eco américas

A monthly report on development and the environment in Latin America

Carbon-tax bill gains in Chile, to business's dismay

Santiago, Chile

A plan by Chile's new center-left Michelle Bachelet government to levy the first carbon tax in South America is making its way through the nation's Congress but, in the process, prompting widespread criticism from the business sector.

The Bachelet government, which began its four-year term in March, introduced sweeping tax-reform measures that included several green levies as a way to raise government revenue, curb pollution and shift more of the tax burden to businesses.

"This reform is an advance toward establishing an environmental equity agenda," says Marcelo Mena, Chile's vice-minister of the environment. "As well, it sends signals about what kind of electric [power generation] projects we want, recognizing the value and damage caused by contamination in the quality of life of Chileans. If we do not have green taxes we will be subsidizing pollution."

This month, Chile's Senate approved the tax-reform measures, making slight adjustments to levies on diesel fuel. It is expected the lower house of Congress will endorse the package as well, since the Bachelet administration has a greater base of political support in that body.

But power companies, which stand to be the most affected by the US$5-per-ton carbon tax, are warning of rising prices for consumers. Others in the business community, meanwhile,

continued on page 9 ▸

Silva emerges as contender for president of Brazil

Rio de Janeiro, Brazil

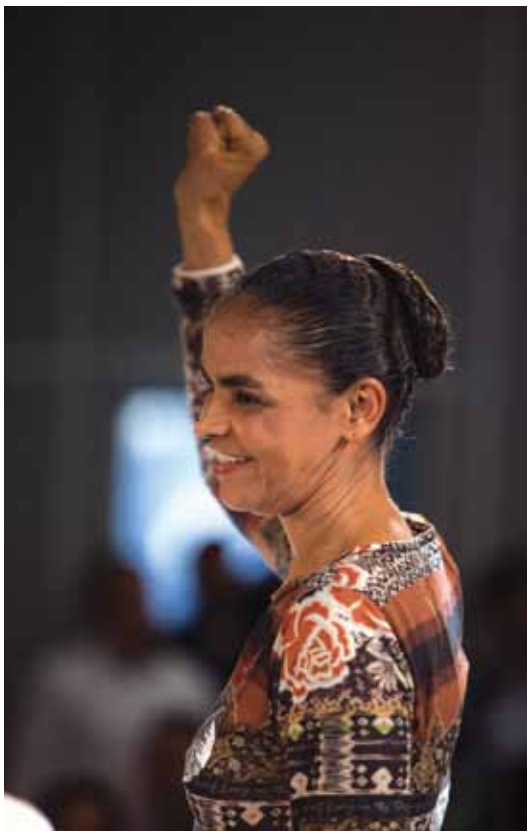
From one day to the next, Marina Silva, arguably Brazil's most respected environmental advocate, finds herself with a serious chance to become her country's next president.

The opportunity arises through tragedy—the death in a plane crash Aug. 13 of Eduardo Campos, until then the presidential candidate of the Brazilian Socialist Party (PSB). Silva, who ran as a presidential candidate for the Green Party in 2010, was Campos's running mate this time around. But on Aug. 20, a week after Campos and six others died in the crash of his campaign jet, the PSB officially made the 56-year-old Silva its presidential nominee.

Silva, who grew up poor as the daughter of rubber tappers, became a colleague of the late Brazilian rainforest activist Chico Mendes in the 1980s, then rose to represent her western-Amazon state of Acre in the Brazilian Senate. Brazil's environment minister from January 2003 to May 2008 under then-President Luiz Inácio Lula da Silva, she has been viewed as the most important proponent of the initiatives credited with slowing Brazil's deforestation rate after 2004.

In her run as the Green Party's presidential candidate in 2010, Silva attracted a better-than-expected 19% of the vote even though her showing wasn't strong enough to get her into

continued on page 10 ▸



Marina Silva

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Inside

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Around the Region

Acid spill from Mexican mine poses major enforcement test

In a major test of Mexican environmental policing, the federal government says one of the country's largest companies could face tens or even hundreds of millions of dollars in cleanup costs following a huge acid spill at one of its copper mines.

Environment Minister Juan José Guerra Abud told reporters Aug. 26 that the spill of 40,000 cubic meters (10.6 million gallons) of copper sulfate acid solution at the giant Buenavista del Cobre mine was the worst environmental disaster in the modern history of Mexican mining. "[Our] priority is to impose the maximum fines that we can," Guerra Abud said of the Aug. 6 spill at the mine, which is owned by Grupo México.

Although many of Mexico's environmental laws are very lax, he said, a 2013 environmental-responsibility law that forces polluters to pay for remediation gives the government a new enforcement tool.

Guillermo Haro Bélchez, head of the Federal Prosecutor's Office for Environmental Protection (Profepa), said the government was preparing a lawsuit under the new law. He said the remediation cost, judging by similar spills in other countries, could amount to tens of millions to hundreds of millions of dollars. In addition, the government will seek a US$3 million fine.

Profepa also has filed a criminal complaint with the attorney general's office, Haro said. And inspectors are combing through the mine's nine environmental-impact approvals to determine any additional violations.

The spill comes at a delicate time for the government. Some analysts have questioned the readiness of environmental authorities to police an expected influx of oil and gas companies as the country opens up its energy industry to outside investment for the first time since the 1930s.

The accident at the mine near the border with Arizona occurred when the copper sulfate acid solution spilled from a holding pond into a stream and then was carried into the Sonora River.

Grupo México did not notify authorities until two days later, the government says. However, Juan Rebolledo Gout, the company's vice president for international relations, said in a radio interview that the company phoned authorities the same day.

Grupo México has attributed the spill to abnormal rainfall in the desert region, but Guerra Abud called that assertion "absolutely false" and told reporters that inspections showed a defect in a pipe leading out of the pond.

Some 270 kilometers (168 miles) of the Sonora River and its tributaries were affected, and officials prohibited using water from the river or nearby wells, affecting some 24,000 people. Repeated river- and well-water testing detected contaminants at levels above those allowed by Mexican law, said David Korenfeld, Director General of the National Water Commission (Conagua).

Grupo México had suggested the levels were low enough to lift the ban on water use by Aug. 22, but Korenfeld said the ban would continue. Conagua has filed its own administrative complaint, asking that Grupo México be ordered to cover the cost of restoring water quality.

The company has limited its comments to two press releases which have sought to downplay the effects of the spill. "We reject the punitive legal actions announced by [Profepa], given the unforeseen nature of the incident and the prompt and complete response by the Company," Grupo México said Aug. 20.

Follow-up: Juan Rebolledo Gout, Vice President, International Relations, Grupo México, Mexico City, Mexico, +(52 55) 1103 5000 ext. 35346; Diana Aspiros Heras, Director of Information, Environment and Natural Resources Secretariat (Semarnat), Mexico City, +(52 55) 5628-0600, ext. 10790, diana.aspiros@semarnat.gob.mx; Guillermo Haro Bélchez, Federal Prosecutor for Environmental Protection (Profepa), Mexico City, +(52 555) 5449-6301, gharoprocurador@profepa.gob.mx; David Korenfeld Federman, Director General, National Water Commission (Conagua), Mexico City, +(52 55) 5550-6302, david.korenfeld@conagua.gob.mx. Mexican government presentation on the spill: www.semarnat.gob.mx/sites/default/files/documentos/presentacion_conferencia_derrame.pdf.

Correction:

The Q&A in last month's print edition of EcoAméricas ("Ecotourism pioneer relates his experience in Costa Rica") was accompanied by the wrong photo. The correct photo has been placed in the July issue's online and PDF versions.

Species of large Brazilian fish now nearing extinction

A study published this month indicates that a large, commercially important fish in the Amazon Basin has become extinct or severely depleted in the vast majority of communities evaluated.

The study, published in the scientific journal Aquatic Conservation: Freshwater and Marine Ecosystems, is the first ever to quantify overfishing of arapaima, which can reach lengths of over

continued on page 11 ▸

Appeal of Chevron RICO ruling draws support

New York, New York

Last October, Chevron sued lawyer Steven Donziger under the Racketeer Influenced and Corrupt Organizations Act (RICO), accusing him of conspiring to procure a US$9.5 billion judgment against the company in an Ecuadorian court in connection with widespread oil contamination of the rainforest.

U.S. District Court Judge Lewis Kaplan ruled in favor of Chevron, finding Donziger, representing the Ecuadorian plaintiffs, had engaged in bribery, fraud and witness tampering. Kaplan also imposed requirements that could effectively prevent the lawyer and his rainforest-dwelling clients from collecting from Chevron anywhere in the world.

Donziger and his Ecuadorian clients are now challenging the decision before the U.S. Court of Appeals for the Second Circuit. For their part, prominent legal scholars and civil society organizations have issued statements of support. They argue that Kaplan's ruling has far-reaching effects on national sovereignty and free expression in human rights, environmental and other affairs, and they're asking the appeals court to overturn it.

"Chevron is trying to change the corporate playbook for avoiding accountability for environmental harms that happen outside the United States," says Michelle Harrison, an attorney at EarthRights International, a Washington, D.C. nonprofit that works on human rights and environmental issues and has filed its own brief asking for a reversal of the district court decision. "However this turns out, this will have a significant effect on the legal landscape."

Inherited liability

Donziger had argued in Ecuador that Texpet, a Texaco subsidiary, dumped millions of gallons of toxic wastewater into the Ecuadorian Amazon between 1964 and 1992, killing livestock and fish and causing an outbreak of cancer, miscarriages and birth defects among people in rainforest communities. Chevron, which acquired Texaco in 2001, inherited Texpet's liability, and was ordered by an Ecuadorian court in 2011 to pay US$19 billion in remediation and damages. The figure was reduced on appeal in Ecuador to $9.5 billion.

Since Chevron has virtually no assets in Ecuador, the plaintiffs are trying to collect their $9.5 billion award by seizing Chevron assets in Argentina, Brazil and Canada, and other as yet undetermined countries. (See Q&A—this issue.) In his RICO ruling, Judge Kaplan said he could not stop such litigation. But he ordered the creation of a so-called constructive trust to route money plaintiffs collect from Chevron back to the oil company, essentially nullifying the effect of any foreign victory.

That, says the amicus brief filed by 36 legal scholars from Australia, Israel, Austria, Spain, the U.S. and other countries, amounts to an "affront," insulting courts that refuse to cast judgment on the fitness of the Ecuadorian judiciary to reach a fair verdict. It "seeks to dictate to the courts of the world what will happen if they recognize and enforce" the Ecuadorian ruling, the scholars say, and violates "the international legal obligation of the United States not to intervene in the domestic and legal affairs of other states."

In another amicus brief, civil society groups including Amnesty International, Amazon Watch and Friends of the Earth argue the RICO verdict discourages free expression. Chevron had named Amazon Watch, a small California nonprofit which advocates for rainforest inhabitants and sided with the Ecuadorian plaintiffs, as a co-conspirator in the racketeering conspiracy against it. It subpoenaed documents from the organization and dozens of other advocacy groups critical of the oil company's behavior in Ecuador. Judge Kaplan agreed with Chevron's characterization, finding Amazon Watch to be a "central player" in a negative publicity campaign and racketeering enterprise against the oil company.

Chilling effect

That decision, civil society groups say in their brief, could effectively prevent small, environmental, public health and human rights groups from pursuing their agendas through media campaigns and other instruments of public pressure. If the RICO verdict is upheld, they say, their First Amendment rights of free speech "will be severely chilled by the very real possibility that they will have to mount costly defenses to retaliatory litigation brought by deep-pocketed corporate defendants."

In 2012, the Second Circuit threw out an injunction handed down by Kaplan that would have blocked enforcement of the Ecuadorian award around the world outright. The appeals court rebuked Kaplan for acting "as the definitive international arbiter of the fairness and integrity of the world's legal systems."

Some analysts forecast a similar result this time around, given that the constructive trust represents an attempt to accomplish the same thing by different means. Either way, they say, the Ecuadorian plaintiffs are likely to spend decades trying to recover their award through asset seizures. Meanwhile, litigation over Kaplan's RICO ruling is expected to help define the reach of U.S. courts abroad and the freedom of activist groups to campaign.

–Steven Ambrus

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Documents & Resources

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Brazilian beef exporters sign sourcing accord

Rio de Janeiro, Brazil

Brazilian federal prosecutors and a beef exporters' association last month signed an unprecedented agreement under which the association pledged to help curb deforestation, especially in the Amazon, by supplying its slaughterhouse members with the digital tools needed to guarantee they are buying cattle raised on legally cleared pastureland.

The Association of Beef Export Industries (Abiec), the agreement's cosigner, comprises 26 slaughterhouse operators, 10 of them based in the Amazon, that account for 70% of the beef processed nationwide and 95% of the beef exported from Brazil, the world's largest beef exporter. The agreement's other cosigners were federal prosecutors in the seven states where beef is a major commodity. "This should reduce the environmental impact of illegal land clearing to graze cattle," says Abiec Executive Director Fernando Sampaio.

In the agreement, Abiec pledged to develop and supply its members with digital tools—databases and software programs—needed to set up the chain-of-custody control system documenting the provenance of beef that their cattle suppliers sell them.

Photos and coordinates

The databases will show federal and state protected areas and illegally cut areas where Ibama, the enforcement arm of the Environment Ministry, has embargoed economic activity. The software programs superimpose government-provided satellite photos over property maps and provide GPS coordinates, all to determine whether ranchers are cutting illegally to expand pastureland.

Abiec's Sampaio estimates that the association will develop the digital tools by year's end and that all of its members will be using them by the end of 2015.

"Although Abiec-member adherence to the agreement is voluntary, we expect all of our members to comply with it," Sampaio says. "That's because Brazilian supermarkets and tanneries are increasingly requiring proof that the beef they are buying is not contributing to deforestation. And if slaughterhouses set up these control systems, they aren't likely to be accused by federal prosecutors of buying cattle raised on illegally cleared pastureland."

In the last half of 2009, Brazil's three biggest slaughterhouses—JBS, Minerva and Marfrig, all Abiec members—along with numerous smaller ones, avoided such litigation by signing agreements with federal prosecutors in the eastern Amazon state of Pará not to buy in the future from suppliers who raised cattle on illegally cleared pastureland.

In 2013, these and several dozen other slaughterhouse companies operating in the Amazon states of Rondônia, Amazonas and Mato Grosso signed similar agreements. Most illegal clearing for grazing occurs in Pará and these three other Amazon states; collectively, they are the core of Brazil's beef industry.

"Since 2009, federal prosecutors have used lawsuits or the threat of them to pressure dozens of slaughterhouses in four Amazon states [Pará, Rondônia, Amazonas and Mato Grosso] from buying cattle raised on illegally cleared pastureland," says Daniel Azeredo, a federal prosecutor from Pará state and lead coordinator of the accord. "This agreement with Abiec is a more unified, organized and broad-based approach for combating unlawful deforestation, not just in the Amazon but throughout Brazil."

Abiec members JBS, Minerva and Marfrig, along with Brasil Foods, now the four largest slaughterhouses in Brazil, have already set up such chain-of-custody systems, with the first three doing so to comply with their 2009 agreements, says Sampaio.

Sharing with prosecutors

Federal prosecutors will monitor Abiec-member adherence to the agreement using the same digital tools the association will supply to its members, along with livestock health-agency data ranchers provide when they seek licenses to truck cattle to slaughterhouses.

The 2009 agreements were triggered by a mid-2009 Greenpeace report, "Slaughtering the Amazon," that asserted cattle ranching was driving 80% of Amazon deforestation. (See "Brazil's beef supply chain blamed for deforestation"—EcoAméricas, June 2009.) The same month, Brazil's three biggest supermarket chains—U.S.-based Wal-Mart, French-based Carrefour and Brazil's Pão de Açúcar—agreed to suspend purchases from 11 Amazon slaughterhouses and any others selling beef from illegally cleared Amazon tracts. The chains also pledged to refuse Amazon beef from slaughterhouses lacking cattle suppliers' sales receipts and audited certification that meat is from cattle raised in legally cut areas.

"The Abiec agreement is as crucial as the pressure big supermarkets here continue to put on beef suppliers because cattle raising continues to be the main cause of Amazon deforestation," says Adriana Charoux, of Greenpeace's Amazon Campaign. "Because [cattle-raising] now accounts for over 60% of [the Amazon's] deforested areas, it's important for slaughterhouses close to the top of the beef supply chain to be more environmentally responsible."

–Michael Kepp

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Documents & Resources

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Peru unveils forestry and wildlife agency

Lima, Peru

Peru launched a National Forestry and Wildlife Service on Aug. 14, laying the cornerstone of reforms meant to bring order to a regulatory area beset by corruption and inefficiency. The kickoff of the National Forestry and Wildlife Service (Serfor) came just days after researchers unveiled a new map showing the country's forests store nearly 7 billion metric tons of carbon, mostly in the Amazon region.

"Our goal is sustainable management of the country's resources," said the new agency's director, Fabiola Muñoz, who is overseeing implementation of Peru's new forestry legislation and forest management policy.

The overhaul of Peru's forest-management system came after deadly protests in 2009 forced the government to scrap new rules and build consensus with indigenous and other groups. (See "Amazon violence prompts Peruvian repeals"—EcoAméricas, June '09.) The government had argued those rules were needed under Peru's free trade agreement with the United States, which required illegal timbering be controlled. (See "U.S., CITES press Peru on its illegal logging"—EcoAméricas, Aug. '10.)

Poor oversight of concessions has led to charges of "timber laundering," especially of valuable big-leaf mahogany (Swietenia macrophylla). (See "Group seeks probe of Peruvian timber exports"—EcoAméricas, June '12.)

Production and conservation

Muñoz is the former deputy director of the Peru Forest Sector Initiative, a U.S. Forest Service-supported program that is helping Peru implement its new forest-management regulations. As Serfor director, she must balance production of timber and other forest products with conservation in the country with the second-largest expanse of tropical forest in Latin America and growing deforestation.

Peruvian deforestation rates have shown sharp increases in recent years. The trend is likely to come under scrutiny in December, when Peru hosts the U.N. Climate Summit, where schemes such as compensation for reducing deforestation and forest degradation, known as REDD+, will be on the agenda.

Government efforts to present the country at the summit as a forest-conservation leader have been undermined by wildcat gold mining that has left parts of the Madre de Dios region looking like a moonscape and by plans for oil palm plantations in the Loreto region. (See "Curbing miners a challenge in Madre de Dios"—EcoAméricas, Sept. '12.)

Loreto, where the Marañón and Ucayalí rivers join to form the Amazon, is Peru's largest and most heavily forested region and holds the country's largest above-ground carbon stocks, says a new study led by Greg Asner of the Carnegie Institution for Science at Stanford University. Asner calculates Peru's above-ground carbon stock at 6.9 billion metric tons, most of it in Amazonian forests. Loreto accounts for 53% of the total, followed by the Ucayalí and Madre de Dios regions, with a combined 26%, although Ucayalí also has a high deforestation rate, especially along roads. "Loreto has an incredible carbon landscape that is underappreciated today," Asner said in a telephone interview. "It has some mega-stores of carbon stocks—big forests that are inaccessible" due to few roads.

The multicolored carbon map—ranging from bright red high-carbon forests in the northern Amazon to low-carbon blue along Peru's desert coast—reveals not just carbon storage, but also ecosystem health, says Asner, whose team created a similar map of Panama last year. (See "Strides being made in gauging forest carbon"—EcoAméricas, April '14.)

A REDD+ plus

Precise calculation of carbon stocks can help in negotiating compensation for REDD+, likely to be a key topic at the December climate summit. Questions remain, however, about international rules for such payment schemes. "If countries were at the stage of negotiating their carbon, [Peru] would have a huge edge" with its detailed map, Asner said. "But they're not at that stage."

Muñoz hopes the climate summit and the carbon map will nevertheless boost Peruvians' awareness of the potential of the country's forests. Officials here also hope the summit will help change the way policymakers view development in the Amazon region.

The role forests play in mitigating climate change underscores the need for "a transformation in the way we understand agriculture in Amazonia, to get away from the era when everything required huge investment in monocropping and shift to a series of high-value products—coffee, cacao, etc.—that are designed to be environmentally appropriate, carbon positive and reducers of deforestation," says Gustavo Suárez de Freitas, coordinator of the Environment Ministry's program of forest conservation for climate-change mitigation.

Serfor will be headed by a board of directors that will include representatives of the Agriculture Ministry, regional and local governments, indigenous and small farmers' organizations, the timber industry and academia. With local and regional elections scheduled for October, the board probably will not be functioning fully until the end of the year, Muñoz says.

–Barbara Fraser

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Centerpiece

Spill points up risks of rainforest oil projects

Cuninico, Peru

Afraid to fish close to home because of an oil spill near this tiny Kukama Indian village on the bank of the broad, muddy Marañón River, Joel Arirama took his canoe two hours up a tributary, where he thought the fish would be safe.

When his wife began cooking them, however, an odor of gasoline wafted through the room. He thought she had spilled kerosene, but the smell came from the frying fish.

Two months after a break in a 40-year-old pipeline dumped oil into the seasonally flooded forest near villages of palm-thatched, stilt-raised wooden houses, residents of the lower Marañón watershed worry about possible long-term impacts on their health and livelihoods.

César Mozambite and his wife, Flor de María Parana, used to travel downriver to Maypuco, the district capital, once or twice a week to sell fish for about a dollar a kilo.

"Now no one wants to buy our fish, not in Maypuco or anywhere else," he says.

With that income gone for now, he and his wife wonder how they will buy school supplies for their children.

The spill and its aftermath underscore the environmental risks facing Kukama Kukamiria communities in the lower Marañón Valley, one of four watersheds affected by four decades of oil drilling that have fouled waterways and forests.

More broadly, it illustrates the potential impacts looming for indigenous communities and their supporting ecosystems in Amazonian countries, particularly Peru and Ecuador, that are seeking to expand oil operations in remote rainforest regions.

Residents of Cuninico scooped up small boquichico (Prochilodus nigricans) and oil-soaked leaves and twigs as evidence of the spill's impact on fish. (Photo by Barbara Fraser)

The government has declared a series of environmental and health emergencies in the Corrientes, Pastaza, Tigre and Marañón basins, but little progress has been made on remediation or distribution of safe drinking water, says Renato Pita of Puinamudt, a group that provides technical assistance to indigenous federations in the four watersheds.

In May, the government set up three dialogue groups to discuss key subjects related to oil operations: health, sanitation and cultural development; land titling and compensation for use of territories; and remediation and payment for environmental damage. So far, however, only two of the groups have even drafted agendas, Pita says.

Villagers in Cuninico raised the alarm about the pipeline leak on June 30, when they saw an oil slick and a mass of dead fish near their community, which is at the confluence of the Cuninico and Marañón rivers in Peru's northeastern Loreto region. The rivers are the community's only sources of water for drinking, cooking, washing and bathing.

They reported the slick to Petroperú, the state-run oil company that operates the 845-kilometer (525-mile) pipeline that pumps heavy crude from several oil fields in Peru's northern Amazon region over the Andes to a port on the coast.

Company representatives arrived that afternoon, and by July 12, the break was patched and the pipeline was pumping again. A month later, several hundred workers were scooping oil out of the pipeline channel into metal drums.

Petroperú employees had noticed a drop in pressure in the pipeline, indicative of a leak, on June 22 and stopped pumping crude, but inspectors were unable to locate the source of the problem, a Petroperú spokesperson said in an e-mail message.

Galo Vásquez, president of the community of Cuninico, said people had noticed that fish had an oily taste three or four days before the oil slick appeared. Residents of neighboring communities said they also saw large numbers of dead fish in waterways during the last week of June, but they did not associate them with the pipeline until they heard about the spill.

That section of the pipeline, which cuts through the buffer zone of the Pacaya Samiria Natural Reserve, a sprawling wetland protected under the international Ramsar treaty, is underwater from around November, when the level of the Marañón River begins to rise, until May or June, when the water level subsides.

As the river rises, fish migrate into a web of lakes and channels in the forest, returning to the river when the water level falls again. Local residents said water in the forest near the pipeline was about 1.5 meters deep at the time the spill occurred. Two weeks later, the ground was exposed and tree trunks along the pipeline channel were stained black to a height of about half a meter (1.6 feet).

According to Petroperú, the spill amounted to about 2,358 barrels and affected 4.5 hectares on one side of the pipeline and 4.2 hectares on the other.

The company has made no official statement about what caused the break, although at a community meeting in Cuninico more than a week after the spill was reported, a Petroperú representative blamed an "outside hand." Vásquez challenged him, saying it sounded as though the company was accusing the community of sabotage.

Damaged section of pipeline is raised above water level using pulleys mounted on pylons. (Photo by Barbara Fraser)

Leaders from communities near Cuninico show how oil drips off sticks in globs. (Photo by Barbara Fraser)

In a statement published in the daily La República on Aug. 8, Petroperú said tests performed at "a prestigious university" showed that the leak was due to "the deliberate removal of protection from the pipe, which exposed the metal to a localized and accelerated process of corrosion that weakened it until it broke."

A report by an environmental prosecutor who visited the site in early June said a protective polyethylene sleeve had been cut at the point of the break. Vásquez said he was pressured to sign the report, although men from the community said that when they helped raise the pipeline out of the water, the sleeve was not cut, but appeared to have slipped out of place.

A report by Osinergmin, the government regulatory agency for energy and mining, attributed the break to corrosion, probably accelerated by deterioration of the sleeve. Other protective sleeves along the pipeline are visibly frayed and worn.

More than 250 workers are cleaning up the spill, according to Petroperú. Recovery of the oil should be completed in the first half of September and collection of other contaminated material by mid-October, according to the company's e-mailed response.

The Environmental Oversight and Evaluation Agency (OEFA), the government regulatory body, has launched administrative proceedings against Petroperú, including an investigation that could last six months, according to María Antonieta Merino, OEFA's assistant director of supervision.

New legislation passed in June cut fines for environmental violations to about one-third of their original levels (See "Peru stimulus raises environmental concerns"—EcoAméricas, June '14.), but the full amount could apply if OEFA rules that the spill did harm to life and health.

In the week after the spill was reported, villagers said their eyes burned when they bathed in the Cuninico River and children broke out in rashes. Some of the men hired by Petroperú to find the leak and hoist the pipeline out of the muck with pulleys rigged on pylons also complained of skin problems.

During the first week, they worked with no protective gear, sometimes stripped down to their underwear and up to their necks in oily water, the men said. Petroperú began providing protective suits when a Peruvian TV crew appeared to film the spill site, they said.

There are more questions than answers about long-term impacts of the spill, especially once water levels begin to rise later this year. Researchers say the hydrology of seasonally flooded forests like those in and around the Pacaya Samiria reserve is complex, little studied and difficult to model.

Studies of the 2010 Deepwater Horizon spill in the Gulf of Mexico are providing new information about the environmental impacts of hydrocarbons, but some compounds could behave differently in tropical wetlands like those around Cuninico.

Light and naturally occurring microbes aid remediation by breaking down spilled oil, says Edward Overton, emeritus professor of environmental chemistry at Louisiana State University in Baton Rouge.

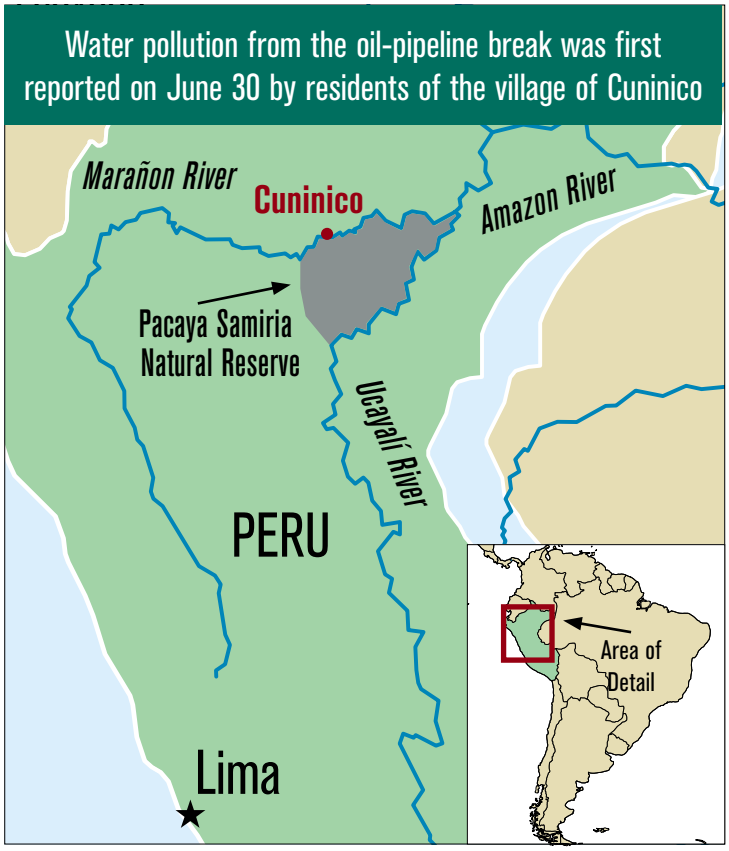
"Once oil gets into an environment where oxygen is around, it gets degraded pretty quickly," he says.

The most important task, he adds, is to "stop the source and clean up the residue. You don't want to leave oil buried, because every time you have a flood event, that oil will be released."

But oil trapped in sediment under standing water would not be exposed to oxygen, and that could occur in Peru's Amazonian wetlands, says Ricardo Segovia, a hydrogeologist with E-Tech International, a U.S.-based engineering firm that advises Peruvian indigenous organizations on oil issues.

In that case, a particular risk is posed by polycyclic aromatic

continued on page 8 ▸



continued from page 7

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hydrocarbons (PAHs)—chemical components of oil that are considered probable human carcinogens, are hazardous to developing fetuses, and have been linked to liver, skin and immune system problems.

"Microbes degrade all constituents [of oil], but certain components are broken down more readily," says Olivia Mason, assistant professor of biological oceanography at Florida State University in Tallahassee, Florida, who is studying the Deepwater Horizon spill. "PAHs are harder for microbes to degrade."

She adds that without sufficient oxygen, those PAHs could persist as they have in some places affected by the 1989 spill from the Exxon Valdez tanker in Alaska.

Long-term effects on fish and fisheries are also unknown. Fish are the Kukama people's

Local community members hired as laborers to help find the leak and hoist the pipeline out of the water initially worked with no protected gear. (Courtesy of Urarinas District Government)

main source of protein and cash income, and the lakes around Cuninico have traditionally been a rich fishing ground for various communities along that stretch of the Marañón.

Villagers are afraid to eat the fish, however, and their customers have turned to other food sources. If the fishing trade takes long to recover, some families could be forced to migrate to cities.

When E-Tech researchers visited Cuninico in mid-August, fish topped the list of people's worries, especially among women, says Diana Papoulias, a biologist who specializes in aquatic toxicology.

A temporary repair allowed the company to begin pumping again 12 days after the spill was reported. (Photo by Barbara Fraser)

When she took a dozen freshly caught fish aside to cut them open and examine their organs for signs of toxicological stress—frayed fins, pale gills or livers, enlarged spleens, dark gall bladders, foul-smelling fat—she was soon surrounded by about 50 people. When they cooked some of the fish for Papoulias, she also found that they smelled or tasted of gasoline.

Until fish are thoroughly tested, Papoulias recommended that people fillet their catch instead of cooking fish with the heads and skin on, as they usually do, and that children and women who are pregnant or of child-bearing age opt for canned fish over wild fish.

The upset to the food supply is rippling through village life. Outside vendors are selling fish in the community for the equivalent of about US$3 a kilo, when most people used to eat fish for free.

And pregnant women may be forced to choose between protein deficiency and eating fish that could cause developmental problems for their unborn children, says David Abramson, deputy director of the National Center of Disaster Preparedness at Columbia University's Earth Institute in New York.

Researchers called for long-term monitoring of water, soil, sediments and fish in the spill area and in the places where people fish, although they noted that studies will be hampered by a lack of pre-spill data.

OEFA's Merino says her agency is analyzing fish caught near Cuninico, but researchers cautioned that the sample being used is too small to be representative.

Papoulias worries that without thorough studies, villagers will lack the information they need to decide whether their fish are safe.

"I'm afraid what's going to happen [is that] people won't hear another thing," she says, "and people will start eating the fish again, not knowing and always concerned."

–Barbara Fraser

Carbon tax
continued from page 1

complain that the levy will make them less competitive, causing economic losses. Even the U.S. Ambassador to Chile, uncharacteristically, criticized the government in public, warning Chileans that the new taxes could discourage foreign investment.

About two-thirds of Chile's electric power is produced using fossil fuels, with almost all the rest generated by hydroelectric dams. René Muga, vice president of the Chilean Power Generators Association, says the new environmental taxes will without doubt translate to higher prices for consumers and industry. "The five dollars per ton of carbon dioxide implies the same dollars per megawatt," Muga says. "This tax then will mean an increase of about 8% to 9% in the cost of power generation."

In a recent seminar in Santiago, Hermann von Mühlenbrock, president of Sofofa, Chile's industrial association, argued that Chilean industry will pay disproportionately more for production than its competitors given it only accounts for 0.2% of global warming. "Chile is putting taxes on that," Von Mühlenbrock said. "Well, I also hope that when we import goods from other countries that do not pay such taxes, there is some compensation or, if not, we are going to have unfair competition."

> **"The green taxes go in the right direction for a country that takes pride in being a member of the OECD, [and they also] empower a society in which no one can keep the country chained to dirty energy"**
>
> **- Sara Larraín**

Specifically, the Bachelet green tax plan calls for an annual tax on emissions from boilers and turbines of 50 megawatts or greater, at a rate of $5 per ton of carbon dioxide; taxes on emissions that affect local public health, such as particulate matter, nitrous oxide and sulfur oxide; and a one-off tax on the imports of diesel-fueled vehicles (ranging from US$3,500 to $5,300 per vehicle) in order to encourage the use of less polluting vehicles.

The Chilean government estimates that in the plan's first year, 2017, new revenue could exceed US$170 million. While some industry representatives claim consumers will see their electric bills increase 5% to 7%, the government estimates a 2% rise at most.

The government also believes companies can find technological alternatives that will allow them to reduce their greenhouse emissions—and, thus, their exposure to the tax.

"These companies can incorporate technologies to reduce pollutants or simply change the fuel they use," Chilean Environment Minister Pablo Badenier told local Chilean media shortly after announcing the measures in April. "Once you have the taxation in place, you open a range of possibilities to reduce emissions."

Sara Larraín, director of the Santiago-based green group Chile Sustentable, says the government should go a step further and require large companies that consume more than two megawatts of energy to pay a green tax. She says it also should tax other types of pollution such as the mining industry's emissions of mercury, cadmium, nickel and other heavy metals.

"The green taxes go in the right direction for a country that takes pride in being a member of the OECD, [and they also] empower a society in which no one can keep the country chained to dirty energy," says Larraín.

Meanwhile, Félix González, president of the Green Ecologist Party in the southern region of Bío Bío, calls the carbon tax too weak. González argues, for example, that many coal-fired power plants in the Bío Bío region have generating capacity under 50 megawatts and so will escape the levy. He calculates that others, such as Colbún's Santa de Maria plant and Endesa's Bocamina II, will pay just $15 dollars a day for carbon emissions.

"These figures are based on the government's own data," says González.

American energy consultant Stephen Hall, who has worked in Chile on projects including the previous Bachelet government's energy-efficiency program, says the new taxes unfortunately are being implemented within the context of a weak energy policy.

"The government's energy agenda is a continuation of the existing paradigm," he says. "They plan to build a third regasification plant, and use ENAP [the government-owned oil company] as a national market demand aggregator for gas. There are no new commitments to renewables, and the energy efficiency aspect is weak and vague."

Adds Hall: "They basically steered a careful course between mouthing all the right public slogans while at the same time satisfying the energy monopoly."

–James Langman

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Marina Silva
continued from page 1

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the second-round runoff.

In the current contest, Silva had looked unlikely to become vice president, let alone president. That's because before his jet crashed while attempting to land for a campaign stop, Campos was only registering 8% in the polls despite being the scion of a politically prominent family. For her part, incumbent President Dilma Rousseff of Brazil's Workers Party (PT) seemed headed for a decisive victory.

But the plane crash and Silva's elevation to party standard-bearer has forced handicappers to revise their forecasts in the lead-up to October's initial round of presidential balloting. The most recent poll conducted since Campos's death on Aug. 18 put Silva at 29%, or second to centrist Rousseff's 36% and 10 points ahead of Aécio Neves, a conservative, business friendly senator who had previously ranked second. The Aug. 23-25 survey found that in the event of a second-round runoff—now considered a likelihood—Rousseff would lose by nine points in a matchup with Silva.

Political appeal

Silva's strength might be due in part to a wave of sympathy in the wake of Campos's death. But experts cite other factors. Among them are the credibility she gained by helping to temper deforestation rates; her authenticity as a sustainable-development advocate, given her early history rubber tapping with her parents to help supplement the family's meager income; her appeal to youths and to religious conservatives—the former on account of her environmental advocacy and the latter because she is an evangelical Christian with conservative stances on abortion and certain other social issues; and the name recognition she enjoys thanks to her previous presidential run.

Rousseff's inability thus far to spur Brazil's stagnant economy only has boosted the impression here that a strong challenger could make inroads on the electorate.

Silva was a member of Rousseff's PT while environment minister. But she resigned her post in May 2008 and left the party in August 2009, partly out of concern that environmental factors were not given sufficient weight in development decisions. She left the Green Party (PV) in July of 2011 amid disagreement with the party leadership, then began planning a new party—the Sustainability Network, for which she was expected to be the presidential candidate. Last year, though, Brazil's Superior Electoral Court ruled that Sustainability Network supporters had failed to gather the 500,000 signatures needed to organize as a party and launch a presidential campaign.

So Silva joined forces with Campos last October—forging a somewhat odd alliance, given that the center-left Campos had close ties with business. Now that she is the PSB's nominee, experts say, Silva will have latitude to shape her own sustainable-development agenda. But the party did name as her running mate a PSB congressman who is friendlier than she is with Brazil's powerful agribusiness sector.

"Yes, party leaders will try to persuade Silva to be a more conciliatory, more pragmatic candidate, as Campos was," Rafael Cortez, a political analyst with Tendências Consultoria, a Brazilian political and economic consulting firm. "They will likely try to persuade her to be friendlier to the agribusiness sector to get more donations. But part of Silva's appeal is that she is not beholden to such interest groups. And she could decide to run a more progressive campaign than Campos did."

Adds Cortez: "Based on the latest poll she will probably be in a runoff against Rousseff, one she could possibly win."

Green gravitas

PSB Congressman Alfredo Sirkis, who left the Green Party with Silva to help create the Sustainability Network, then accompanied her to the PSB, says the party's platform already reflects some of Silva's ideas. "Silva will likely add substance to the platform's environmental themes because she has sustainability in her blood. Rousseff just pays lip service to sustainability, and Neves doesn't even bring it up."

The PSB platform supports the goal Brazil set in its 2009 National Climate Change Policy Law to reduce emissions voluntarily 36.1% to 38.9% below levels originally projected for 2020. Silva was one of the main proponents of the law's enactment when she resigned as environment minister and returned to the Senate.

As environment minister, Silva was an architect of the government's Amazon anti-deforestation plan, launched in April 2004, which established land-use controls, promoted sustainable development and bolstered forest monitoring and enforcement. The measures helped reduce Amazon deforestation rates 58% by 2008 and 79% by last year, bolstering Brazil's efforts to address climate change.

If Silva becomes president, any climate-protection initiatives she launches will need to encompass other fronts. A government study issued last year showed that despite a dramatic slowing of deforestation-related carbon emissions in 2005-10, Brazil's carbon output rose in four other sectors: energy and transportation (by 21.4%); waste treatment (16.4%); industrial processes (5.3%); and agriculture (5.2%).

–Michael Kepp

Around the Region
continued from page 2

10 feet (three meters) and weigh more than 400 pounds (180 kilos). The study also explains why the giant fish are quickly disappearing from some regions of the Amazon.

The research drew on observations and counts from 182 fishermen in 81 communities stretching over 401.5 square miles (1,040 sq kms) in the eastern Amazon state of Pará.

Arapaima are obligate air-breathers which on account of their primitive lung must come to the surface every 5 to 15 minutes for air. This makes the fish easy to count—and also to harpoon.

Study results indicate that arapaima populations are extinct in 19% of the 81 communities studied, depleted (approaching extinction) in 57%, and overexploited in 17%. Only in 7% (around five) of the communities are its populations well managed.

And even in those five communities, arapaima numbers are being sustained only because federal rules for harvesting the fish are being more strictly followed and because community members routinely patrol to keep outsiders from taking fish, says study co-author Donald Stewart, a professor at the College of Environmental Science and Forestry at the State University of New York at Syracuse.

Follow-up: Donald Stewart, study co-author and professor, College of Environmental Science and Forestry, State University of New York at Syracuse, Syracuse, New York, (315) 470-6924, djstewart@esf.edu. For press release on the study, in English: www.vtnews.vt.edu/articles/2014/08/081314-cnre-arapaimaextinction.html

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U.S. protection sought for monarch butterfly

Three environmental groups and a leading expert on the monarch butterfly have asked the United States Fish and Wildlife Service to protect the insect under the Endangered Species Act.

Their petition, submitted Aug. 26, points to the decline in the population of the North American monarch butterfly by 90% over the past two decades as evidence of the need for a new strategy. The Center for Biological Diversity, the Center for Food Safety, the Xerces Society and monarch specialist Lincoln Brower warn that even though the orange and black butterfly seems to be ubiquitous across the United States, it faces mounting risks across much of its habitat.

"Monarchs are in a deadly free fall," says Brower, a professor at Sweet Briar College who has been tracking the monarchs for 60 years, in a statement from the petitioners. "And the threats they face are now so large in scale that the Endangered Species Act protection is needed sooner rather than later, while there is still time to reverse the severe decline in the heart of their range."

The monarch's population is estimated to have declined from 1 billion in 1995 to just 35 million last winter. A key cause is the increased use of glyphosate, an herbicide that destroys milkweed, the monarch caterpillar's only food source. Glyphosate, known by its brand name Roundup, is used across the Midwest on fields planted with corn and soybeans that are genetically engineered to be resistant to it.

"The majority of the world's monarchs originate in the Corn Belt region of the United States where milkweed loss has been severe," the petitioners write.

That loss has intensified as grassland in the United States has been turned over to crops grown for biofuels. Climate change, severe weather, predators, pesticides and the introduction of new herbicides pose additional dangers. In the Mexican forests where monarchs spend the winter, years of conservation efforts have halted clear-cutting, but small-scale logging continues to degrade this habitat.

Listing the monarch as threatened would lead to setting aside "critical habitat" to help monarch populations recover, the petitioners argue. It would also make it illegal to kill monarchs or modify their habitat without a permit, and would generate a federal recovery plan.

The Fish and Wildlife Service has 90 days to give a preliminary response and then a year to make a final decision.

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Venezuela scrambles to ease effects of punishing drought

Facing one of its worst droughts in 60 years, Venezuela has turned to rationing water, distributing animal feed to farmers and seeding clouds in hopes of producing rain.

But with critical shortages of milk, meat, rice, corn and other staples and regular protests in poor areas of Caracas over sharply curtailed water service, the government of President Nicolás Maduro is increasingly on the defensive over its failure to guarantee a better water supply.

Authorities blame climate change for the drought, which has devastated the northern part of the country and left nine of 23 states in crisis. Environmentalists say there's more to the story, charging the government has failed to build reservoirs and wells that might prepare the country for worsening climate conditions. In the 15 years of rule by the late President Hugo Chávez and his successor, Maduro, who took office last year, not a single water treatment plant has been constructed, they say.

"There is no maintenance policy for the nation's water system," says María Eugenia Gil, president of the Aguaclara Foundation, a nongovernmental group in Caracas. "The government reacts to droughts, but they do nothing to prepare for them."

Venezuela is one of the world's 20 most water-rich nations, its per-capita supply similar to Colombia's and Brazil's. But most of its rivers are in the south and central parts of the country, while the bulk of its population lives in the north. That puts a premium on conserving watersheds and maintaining dams and distribution systems, the very activities that critics say are lacking.

Much of the water supply for Caracas, for example, comes from the Guárico River, which is born in the central state of Carabobo and whose water is transported by aqueduct to a large reservoir, then to treatment plants before being pumped to homes. But forest clearing around the Guárico basin has reduced the water supply. And agrochemicals as well as urban and industrial waste have left the water too polluted to be processed adequately by Caracas' deteriorating treatment plants.

The toll on Caracas has been intense. Some neighborhoods have gone without water for up to four days a week.

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Q&A:

Lawyer targets Chevron assets for Ecuadorian plaintiffs

Alan Lenczner is a founding partner of the Toronto law firm Lenczner Slaght, where he is counsel for Yaiguaje et al., the Ecuadorian plaintiffs seeking to sue Chevron Canada following a US$18.3 billion judgment in 2011 obtained in Ecuador against its parent company, Chevron, for oil pollution in the Amazon. Last year the award was cut to $9.5 billion. A graduate of the University of Toronto law school, Lenczner has pursued a trial and appellate practice with emphasis on civil commercial matters, construction cases, professional liability and corporate securities litigation. He lectures on subjects including fiduciary duties and constitutional law, and he has taught trial advocacy at the University of Toronto and Osgoode Hall law schools. Since 2011 Lenczner has been the lead Canadian lawyer for Ecuadorian plaintiffs attempting to access Chevron assets outside Ecuador given the dearth of company assets in that country. Lenczner spoke recently with EcoAméricas contributor Celeste Mackenzie.

Alan Lenczner

How did you become involved in the case against Chevron?

I was approached by the Ecuadorian lawyer who had a judgment in Ecuador and because Chevron had no assets in Ecuador, and they knew Chevron had assets in Canada. I said "yes" after I went to Ecuador and saw the contamination myself. I also reviewed the trial record, which was 216,000 pages long.

Your next court date is tentatively a Dec. 11 hearing before the Supreme Court of Canada (SCC), where Chevron will appeal a Dec. 2013 Ontario Superior Court of Justice ruling that gave the case the go-ahead in that province. Will you be presenting any new arguments?

The arguments are more or less the same on both sides: whether or not the Ontario court has jurisdiction to enforce the judgment. Our argument is that Chevron had a trial and two decisions in Ecuador. They [the company] agreed to go there. Under our law, they have to respect that decision. Chevron's argument was, "What's the point of all this? We have no assets in Canada, therefore you shouldn't take jurisdiction." The answer is twofold: the SCC has said on two other occasions that that's not an issue for jurisdiction; it doesn't affect jurisdiction. Second point: Chevron Canada is wholly owned by Chevron Corp. [and] 100% ownership means 100% control. Chevron Canada is a seventh level wholly owned subsidiary of Chevron Corp. Chevron Corp. owns 100% of the shares of each descending subsidiary, which owns 100% of the next descending subsidiary. None of the intermediary subsidiary companies carries on business. The directors of five of these six subsidiaries are all employees of either Chevron Corp. or of Chevron Global Downstream LLC, itself a wholly owned subsidiary of Chevron Corp. The four directors of Chevron Canada are all employees. It is obvious Chevron Canada is wholly owned and controlled by Chevron Corp. for the sole benefit of Chevron Corp.'s shareholders. The action in Ontario seeks enforcement of the obligation of Chevron Corp. to pay a final judgment. The suggestion Chevron Canada must have a real and substantial connection to the pollution claim tried in Ecuador is wrong. Chevron Canada is the asset, the very object of the action. Contrary to the submission of Chevron Canada, its Ontario business operations are intrinsically tied to the subject matter of the enforcement action.

If you succeed before the SCC, what happens next?

If we win the case, it will go back to the Ontario Superior Court. If not, that's the end.

Chevron Canada has about US$15 billion in assets?

It could be more. It includes a lubricant business, a crude-oil refinery, and retail gasoline and diesel fuel stations in British Columbia operating under the Chevron brand; interests in the Athabasca Oil Sands Project and the Hibernia and Hebron oil fields; leases in the Northwest Territories, and interests in the Duvernay Shale Field and the Kitimat LNG Project. Chevron Canada also markets and distributes Chevron-branded antifreezes, automotive oils, greases and gear oils, industrial oils, passenger motor car oils and specialty products.

How has this case changed the way extractive industries operate?

There's greater corporate social responsibility in every boardroom in North America. I would have thought any extractive industry would say, 'If we cause a problem we have to fix it.' That's what this case should stand for. The core of this case is about Chevron Corporation's refusal to pay $9.51 billion to remediate 1,500 square kilometers of toxic contamination it deposited, from 1972 to 1990, on the lands, rivers, streams and ponds in the Ecuadorian Amazon. The respondents [in the SCC case] represent 30,000 indigenous people who drink and bathe in polluted waters, eat crops grown on contaminated lands and continue to suffer illness, disease, and premature deaths. This case is not about preventing potential damage. It is about paying for the remediation of massive environmental contamination. The essential fact is that Texaco [acquired by Chevron in 2001] polluted in Ecuador. Texaco was found responsible, so they [Chevron] have that liability. The basic principle is "the polluter pays."

Will the impact be greater if the plaintiffs seize assets in Canada?

The bigger impact is when a corporate multinational, and there are lots of them in this world, has something go wrong, the assets of an entire organization are available to cure the wrong. The parent company is responsible—not just the subsidiary—and the assets of the entire organization are in play. It's a principle called "enterprise liability." Enterprise liability exists in Canada and is a modern-day evolution of the principle of corporate separateness. Chevron Corp. is a corporate enterprise—a conglomerate group, as it describes itself, of parent and subsidiary corporations and subsidiary groups operating for a common purpose. The enterprise behaves as a unified whole from an economic perspective. Thus, in this context, the fiction of the corporation's personhood becomes pure legal formalism at its costliest: the structure that may force society to pay for the harms caused by negligent subsidiary behaviors. This result is especially expensive when the potential harms are greatest, for example, in industries involving hazardous activities or those that potentially impose large human rights or environmental costs on the public. The courts, including this court, have not applied corporate separateness as a strict, inflexible rule. The courts have looked at the substance of the issue and determined an appropriate, just result to right the wrong.