integral parts of China's 11th Five-Year Plan.

III. China, Coal, and CO₂

China as a developing country is unique. China is a world economic power and our country's chief bondholder. China has lifted 400 million of its people out of poverty, yet 135 million Chinese people are still living on less than \$1 a day (see *Country Partnership Strategy Progress Report for the People's Republic of China for the Period 2006–2010*, available at <http://siteresources.worldbank.org/CHINAEXTN/Resources/318949-1121421890573/CPSPR.pdf> (World Bank Report)). At the end of 2008, ten percent of the world's poor lived in China, with 30 million of its citizens having barely enough to eat or wear on a daily basis (see World Bank Report at 5).

Since the Kyoto Protocol was signed in 1997, China's annual coal output has increased by 1.1 billion tons. This has led to an increase of approximately 2.2 billion tons of additional annual GHG emissions (see *Cleaner Coal in China* at 18 (OECD/EIA, IEA France 2009) (the EIA Coal Report)). By the end of 2008, coal represented 68.7 percent of China's primary energy consumption (see *China's Policies and Actions for Addressing Climate Change—the Progress Report 2009*, available at <http://www.ccchina.gov.cn/WebSite/CCChina/UpFile/File571.pdf> (the 2009 Report)). China relies on its domestically sourced coal for over 80 percent of its electricity generation. According to the U.S. Energy Information Agency, 5382 million metric tons of CO₂ were emitted by China from the consumption of coal in 2008 (see <http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=1&pid=1&aid=8>). China's total emissions for the year 2008 were 6534 million metric tons (see <http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8>). Thus, coal use represented roughly 82 percent of China's CO₂ emissions for 2008. For 2010, China predicts that 31 percent of that coal demand and those emissions will relate to steel, construction materials, and chemicals as

many of China's manufacturing facilities still rely on coal as a primary fuel.

IV. The Impact of Climate Change on China

In 2008, China analyzed the impacts of climate change on its land and people (*China's Policies and Actions for Addressing Climate Change*, available at http://www.gov.cn/english/2008-10/29/content_1134544.htm (2008 Report)). The 2008 Report documents the increased frequency and intensity of extreme climate phenomena in the country, including high temperatures, droughts in northern China, heavy precipitation in southern China, and a rise in sea surface temperatures and sea level. The 2008 Report also cites (i) damage to agriculture, livestock breeding, and water ecosystems, and (ii) rising incidents of plant and animal diseases and insect pests. The 2008 Report predicts "far-reaching impacts" on its society resulting in "huge losses to the national economy" (see 2008 Report at Part II, 1). Despite these impacts, China will not agree to binding limits due to the difficulty of changing its "coal-dominated energy mix" in the near term (see 2008 Report at Part III, 2).

V. China's Plan to Reduce GHG

China included a bold, measurable GHG target in its 11th Five-Year Plan covering the years 2005 to 2010 (see http://www.gov.cn/english/special/115y_index.htm (China Plan)). China intended to decrease the intensity of its energy use per unit of GDP by twenty percent over the five-year period in addition to reducing the discharge of major pollutants by ten percent.

The China Plan also outlined clear targets for moving to a more service-oriented society, improving rural infrastructure, increasing the wealth of farmers, shifting toward greater urbanization, promoting high tech industries, protecting and preserving water resources, augmenting gross domestic product (GDP), becoming a recycling society, and increasing the capacity for internal innovation and assimilation of foreign technology.

VI. Turning the GHG Plan into Action

The China Plan contained specific targets, sub plans, and action items. On May 23, 2006, the World Bank and the People's Republic of China entered into the Country Partnership Strategy for the People's Republic of China. The World Bank Report set forth a strategy based on five "pillars." Two of the pillars directly supported the nation's climate change and environmental targets. The World Bank Report highlighted China's relative inefficiency in energy use in the year 2006 as compared with the OECD countries in industrial processes and residential heating and cooling. The partnership strategy outlined China's critical paths to reducing energy intensity.

The World Bank Report also addressed China's barriers to success, including government corruption, lack of a consistent process, the need for regulatory mechanisms, and the need for reform of the financial sector. The report identified resource management as a more critical need than technology or resource development. Finally, the report identified the importance of coal as a primary energy source to China in the near term even with aggressive targets for renewable and alternative energy sources (see World Bank Report at 24).

The plan called for more competitive electrical power markets, commercial management of energy supply companies, and strengthening of these companies through divesting non-core assets and reduction of monopolistic practices. China initiated industry-specific plans to achieve its main targets, including plans for the coal industry, the electric industry, and the emerging methane industry. The coal industry plan envisioned creating five to seven large state-of-the-art mines with the capacity to produce 100 million tons of coal per year. Existing medium-sized mines would be upgraded to exhibit best practices, and small inefficient mines would be phased out. The plan called for efficient mines to produce seventy-six percent of the country's coal by the year 2010.

The methane plan called for China to capture the methane in its surface and deep coal seams and to turn it into a useable gas. The methane project planned to

deliver a specific volume by the year 2010, half from surface drainage and half from underground seams. The report addresses targets, transportation, resource development, ownership issues, mine conflict issues, timing of wells and demonstration projects, potential legislative issues, local province issues, pricing and tax issues, and the need to work with local universities for technical and research assistance in integrating local and foreign technology and innovation.

China's plan for coal-fired power plants included decommissioning inefficient plants, building new state-of-the-art plants, and upgrading plants with sufficient capability to become highly efficient. China started decommissioning inefficient power plants in 2006 and appears to be on pace with its plan through 2009. More closings are set for 2010 and 2011 (see <http://www.cleantech.com/news/4126/china-close-31gw-coal-power-plants>).

China worked with the World Bank to improve the processes surrounding the closure of plants in the provinces and to improve priority dispatch of efficient power into the country's grid. In May of 2009, the World Bank and the Ministry of Finance of China announced approval of funding in an amount of \$108.96 million in connection with the Thermal Power Efficiency Project. The project has the primary goals of reducing coal consumption and GHG emission per unit of electricity production in Shanxi Province, Shandong Province, and Guangdong Province (see <http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=64290415&theSitePK=40941&menuPK=228424&Projectid=P098654>).

VII. Results—the China Report Card

The Netherlands Environmental Energy Agency recently analyzed China's GHG emissions based on British Petroleum data (Netherlands Report). The data showed that China's emissions had increased six percent in 2008, its lowest increase since 2001. Despite this improvement in pace, China is not meeting its energy efficiency goal. In November 2008, the Chinese government and the World Bank issued the Country Partnership Strategy Progress Report for the People's Republic of China for the Period 2006–2010 (Progress Report). The Progress Report outlined

China's continuing battles with local corruption and inconsistent process. It also highlighted the need for improved resource management (see Progress Report at 23). The Progress Report distinguished between China's superior skills at building a state-of-the-art coal-fired plant versus its relative inexperience at upgrading and managing older plants more efficiently (see Progress Report at 72).

China's grid problems illustrate the issue. In 2008, thirty percent of China's new wind-power capacity could not be connected to China's existing grid due to technical problems. As a result, more coal burns while renewable power sits idle (see Wall Street Journal, Business, <http://online.wsj.com/article/SB125409730711245037.html?mg=com-wsj> (Sept. 28, 2009)). In December 2008, the World Bank concluded that China continued to lag behind its energy efficiency targets notwithstanding construction of state-of-the-art power plants and closure of inefficient plants. The unexpected jump in the relatively inefficient manufacturing sector contributed to the problem and negated many of the energy improvements that China had achieved through mine and plant closures.

VIII. Can Developed Countries Help?

In May 2009, the IEA Coal Report represented the culmination of joint efforts between China's coal experts and an international team on how to move China's use to the level of international best practices. The IEA Coal Report recommended the following efforts (among others) to remove barriers to China's energy efficiency goals:

- Market-based, energy, and resource pricing to balance supply and demand;
- Use of international and national partnerships, supported by governments, industry, and academia, to create new technologies;
- Quick adoption of well-proven technologies, management practices, and policies for immediate and sustainable improvements from mine to end user;
- Use of market-based mechanisms to create incentives for clean coal technologies; and,

- Establishment and use of common technical standards for coal-fired plants to allow the wider deployment of more affordable clean coal technologies.

The IEA Report recommends the transfer of know-how and procedures in areas like mine permitting, reclamation, and environmental control and safety standards with the adoption of the “polluter pays principle.” The IEA Report suggests that know-how and established policies and procedures could help China bring closure to small and inefficient power plants and coal mines. These policies and procedures would include human resources and social welfare assistance during market restructuring and plant closure.

IX. Action Targets and China

China has made significant progress in closing coal-fired plants and coal mines and constructing significant new projects. It is bending its emissions curve and reducing CO₂ emissions on an intensity basis. China’s efforts to reduce emissions on a near-term basis are clear. Yet the assistance it requires cannot be addressed by a CDM project. Developed-country assistance to China under previously announced mitigation programs will not qualify as “additional” under the CDM requirements. Nor would the type of assistance required be measurable on a project-specific basis. Programs such as consultation on a grid dispatch management system, assistance in designing a coal regulatory program, design of human resource programs for reducing a workforce during plant closure do not constitute the type of measurable and actionable project envisioned in the CDM process. Yet, properly done, this assistance could reap near-term and significant benefits in CO₂ reduction to China as it pursues its plans.

A version of the previously described action targets could better address this need. The concept merits further thought. The negotiating parties to the UNFCCC and China would agree in good faith to China’s Copenhagen Accord plan and the action target or action target rate to be applied to the plan for defined compliance periods. The resulting reductions achieved during each year of the plan could be

expressed as emissions allowances (action target allowances). China could agree to incentivize developing-country participants by offering action target allowances if a company exceeded the country’s target within a defined work area—grid upgrade, plant closure, etc. Obviously the program design would take great thought and superb accountants.

Baumert and Goldberg suggested that the developing country would have to purchase allowances if it failed to meet its target. Another approach would be reducing allowances in a following period—lagging the allowances. The important point is that the action target allowances would be limited in number by the formula over a period of time to preserve the carbon price point while preserving flexibility to the developing country. The action target allowances could be used to close a mine or plant, to capture methane, or to upgrade and dispatch electricity. The concept would be to incentivize and partner the required know-how, process, and mechanisms, and to provide training.

Action target allowances could also work in the poorest regions of Africa where there are few CO₂ emissions to mitigate. In this case, action target allowances could act as building currency to develop low carbon energy projects under a country’s sustainable development plan.

Action target allowances should be bankable. They should be permanent. Once delivered, the action target allowances should act like hard currency. They should live and move like bearer bonds. The number of action target allowances should decrease over time as the country bends its emissions curve. This proposal is notional and meant to stimulate further discussion toward a solution that reduces CO₂ quickly and moves toward a real market in carbon pricing.

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BACK ISSUES

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CHINA'S INVOLVEMENT IN LATIN AMERICA'S NATURAL RESOURCE SECTOR

Roxy Carter

I was riding the Metrobus in San Juan, Puerto Rico, when I first heard several Chinese schoolgirls speaking fluent Spanish. I remember thinking to myself it was such an anomaly—Far East meets Far West. As my travels took me down the Central American isthmus, I saw that the owners of surf hostels in Costa Rica were Chinese. I learned to only buy groceries from the *Chinos* in Panama City, and I met teenagers in Bogotá who had more interest in studying Mandarin than in learning English. I began to realize that, although China and Latin America are an ocean apart, there now exists a direct trans-Pacific connection between the country and continent that bypasses the previously assumed center of world trade in North America. The backdrop of Sino-Latin American trade is the politically dramatic portion of the Sino-U.S.-Latin American triangle, with a country or region in each corner aiming to maintain, achieve, or avoid political dominance. This article aims to highlight the commercial activities in the natural resource sector occurring along the line between China and Latin America and examines some of the economic and environmental issues raised by the increase in these activities.

I. History of Sino-Latin American Trade in the Natural Resources Sector

According to Jiang Shixue of the Chinese Academy of Social Sciences, the roots of Chinese involvement with the natural resources sector can be traced back to the 1570s, when China would pay for Mexican and Peruvian silver with yarns, silk, and porcelain. But the Latin American region would be “rediscovered” at the start of the 21st century (Roett and Paz, *China's Expansion into the Western Hemisphere* (2008)). In the last decades of the 20th century, there was a modest amount of Chinese buying in Latin America, mostly of Cuban sugar and Brazilian cocoa beans, steel, and paper pulp. In 1985, the Chinese government paid a goodwill visit to Colombia, Venezuela, Brazil, and Argentina, but it was not until

2001 that Chinese investment in the sector really took off. In November 2004, Chinese President Hu Jintao made a groundbreaking four-stop tour throughout Latin America while attending the APEC summit in Chile, signing agreements such as a deal requiring Venezuela to supply China with 120,000 barrels/day of oil. President Hu also announced a \$20 billion investment for gas and oil exploration.

During the trip, President Hu indicated that he expected bilateral trade to reach \$100 billion within ten years. This ambitious goal was reached earlier than anticipated, as bilateral trade between China and Latin America ran over \$140 billion in 2009 (Castaneda 2009). China's November 2008 white paper on the region acknowledges Latin America's “abundant natural resources” and potential for growth and development; thus it can be safely assumed that—at least from the Chinese perspective—a strong emphasis exists on the importation of primary goods from the Latin American region.

II. A Friend in Need Is a Friend Indeed

Aside from China's desire to isolate Taiwan and Latin America's desire for alternatives outside the United States, the roots of the Sino-Latin American relationship lie in the natural resource sector. Whether it be a need for energy to fuel China's newfound consumption and secure its political and internal stability, or soy to feed its people, none of China's objectives can be achieved without a secured source of primary goods to supplement its own dwindling supply. At the other end of the scale, in Latin America, one finds a region desperate for growth and increased independence outside Uncle Sam's shadow. Thus, Latin America also appears eager to leverage this potentially large export opportunity to its benefit.

A. The Chinese Angle

In the Far East corner, with a population of over 1.3 billion, sits China, seemingly at the pinnacle of its unprecedented growth. It is no secret that China has been on a worldwide search for energy and materials to support this growth and sustain its population as its own supplies begin to dwindle. It should be noted that China has reached out to other regions—especially

those more geographically accessible, such as Southeast Asia and Africa—to assist in meeting their ever-rising demand for energy and other primary goods before focusing on Latin America.

As *Foreign Affairs* authors David Zweig and Bi Jianhai point out, China is now the “workshop of the world,” and consequentially has turned into the world’s second largest importer. As a result, its consumption of metal—namely copper, iron, nickel, and aluminum—doubled from 1990 to 2000 (D. Zweig & B. Jianhai, *China’s Global Hunt for Energy*, FOREIGN AFFAIRS (2005)). In 2007, China consumed “31 percent of the world’s coal, 30 percent of its iron, [and] 27 percent of its rolled steel,” while only accounting for 7 percent of the world’s gross domestic product (GNP) (Ellis 2009). Because China depends on its export of cheap manufactured goods for its economical growth, a sufficient supply of the raw materials to fuel the manufacturing industry is imperative.

According to Ellis, industrial growth is also affecting agricultural production because farmers are leaving their rural lifestyle behind to find better jobs in the city. Meanwhile, city growth encroaches upon what little cultivation-suitable land there is, and high industrial use of water contaminates the supply needed for agricultural irrigation. To aggravate this decline in agricultural production, China’s population continues to grow—along with its demand for food. Thus to sustain the exponential population growth and compensate for the decline of domestic agricultural production, China’s importation of agricultural products has become crucial. However, despite this pressing need, China maintains strict phytosanitary requirements, which impede many of Latin America’s potential agricultural exports from entering the country absent a bilateral agreement to the contrary.

B. The Latin American Angle

As a region with a relatively low GDP (roughly \$4.2 trillion as compared with the United States’ \$14.4 trillion), Latin America is constantly striving to attain the comfort and luxury that seems almost taken for granted in the United States (CIA World Factbook 2008 est.). Because China is growing into a major world consumer, it naturally follows that the Latin American

region would aim to find economic opportunity in exporting to a nation with such high demands. The opportunity China offers Latin America, unlike that offered by their North American neighbor, is not just increased consumption and export opportunity—but opportunities without the strings commonly attached by the United States in terms of strategic, political, national security, democratic and economic leverage. As author June Teufel Dreyer points out: “Unlike Washington, Beijing does not lecture the states of the region on issues such as human rights, fiscal prudence, and drug trafficking” (see *From China with Love: P.R.C. Overtures in Latin America* (Brown J. of W. Affairs (2006))). However, it should be noted that China has been known to extend exemplary treatment and benefits to states willing to withdraw their diplomatic recognition of Taiwan. Ellis provides the example of Costa Rica, which was promised an estimated \$220 million in potential projects/donations preceding its recognition of the People’s Republic of China (*China in Latin America* (2009)). Without entering into a separate debate regarding the pros and cons of Beijing’s abstaining from a role model position, or its political tactics aimed at isolating Taiwan, increasing trade with China presents to Latin America an enticing opportunity for increased autonomy.

The extent of economic growth is limited by the so-called commodity lottery, whereby countries of Latin America that are naturally blessed with abundant natural resources are said to be “winners,” and those that are largely dependent on industrial manufacturing—and consequently compete with China’s low-cost manufactured goods—are said to be the “losers.” For example, due to China’s devastatingly low wages, Mexico lost 200,000 manufacturing jobs as factories relocated to China within the first two years that China joined the World Trade Organization (Dreyer 2006). On the other hand, the “winners” are not yet in the clear, as some analysts forewarn of the “natural resources curse,” suggesting that by exporting primary goods to China, Latin America may unknowingly stunt their own potential for growth and stumble into neocolonialism. These authors “stress that Latin America must avoid falling into the trap of being a supplier of commodities for the P.R.C.’s value-added manufacturing enterprises, and thus, in their view,

assuming the posture of a Chinese colony” (Id.). All theories aside, the fact remains that China is in need of natural resources, of which Latin America happens to have a current abundance, and Latin America stands to gain from the exchange through export revenues and related Chinese investment projects.

C. An Increasing Trade

The rationale behind China’s interest in Latin American countries ranges from securing petroleum and natural gas to sunflower oil and fish meal, and each subregion within Latin America comes with its unique portfolio of natural resources. Highlighted below are the recent developments of Chinese trade within the natural resource sector in Latin America.

1. Mexico, Central America, and Caribbean Segment

Mexico and the Central American isthmus are perhaps not as well endowed with natural resources as other areas of Latin America, leaving China to focus their efforts in these countries on technology and production partnerships, as well as niche products aimed for the Chinese middle class. Examples include “luxury coffee” from Costa Rica (Ellis 2009). Despite speculations that Chinese interest in the Caribbean islands may be largely related to tax evasion, money laundering, and offshore banking, there are a handful of islands in the Caribbean basin that are important to China because of their natural resources, such as Cuba and Jamaica (Castanada 2009).

Cuba has had a long-standing relationship with China dating back to Soviet retreat from the island. Cuba likewise has a history of providing sugar to China, supplying a third of China’s sugar imports in 2004 (Ellis 2009). Ellis also points out that, with 800 million tons of proven reserves, Cuba contains the largest source of nickel in the world. Although China purchased 37,500 tons of nickel from Cuba in 2007, Chinese interests also extend to production as a tactic of supply security; Cuba and China signed an agreement for construction of a small refinery in November 2008. During that month, President Hu also signed an agreement allowing Chinese companies to explore for oil in Cuba’s Exclusive Economic Zone (Ellis 2009). These and other Chinese investments into the Cuban oil sector,

which according to Ellis had only a fifty percent consumption rate in 2006, are designed to increase output and are a clever attempt by China to secure its interest in such future development.

Jamaica lies due south of Cuba, and like its northern neighbor, is becoming a significant island for China in the Caribbean. Outside of China’s interest in swaying Jamaica to politically isolate Taiwan, Jamaica also is a significant source of bauxite, which is used to make aluminum. According to Ellis, Chinese interest in securing supply sources of bauxite is the driving force behind their investments in Jamaica, such as their 2005 joint venture to build an aluminum bauxite extraction and processing facility.

2. Andean Region Segment

Venezuela, with oil reserves second only to Saudi Arabia, is an obvious interest for energy-hungry China. While Venezuela is eager to partner with China, its political and economical structures’ high level of instability at times interferes with its ability to take advantage of Sino-Venezuelan partnerships. Nevertheless, Venezuelan oil exports to China rose from virtually zero in 2004 to a daily 80,000 barrels of crude oil and 220,000 barrels of fuel oil and other products by May 2008 (Ellis 2009). Although this growth is impressive, somewhat troubling for China are the implications on the horizon stemming from renegotiation of contracts concerning the Orinoco region. Similarly worrying is the legal structure dating to May 2007 requiring extractors of Orinoco oil—including the Chinese—to sell their oil to the Venezuelan government, which then may decide to resell it. Other roadblocks to China’s oil security in Venezuela are the lack of Venezuelan funding for projects, and a system disfavoring foreign investment. While the revolving credit scheme between China and Venezuela, known as the Heavy Investment Fund, remedies some problems, it does not provide a solution when Venezuela is unable to produce the amount of oil promised to China and is faced with a decision to break contracts with others such as the United States in order to honor its commitment to China (Ellis 2009). Among other Venezuelan exports to China are metals, which accounted for nineteen percent of total Venezuelan exports in 2006.

Similar to Venezuela, Ecuador—despite being the largest recipient of Chinese capital due to the \$1.42 billion purchase of Ecuadorian assets of the Canadian company EnCana Corporation—lacks the political stability to be a secure energy source for China, as demonstrated by its 2008 attempt to increase state control of oil companies and “tax ‘extraordinary’ earnings at rates up to 99 percent” (Ellis 2009). Ecuador’s instability causes most, if not all, Sino-Ecuadorian planned joint ventures to dissipate into mere hopes and speculations. Likewise, Bolivia’s instability—in the form of nationalization of hydrocarbons—significantly impedes Chinese attempts to liquefy and export Bolivian natural gas.

China’s involvement in the Colombian natural resource sector pales in comparison to that in surrounding neighbors. While Colombia is well known for its coffee, meat, and roses, the country’s largest export to China is metals. Ellis reports that China acquired a stake in the Colombian oil firm Omimex through a joint venture with India, but that China is moving cautiously within the country.

Peru has the best of all worlds with an ideal location and natural resources representative of those found in neighboring countries. Currently, China has a forty-five percent stake in the Argentinean company PlusPetrol Norte, which controls an estimated sixty-five percent of Peruvian oil output, and was awarded licenses to explore in the south for natural gas (Ellis 2009). Ellis notes that the 1993 purchase by Shougang, China’s fourth largest steel company, of Hierro Peru—with the largest production of iron in Peru—led to a few governmental and community disputes due to alleged environmental violations. The purchase also led to a failure to fulfill investment promises on China’s part. Despite these difficulties, China has continued to move forward in the country’s natural resources sector and within the last three years has put billions of dollars into Peru’s copper industry.

3. Southern Cone Segment

Sharing its northern border with Peru, Chile has a similar export profile to its neighbor. According to Ellis, Peru and Chile together constitute eighty percent of China’s import of fish meal. After 2005 allegations of overfishing, Chinese boats have been banned from

Chilean ports, and its companies have been blocked from acquiring fleets and facilities in Chile (Ellis 2009). Fortunately for China, the country appears to have sufficient fish to supply its needs domestically. Like Peru, Chile is also copper rich and is a global source of copper. By 2006, China purchased twelve percent of the sales by volume of Chilean copper. A year and a month after signing a February 2006 agreement to purchase copper from Chile at a fixed price, China attempted to purchase interest in a new copper mine, but the purchase was protested by the Chilean national copper company and, by 2008, China had abandoned this option (Ellis 2009).

Brazil, known for supplying forty-five percent of China’s soy import, exported eleven million tons of soybeans to China in 2006. Although the Chinese have reportedly encouraged investors in 2004 to buy land in Brazil to grow soy, only minor purchases have been made thus far. Brazil is also the world’s largest iron exporter, and is the third largest exporter to China, behind India and Australia. According to Ellis, Chinese investment in Brazilian steel is following the example of copper in Chile and moving from purchaser to partner in joint production. Apart from soy and iron, Brazil also exports oil to China. Brazilian petroleum exports to China were valued at \$791 million in 2007. In December 2008, China offered to extend a \$10 million loan to support the Brazilian petroleum company Petrobras’ development of new reserves.

Further south along the Atlantic Coast, Argentina is not considered an exporter of petroleum and has an underdeveloped mining industry. Known more for its agricultural value, Argentina mainly exports soy and sunflower oil. Argentina also exports a limited quantity of meat to China. Reflecting the phytosanitary standards mentioned above, the meat industry has been affected by the fact that only five out of twenty-two inspected slaughterhouses met Chinese export standards (Ellis 2009).

III. Supporting Legs of Investment: Infrastructure

Because the main hindrance to Sino-Latin American trade is geography, it follows that, going forward, promoting the development of the trans-Pacific trade

link discussed above will require infrastructure improvements. Thus, increased growth of the Sino-Latin American trade regime depends not only on Latin American countries' willingness and ability to improve existing commercial infrastructure, but also largely on China's investments to encourage and support infrastructure improvements. According to Dreyer, China's infrastructure investments are aimed at facilitating the exploitation of natural resources, and Atlantic South American countries have much to gain. Beneficial projects currently include construction of the road linking São Paulo, Brazil, to the Pacific port of Lima.

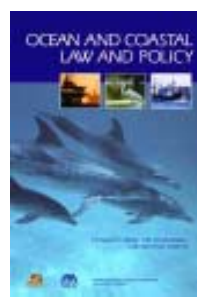
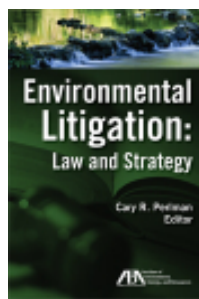
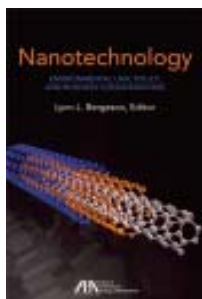
Concluding Thoughts

The Sino-Latin American relationship is an intriguing one, and its development raises many issues. Most noteworthy are the concerns arising from countries' uncertainties in their ability to satisfy China's growing natural resource demand while honoring previous commitments to other countries and providing for their own domestic needs. This projected dilemma highlights the finite nature of natural resources, particularly petroleum, and illustrates the need for conservation measures at the international level. While the Chinese government promotes domestic conservation in an attempt to secure its energy source, its policy seems to lack an environmental focus. This leads one to wonder what mechanisms have been put in place—if any—to prevent excessive exploitation and ensure the sustainability of these resources.

Another issue raised by Chinese involvement and investment in Latin America is the environmental impact of these actions, namely exploration for and extraction of resources, as well as development and construction of commercial transport infrastructure. China has a reputation, whether deserved or not, for favoring economic development at the expense of environmental protection and health and safety standards. This position appears contrary to current trends toward stronger regulations and compliance in other regions of the world; as one Canadian publication pointed out, the undermining of environmental protection policy would be at odds with Canada's interest. Some environmental infractions have been publicized—such as the incident with Peruvian mines. However, it will be interesting to see if significant violations arise in the future and how countries in the Latin American region will respond.

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[Editor's Note: For more coverage of Latin American environmental law, see the IELC's December 2009 Newsletter, which focused exclusively on Latin American environmental law. It is available at: <http://www.abanet.org/environ/committees/intenviron/newsletter/archive/>.]



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