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From the offshore wind potential of Europe's North Seas to sustainability in Brazil; from tar sands in Canada to Kashmir as the key to Central Asia; from mercenaries in Mexico to the recovery in Iceland – *Revolve* provides insightful analysis of our interconnected world.

While focusing on the realities of current affairs, *Revolve* highlights pressing environmental and energy concerns. In this issue for example: the “Coal Fires of Jharia” in India and “Appalachian Mountaintop Removal” in the United States – both to mine more and more coal...

There are more innovative and less harmful ways to live on this Earth. *Revolve* encourages more optimistic initiatives, such as our futuristic cover feature – urban vertical farming – and emerging artists and galleries like *Across Borders* that bring complementary and creative new ideas.

To new and returning readers of *Revolve*, if you are on a plane or metro, at the office or in a café, take the time to go on a free public transport **CITIES** tour of Tallinn, the capital of Estonia, and to travel through **VIEWS** to distant nostalgic landscapes.

In the summer of 2012, only two years after its launch, *Revolve* won a prestigious media award at the Stockholm World Water Week for its special water report in association with the Union for the Mediterranean.

Based on this report and recognition, *Revolve* is now creating an international platform to address our common challenge of how to manage and share the most basic and necessary natural resource – water. This is a challenge that affects us all.

To comment, write to:
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Stuart Reigeluth
Founding Editor

“When we try to pick out anything by itself, we find it hitched to everything else in the world.”

– John Muir

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Cover image by *Appareil* studio of
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REVOLVE Magazine (ISSN 2033-2912)
is registered in Belgium, BE 0828.676.740.
For subscription and submission inquiries,
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Revolve Magazine is printed with vegetable ink
on chlorine-free paper.

www.revolve-magazine.com

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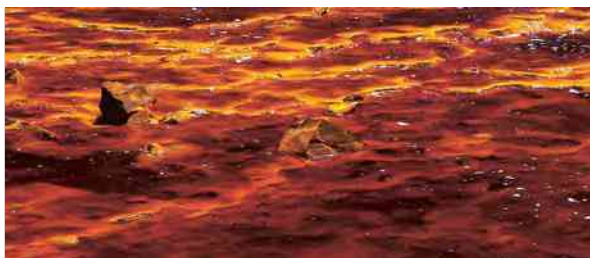
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ICELAND

The Road To Recovery

Writer: Andrew Canning

Photographer: Maroesjka Lavigne

Andrew Canning is a British journalist dealing in political, social, economic, cultural and transport affairs. With a background in History, he has a keen interest in Nordic society and culture, and has traveled extensively in the region.

Maroesjka Lavigne obtained a Masters in Photography at Ghent University in the summer of 2012. She spent four months in Iceland, driving on her own through the desolate snow-covered and blossoming landscapes of winter and spring, looking for those moments when color, light and the subject merge into the perfect image.



Iceland is the only country in Europe to have deposed its leader for “gross negligence.” The island is also the fastest to turn around and counter the economic crisis, writes **Andrew Canning**.

Laxness and Independence

"The tyranny of mankind; it was like the obstinate drip of water falling on a stone and hollowing it little by little; and this drip continued, falling obstinately, falling without pause on the souls of the children." So go the words of one of Iceland's finest literary figures, the Nobel laureate, Halldór Laxness.

Published in two volumes in 1934 and 1935, *Independent People* (*Sjálfstætt fólk* in Icelandic) is a social realist critique of the plight of Icelandic farmers in the early part of the 20th century.

Laxness' words were a damning indictment of the working conditions of the Nordic island's farmers, only recently emancipated from debt bondage. Through the telling of the story of Bjartus, a sheep farmer determined to become financially independent by toiling away on his plot of land, Laxness also issues a more fundamental critique of the governing laws of economics.

Wrestling with the Norwegian and Danish monarchies, Iceland declared independence in 1918. Previously one of the least developed and poorest countries in the world, the industrialization of the fishing trade and Marshall Plan aid after the end of the Second World War helped to turn around the fortunes of one of Europe's most sparsely-populated countries.

These changes brought startling economic growth to the island during the 1970s, rapidly turning it into one of the world's richest nations. Iceland joined the European Economic Area in 1994 and undertook a wholesale privatization of its banking industry in the early 2000s. Integration into the globalized economy was, as Iceland was soon to discover, only a one-way street.



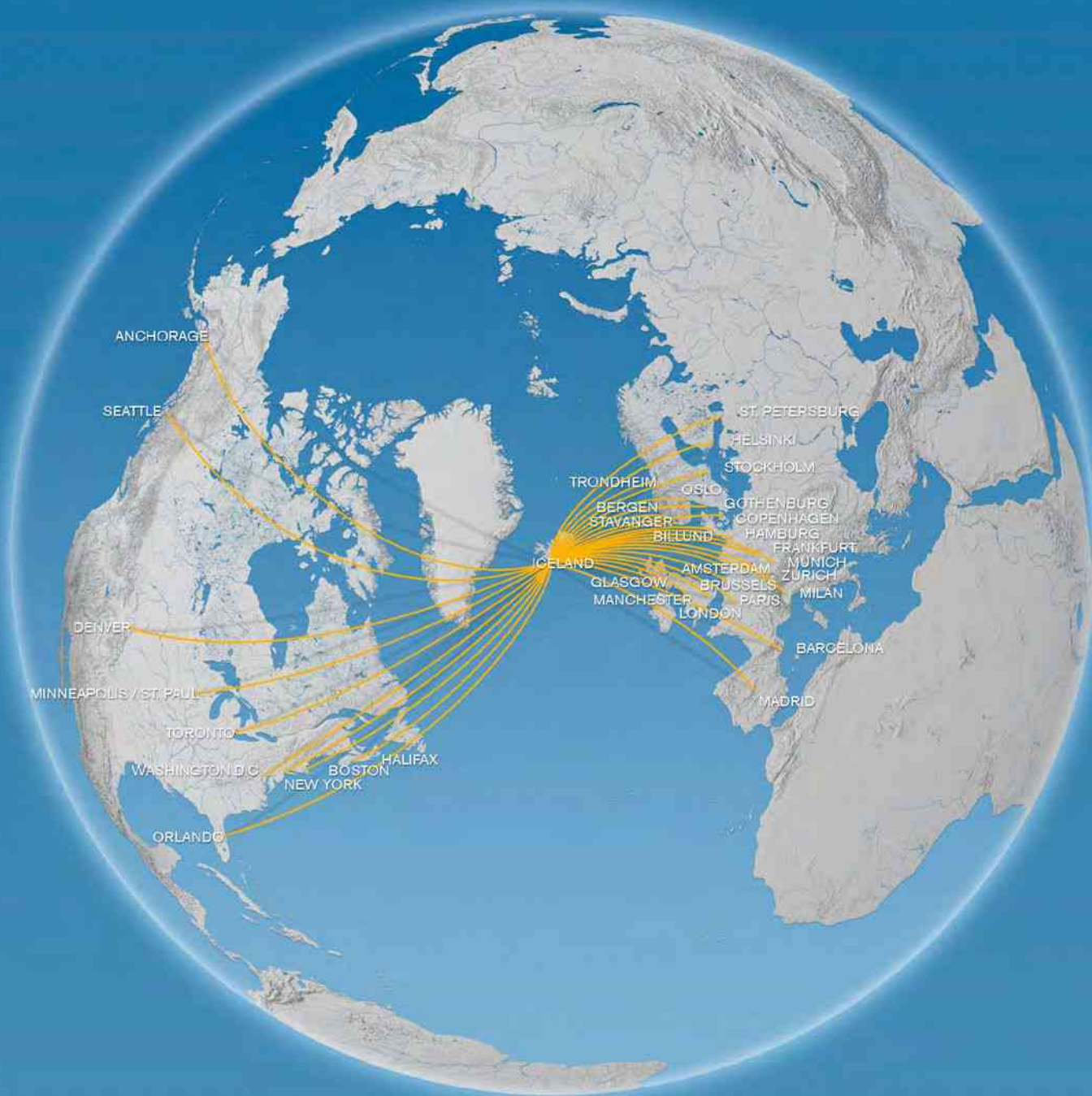
Slippery Slope

In 2007, the U.S. housing bubble which, until then, was artificially inflating large parts of the world economy, finally popped. The subsequent panic provoked an enormous, systemic financial crisis. Despite its geographical isolation, the Nordic country of just 320,000 inhabitants was spared none of the secondary effects.

Having chosen to build its house on foundations of sand, Iceland was one of the crisis' first victims. It would be no exaggeration to say that Iceland was literally staring down the barrel of bankruptcy, its (privatized) banking sector having racked up massive debts almost equivalent to the entire holdings of the Iceland National Bank.



In one fell swoop Iceland tore up the rule book of Brussels' austerity orthodox that was to be imposed on numerous countries from Ireland to Greece in the years to come.



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With the country facing economic meltdown, the Icelandic authorities took the unprecedented step of re-nationalizing its three biggest banks: Glitnir, Kaupthing and Landsbanki. In one fell swoop Iceland tore up the rule book of Brussels' austerity orthodox that was to be imposed on numerous countries from Ireland to Greece in the years to come.

"The size of the banking sector, roughly 10 times Iceland's GDP, made it impossible for the Icelandic state to save the banks. In other words [they] were too big to save," explains Gudrun Johnsen, Assistant Professor at the Reykjavik University's School of Business. Johnsen continues:

"The boldest and biggest accomplishments of the Icelandic authorities during the collapse of the banks were to alter the order of claims of the bankrupt estates – meaning that deposit-holders received priority claims over bondholders. This saved the Icelandic economy from total collapse and chaos, given the fact that the three banks amounted to over 95% of the banking sector, in Iceland, in terms of their assets."

Instead of bailing out the banks with tax revenues, Iceland protected account holders before letting the edifice crumble. Icelanders had overwhelmingly voted against (90%) the so-called 'Icesave proposal' of refunding the banks' foreign account holders in March 2010. This measure would have meant transferring roughly 4% of Icelandic GDP to the UK and 2% to the Netherlands, which prompted the former to enact anti-terrorist legislation in 2008 to freeze Icelandic financial assets in the UK. Icelanders argued unequivocally that they were not going to be held responsible for the debts of a private bank. In April 2010, another vote was taken, with the government hoping to get the result it desired with a publicity campaign eager to get the population behind the measure. Again, the proposal was shot down by a majority of 60%.

This totally unique approach to the crisis in Europe of prioritizing democratic pragmatism over immediate financial considerations set the tone for what was to come next.

This totally unique approach to the crisis in Europe of prioritizing democratic pragmatism over immediate financial considerations set the tone for what was to come next.

Haarde's Trial and Hauksson's Investigation

Protests broke out sporadically in the early part of 2009 and quickly intensified with protesters calling for the resignation of the right-wing government for its alleged irresponsibility both before and after the outbreak of the crisis. Elections followed in April 2009 and a new left-wing government was elected, supportive of the protest movement and determined to put in motion its reform process.

The Icelandic Parliament conducted what it called a "truth commission report", published in 2010, that accused the former prime minister, Geir Haarde, of "gross negligence" in failing to keep Icelandic banks under control and for withholding information that showed the island was heading for financial meltdown. The 2,300 page report is the result of a thorough investigation into the crisis and depicts an artificially inflated financial system that was infested with corruption and exacerbated by regulatory negligence.

"The Parliamentary Special Investigation Commission had truly unique data privileges, so Iceland is the only country which knows what happened to its banks and why the crisis hit the country the way it did," Johnsen explains. This, again, was another extraordinary step that the country was willing to take.

The report eventually led to Haarde appearing in a special criminal court (*Landsdomur*), set up by the Parliament that met for the first time in its 100-year history to discuss the case against the only politician in the world to stand trial since the international financial crisis first hit in 2008. Haarde was eventually to be exonerated in April 2012 of three charges of failing to rein in the country's banking sector but was charged with failing to hold dedicated cabinet meetings ahead of the crisis, although ultimately he managed to escape punishment.

Haarde nevertheless claimed he would take his case to the European Court of Human Rights: "I have always found this charge to be even more ridiculous than the others [...] and I am therefore seriously considering whether to take this matter further," he declared at the end of the trial.

While the Haarde trial was an important step in bringing those deemed responsible to account, many Icelanders still feel it was not enough. "I think the Geir trial is important in terms of accountability," explains Anna Andersen, Managing Editor of *The Reykjavik Grapevine*, an English language magazine based in the capital. "At the same time, people are critical of the fact that only Geir is being tried, that one person is being blamed. Perhaps that's not fair."

Perhaps indeed, which is why, another twist in the plot saw Iceland take another unique and somewhat bolder measure: it appointed Ólafur Þór Hauksson, a former district commissioner in rural Akranes, to hunt down the country's economic miscreants.

"This is a criminal investigation and follows the same procedures as any other such investigation, even if it is connected to banks and businesses and a lot of specialized knowledge is involved," Hauksson told the *Huffington Post* in 2009. "What we think banking is, this picture was incorrect, it had no basis in reality. This collapse last fall [2008] surprised most Icelanders. Even if there were a few warning voices, I think it absolutely caught the nation off guard."

Hauksson's investigation led to the first criminal prosecution following the financial crisis of the country's former permanent secretary at the Ministry of Finance for insider trading in April 2011. In December 2011, criminal charges were also brought against the former CEO of the now bankrupt Glitnir Bank.

Bumpy Road after Rapid Recovery

While the majority of the Eurozone plunged into recession, Iceland's extraordinary measures, which without recourse to hyperbole, would not have seemed incongruous in a Hollywood blockbuster, started to take their effect. The island's economy grew by 3.1% in 2011, higher than the Eurozone's anemic 0.7% and higher as well than its Nordic neighbors, Sweden (1.1%), Norway (2.5%) and Finland (2.9%).

Tourism, now the country's third most important revenue stream after fishing and aluminium, has started to recover as well. The government and the private sector invested some €4.5m in a promotional campaign just as the now-infamous Eyjafjallajökull volcano erupted in 2010, causing travel pandemo-



Iceland finds itself at a critical crossroads between deeper EU integration or turning its interests across the Atlantic.



nium across Europe. Adventurous tourists were invited to come and discover more about the country whose volcanoes were hitting the headlines and the integral role they play in the island's mystique.

Dubbed "an economic enigma" by the Belgian economic review, *Trends*, Iceland now hopes to sustain or even increase the 700,000 tourists who make the trip each year to discover more about the island's volcanoes, geothermal pools and exquisite nature. Once put off by its reputation as an

expensive destination, tourists slowly began to return thanks in part to the fact that the Icelandic krona had lost almost half its value since the start of the crisis.

However, unlike many a Hollywood blockbuster, there's no fairytale ending in sight. "We've gone a long way, however we are not over the hardship yet," tempers Johnsen. With budgets still tight, the country's government is currently considering a proposal to triple the current rate of VAT on accommodation, restaurant meals and tour-

ist attractions, potentially undoing Iceland's recently earned reputation for an attractive yet economical holiday.

Unemployment is also still an issue. "[It] was less than 2% before the crash," explains Andersen, "and I believe it peaked around 9%. [It is now 5.8% which] doesn't take into account the number of people who have left the country." Emigration hit a 20-year peak in 2009 with 10,612 people (or 3.3% of the population) deciding to pack their bags, although it has started to level again.

"The [economic] growth that we saw in 2011 was primarily driven by private consumption," Johnsen adds. "Icelandic consumers have a built up need for consumption, after having pulled back after the crash and that is showing in the national accounts of 2011."

"A lot of perverse incentives remain in the financial and economic (and judicial) system, due to the fact that rules were changed [after the crisis hit]. The capital controls still hold the currency steady, which both hampers real growth due to lack of foreign investment and pushes successful Icelandic exporting firms to leave the economy to maintain their freedom of movement of capital."

A cathartic process of hunting down those responsible for bringing the country to the brink of economic destruction and modest yet promising growth means Iceland finds itself at a critical cross-roads between deeper EU integration or turning its interests across the Atlantic.

In March 2012, *The Economist* re-started the debate over the future of the Icelandic króna and floated the proposal of swapping it for the Canadian dollar. The idea was originally dismissed by the Icelandic government but the debate continued, particularly amongst the business community where it was warmly received.

In April 2012, the Icelandic Minister of Economy travelled across the Atlantic for meetings with Bank of Canada and regulators and stating publicly that it was not something to be ruled out. In the same month, Chinese Premier Wen Jiabao took the opportunity to visit Iceland, prompting hopes for Chinese investment in the country's post-crash economy but also speculation about the world's most popular country hoping to get a foothold in the Arctic.

Negotiations are underway regarding Iceland's application for full EU membership, originally deposited in July 2009 by the

new center-left government. Despite issues regarding fishing quotas, ongoing controversy over Icesave and a lack of consensus among current Member States, Iceland is confident that it can become a member of the club. Under what terms and or indeed what currency, remains to be seen. Although there is political will, public opinion started to turn against membership (and the adoption of the euro) as recession and austerity reined in the Euro zone.

In navigating the inevitably choppy waters of the years to come, Iceland will have some undeniably tough decisions to make. Nevertheless, Laxness' classic portrait of an independent people, written almost 80 years ago, still resonates today. 🌀

Visit Revolve VIEWS online for more photos of Iceland by Maroesjka Lavigne: www.revolve-magazine.com

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FOCUS YEAR 2012 ENERGY TRANSITION



Q&A:

Sir Graham Watson President of the ELDR Party



FOCUS YEAR 2012
ENERGY TRANSITION

Energy and climate analyst at *Revolve*, Lubomir Mitev, talks with the President of the European Liberal Democrats and Reform Party (ELDR) about the **ELDR energy transition focus in 2012**.



Interview with Sir Graham Watson at the European Parliament, Brussels, September 2012.

Is the creation of a single European energy market going to contribute to reducing the dependence on Russian gas and oil, as well as supporting the development of green energy sources?

I think it is very important, providing that we accompany the opening of the market with the laying of high-voltage direct current (HVDC) cross-border energy cables so that we have a truly European energy grid. At the moment, we still tend to have 27 national energy grids without interconnection. We need the Connecting Europe facility that is being proposed by the European Commission to do that. And if we do that, then you make renewable viable. One of the things that I love about what you are doing with *Revolve Magazine* is that you are looking at the potential, for example in your issue where you are look at the potential of offshore wind in the North Sea. But we need to get that offshore wind to markets and they tend to be in the center of the continent. That is why we need a European electricity grid.

In what ways are you advancing initiatives such as the North Sea offshore wind projects?

I am, partly through my leadership of the ELDR Party, trying to mobilize liberals from across the continent to support this kind of idea. But also through the Climate Parliament, which I lead and which is a global network of legislators, we are trying to make people aware of the opportunities of renewable energy. For example, in the North of Spain and

What are your most realistic visions for the world in 2050?

Well I very much regret to say that the way we are going at the moment, things look very bad. We are continuing to use fossil fuels and not taking advantage of all the opportunities that are there. In the case of Americans – a similar story; and the Chinese emissions are increasing so fast that unless we have serious and concerted action, the chances of handing on to our children and to our grandchildren a planet that is habitable, are very much smaller.

Do you think that nuclear power has a part to play in the future green economy or is it stifling the growth of renewable energy?

I am not a big fan of nuclear power, partly because I think it is a very expensive way of

“We need to see individual leaders blazing a trail for the development of renewable energy in their own countries to lead by example.”

generating electricity. But I do believe that if we are to seriously cut our dependence on fossil fuels, then nuclear power will have to be a part of the energy mix. For the next 30 or 40 years what we hope to do is develop renewables as quickly as we can so that we can gradually cut down our dependence on nuclear power.

Portugal at the moment we are generating a lot of electricity from wind power, which is pushed into the ground because we simply cannot get it to market on many occasions. If we had some more interconnections between Spain and France, as well as the rest of the continent, that would help us to exploit and develop that potential.

Do you think that states and private enterprises will be able to provide the necessary capital to make them a reality? Or will austerity slow down the vision of a carbon-free economy?

I think that private enterprise will come in and from all of my discussions with companies such as Siemens and RWE, they are ready to come in provided that they are convinced that governments are committed fully to the switch from fossil fuels to green energy. We have to convince them through our actions here at the European Parliament, through what we are doing in national parliaments and governments that we are committed to making this switch.

Is there a realistic chance of the Member States to increase energy efficiency in the new Directive?

I think we have made a lot of progress already. Through the work of MEPs like Chris Davies and Claude Turmes and others, we have made a lot of progress

“But it will take the European Commission to get much tougher with Member States about doing what they have already signed up to do in the Kyoto Convention and other international agreements.”

in enhancing energy efficiency and in putting down the legislative basis for the development of renewables. But it will take the European Commission to get much tougher with Member States about doing what they have already signed up to do in the Kyoto Convention and other international agreements.

Kyoto is expiring now. Do you think that global politics will have a role to play in that?

We certainly need some global leadership. The agreements that were

reached in Durban at the UN Framework Convention on Climate Change [UNFCCC] last year need to be built on this year in Qatar. We need to see individual leaders blazing a trail for the development of renewable energy in their own countries to lead by example.

Will EU energy and climate policies be able to complement each other enough to provide the needed incentive for a shift to sustainable energy?

I think it is important not to be naïve. We have very big and very powerful interests out there in the oil and gas lobby. The gas companies made a combined profit last year alone of some \$180 billion. These companies are going to use their influence to keep oil and gas as the staples of our energy diet. We have to rise up, point out the damage which is being done by this in terms of the climate change that we are already seeing and insist that they make the switch. I do not mind if it is Shell and Gazprom and Conoco who are leading the drive for renewable energy, but I insist that we make that drive. ☼

Read the full interview or watch the video: www.revolve-magazine.com

More on the ELDR focus year 2012 energy transition: www.eldrfocus.eu



Brussels, 19 March 2013

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THE ARAB GAS PIPELINE

Problems with the Pipes

Writer: Paul Cochrane is a freelance journalist based in Beirut, Lebanon, since 2002. He has reported for over 40 specialized publications about West Asia politics, media and culture: backinbeirut.blogspot.com

The Arab protests and additional European Union sanctions against Iran and Syria have had major ramifications on current and future natural gas supplies and trade. What has made serious dents in national energy portfolios has garnered surprisingly little coverage in the international media, but involves a vast network of pipelines that are intended to connect the Middle East, Central Asia and Europe.

Natural gas is proving to be a useful foreign policy tool in the eastern Mediterranean.

Delays and the Effects of Sabotage

The first setback was to a pipeline project that was supposed to enable, in the words of a pan-Arabist at the Egyptian Natural Gas company, “the dawn of Arab integration” when work started in 2003. The Euro-Arab Mashreq Gas Pipeline (AGP) was intended to run 1,200 kilometers through Egypt, Jordan, Syria and end in Turkey. Egypt was to provide gas to Jordan and an off-shoot pipeline of the AGP from Arish, Egypt to Ashkelon, Israel. What gas Jordan did not consume would be piped to Syria, where Syria would then add its gas into the mix – with an off-shoot pipeline to Tripoli, Lebanon – and export gas onto Turkey, whether for

Turkish consumption or to be transported onto gas-hungry Europe.

While the AGP had delays and was supposed to be finished by 2007, the pipeline had reached the last leg, from Aleppo, Syria, to Kilis, Turkey, slated for completion by the end of 2011. But the Egyptians took to the streets, President Hosni Mubarak was overthrown, and the AGP came under sustained attacks in Egypt's Sinai Peninsula with 14 acts of sabotage and attempted attacks throughout the year and well into 2012.

Egypt's gas supplies plummeted from 220

million cubic feet (mcf) per day in 2010 to 80 mcf in 2011 to negligible levels in 2012, when the pipeline was shutdown. It has cost the Israelis at least \$4 billion to source gas from elsewhere, as well as having lost the highly controversial, preferential pricing deal that Mubarak and his cronies had inked with Tel Aviv in 2005, at anywhere from \$0.70-\$1.50 per million British thermal units (BTU), according to Egyptian media, to \$2-\$4 per million BTU, according to Israeli media – both well below the global average of \$6-7.

Jordan also had a special price arrangement with Cairo of \$3 per million BTU, but with no Egyptian gas through the pipeline, Amman has lost access to 20-25% of its gas needs, prompting the government to raise electricity prices by 9% in early 2012, which it later back-tracked on due to public outcry (Amman is keen to avoid any further reasons for the populace to protest). To make up for the short fall, Jordan has had to switch to heavy fuel oil and diesel, adding on a projected \$2.4 billion to the cash-strapped kingdom's energy bill.

Syria has been marginally affected as well, having received around 50 million mcf a day of Egyptian gas – or 8% of the coun-



try's annual needs – prior to the shutdown. Egypt turning off the pipeline has shown a chronic weakness of the AGP: the pipeline was simply over-dependent on Egyptian gas. If Egypt stopped piping gas, then Syrian gas could be piped in the opposite direction to make up for the short-fall in Jordan, but despite Syria having some 8.5 trillion cubic feet (tcf) of gas reserves, domestic and projected consumption is higher than production, meaning Syria is, and will remain, a net importer.

Egypt's domestic consumption has also been steadily rising – as has Jordan's. So even if the AGP had been completed, whether in 2007 or the end of 2011, the only real beneficiary was Jordan, and to a lesser degree Lebanon (while the Egyptians were financially losing out due to Mubarak's

deal-making). The AGP is a nice idea, like Egyptian President Gamal Abdel Nasser's pan-Arabist ideals of the 1950s and the attempt at an United Arab Republic, but has proved equally untenable. What could inject new life into the AGP is if gas were piped from Qatar and Iraq to Syria, as well as from Iran and Central Asia via the projected Nabucco pipeline through Turkey.

Egypt turning off the pipeline has shown a chronic weakness of the AGP: the pipeline was simply over-dependent on Egyptian gas.

Syria's “Four Seas Strategy”

Syria could be one of the region's key energy transit hubs with some **6,300 kilometers of oil and gas pipelines**. But geopolitical events have thwarted Syria's “four seas strategy” which was aimed, when it was announced in 2009, at making the country a transit hub for hydrocarbons between the Persian Gulf, the Black Sea, and the Caspian and Mediterranean seas.

Instability in Iraq has been one of the biggest setbacks to the plan – the pipeline going from **Kirkuk in Iraq to Banias on the Syrian coast was still not back online after the U.S. bombed it during the 2003 invasion of Iraq**. Given ongoing instability in Iraq and now in Syria, it is unknown when the pipeline will be operational again, as well as when work will start on two new pipelines: one carrying 1.5 million barrels per day (bpd) of heavy crude oil from Iraq to Syria; and a smaller pipeline with a capacity of 1.25 million bpd of light crude.

Instability has also delayed the roll out **of a gas pipeline from the Akass region in the**

west of Iraq, which is only 50 kilometers from the Syrian border that could provide up to 30 million cubic meters of gas a day and feed into the AGP. The export of Persian Gulf gas, particularly from Qatar, which has the third largest gas reserves in the world, is also dependent on a stable Iraq for the relevant pipeline infrastructure to be developed.

The viability of such connections and the “four seas strategy” will equally hinge on stability returning to Syria and for the AGP to be finished, which had reached the last stage of completion between Aleppo and Kilis, Turkey, before the uprising broke out in March 2011.

What state Syria's oil and gas infrastructure will be in following the end of hostilities will be another factor to consider with the EU having slapped sanctions on Syria in 2011 that resulted in the country losing 94% of its oil exports and prompting oil production to drop by up to 30-35% to 260,000 bpd. Rebels also target infrastructure to debilitate further the regime.

The Turkish Connection

"If a pipeline comes from Iraq or Qatar there would be a principle pipeline, and a viable network," said Ziad Ayoub Arbahe, an energy consultant in Damascus. However, piping gas from the east would require greater stability in Iraq, as well as of course in Syria now. The ongoing uprising in Syria caused the final leg of the AGP to be put on hold until the situation calms down. Given stability and willing investors in both Syria and Iraq, Damascus would stand to gain as a major transit hub. As Naeem Danhash, Project Director of the Euro-Arab Mashreq Gas Co-operation Center (EAMGCC) in Damascus explained: "the medium- to long-term prospects for Syria to become a gas hub are excellent."

Turkey also has great prospects if regional geopolitics allowed for the stability needed for pipeline investment, given the country's strategic position at the crossroads between the energy-rich East and the energy-hungry West.

The most audacious plan came following a meeting of five companies in 2002 (OMV of Austria, MOL Group of Hungary, Bulgargaz of Bulgaria, Transgaz of Romania and BOTAŞ of Turkey) to establish a pipeline to transport Middle Eastern and Central Asian gas some 3,000 kilometers via Turkey to Baumgarten in Austria. After the five companies met, the executives attended a performance of Verdi's Nabucco at the Vienna Opera House, and the name for the pipeline was coined: Nabucco. By 2009, deals had been inked and pipes were to be laid in 2010 with gas to flow by 2013.

Back then, Nabucco was big news and hailed as the EU's future gas lifeline after Russia caused serious alarm about energy security when Moscow stopped exports to Europe via Ukraine in the icy winter of January 2009. The impetus was there, but the Nabucco pipeline has not materialized due to ongoing financial issues – costs were projected at \$10.25 billion

program. This resulted in the EU stopping all imports of Iranian oil – some 4-5% of the EU's oil imports – as well as gas. As Dr. Tugce Varol, a Scientific Advisor at the 21st Century Turkish Institute in Ankara, stated bluntly: "Nabucco is dead."

The irony is that the EU has repeatedly denounced the stranglehold Russia has over Europe's natural gas imports, accounting for 34.2% of total European imports, and that Nabucco was meant to loosen Moscow's grip. This is a similar story in Turkey, also not keen to have to rely on Russian gas, yet Ankara – for political reasons – has commissioned the Russians to build a \$20 billion nuclear power plant in which Russia will retain 51% shares, as well as having all the technical know-how. Turkey was also pressured by Washington to lower its oil imports from neighboring Iran (about 30% of Turkish demand) by a tenth in March 2012. And then there is a serious possibility of a falling out between Ankara and Tehran over the explosive situation in Syria. In the end, Turkey needs pipelines to be constructed on its soil.

Varol concluded that: "an energy crisis is coming.

Turkey will need more than 60 billion cubic meters (bcm) of natural gas in the next five to 10 years. There are contracts for 52 bcm, and some liquefied natural gas (LNG) contracts, but there is a need to find new energy. Turkey gets 10 bcm gas from Iran but if that stops, then Turkey is in a catastrophic situation."

A poem by Hala Alyan

Hamra

Shaken, the wreckage is paper,
bright feathers, canvas, flags: shredded.
Don the urban its color, corbeau,
corbeau, bedroom eyes.
I have been carried, bare feet dangling,
lime bra strap flashed, then hidden. Pulse, pulse.
The night is the lighting,
pale siphoned for some ferocity,
thunder. In the parking lot,
in the bar, corner of sky:
your eye is the shabbiest cathedral.
Even God stitches, black letters graffitied
against the concrete walls. Men, guns.
There is a heart, here, red and puckered
beneath iron-bone. There is glint,
that former, tired decade.
Like children: we cartwheeled on the grass,
drank tumblers of seawater with moon.
We sang.

Read Farah Aridi's artist profile of Hala Alyan:
www.revolve-magazine.com

but recent forecasts estimate it could cost over \$25 billion – and the realization that the project is only commercially viable if there is access to the world's second largest gas reserves for the Nabucco mix. That possibility is now impossible, as the EU, following the U.S. lead, recently smacked sanctions on Iran to pressure the country to abort its alleged nuclear weapons

The Russian Play

With Nabucco dead in the water, a new project is to be fast-tracked, the TransAnatolian Pipeline (TANAP), announced in November 2011 at the 3rd Black Sea Energy and Economic Forum in Istanbul, and a memorandum of understanding was signed between Ankara and Baku to establish a consortium to build and operate the pipeline, which is to run from Azerbaijan through Georgia to Turkey and onto Europe. Despite claims that TANAP will eventually be realized, it is still years off and Azeri gas alone will not

be sufficient to cater to Turkish and European needs or have the capacity to provide enough gas for the countries connected via the Arab Gas Pipeline.

Iranian gas is needed, but the West's hypocritical stance over Tehran's nuclear program (Israel can have an undeclared nuclear arsenal but Iran cannot develop nuclear energy for civilian purposes like the Emirates) has squandered any possibility of accessing such needed energy. The winner from

Europe's strategic mistake of blindly following Washington and Tel Aviv's stance on Iran is Russia, which will be able to bolster its gas export capabilities to Europe, consolidate its power in Central Asia, and have a firm friend in energy-starved Turkey. Moscow's assertiveness could sabotage another pipeline that would give Europe indirect access to Central Asian gas – the Trans-Caspian Pipeline between Turkmenistan and Azerbaijan – to give preference to the Russian-Italian backed South Stream pipeline.

Given stability and willing investors in both Syria and Iraq, Damascus would stand to gain as a major transit hub.

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The Israel-Greece-Cyprus Axis

Natural gas is proving to be a useful foreign policy tool in the eastern Mediterranean. All countries are waiting and hoping for more stability in Egypt and Syria for the gas to start flowing again, and for the AGP to be completed so that gas can be piped in from Turkey.

The politically-motivated preferential gas deal between Egypt and Israel that ended in the wake of the ouster of Hosni Mubarak has been a setback for Israel, costing an

extra \$4 billion a year and enabling Cairo to make more commercially viable demands of the Israelis for the gas to start flowing again.

However, the discovery in 2010 of the underwater natural gas field – the “Leviathan” – off of Israel's northern coast provided some leverage. The Leviathan could offer enough for domestic consumption and potentially for export. Lebanon shares the gas field with its southern neighbor but politicians just bicker over which ministry

will get the spoils even before prospecting has begun.

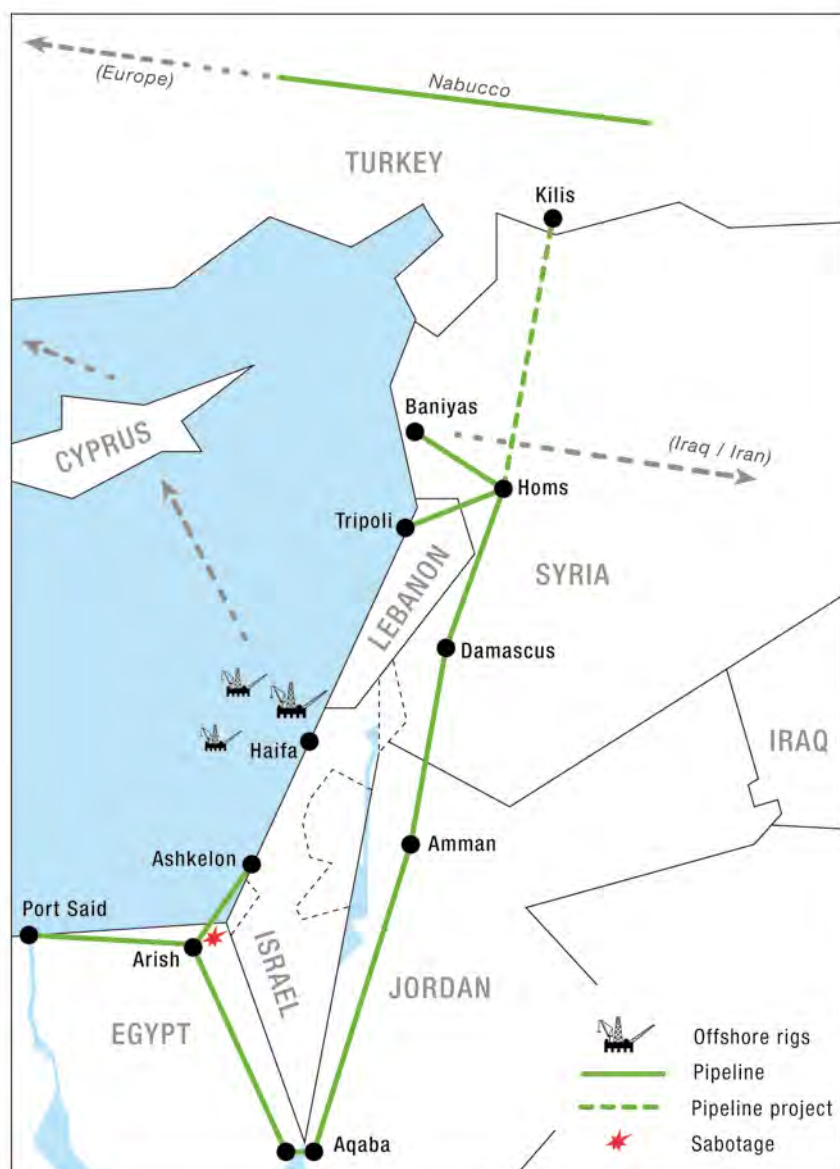
In 2011, the Israeli gas find was used as a bargaining chip with Greece to prevent a second freedom flotilla from setting sail to attempt breaking the blockade of the Gaza Strip. As confirmed by a Greek consular official in Canada, Athens put its economic interests at the fore in cooperating with Israel to prevent the flotilla from departing from Greek ports. The incentive for cash-strapped Greece was future gas and electricity sharing deals with Israel.

Greece currently consumes 3.75 billion cubic metres (bcm) of gas per year, which is slated to rise to 9.3 bcm by 2020. Not wishing to be reliant on Russian gas via the South Stream pipeline, Athens was scouting for other sources – Israel and Cyprus' gas finds seemed ideal to offset forecasted demand.

In March 2012 the energy ministers of Greece, Israel and Cyprus agreed to bolster cooperation to exploit natural gas deposits in the eastern Mediterranean. The long-term plan is for gas exports to go from Israel and Cyprus to Greece, but the laying of pipe on the sea bed is slated to take at least eight years, meaning sharing of gas-produced electricity via undersea cables is more probable in the short-term.

“At the moment two major natural gas fields have been identified [...] both of them will suffice for Israel's needs for 50 to 60, some say 70, years,” *Associated Press* reported Israel's Energy Minister Uzi Landau as saying in Athens. “In the Middle East that is now caught in a tremendous earthquake, stretching from the Atlantic to the Persian Gulf and beyond, the axis of Greece, Cyprus and Israel will provide an anchor of stability.”

The politics of pipelines and the changes underway across the region are going to cause many challenges in the years ahead until some of these competing gas projects become more than just pipe dreams. ☼



VIEWS



A Bharat Coking Coal Limited (BCCL) worker. Most miners were farmers previously, but as the mining industry took over their land they had to search for other jobs. In Jharia, coal mining is one of the only options for employment.



The Coal Fires of Jharia

Isabell Zipfel

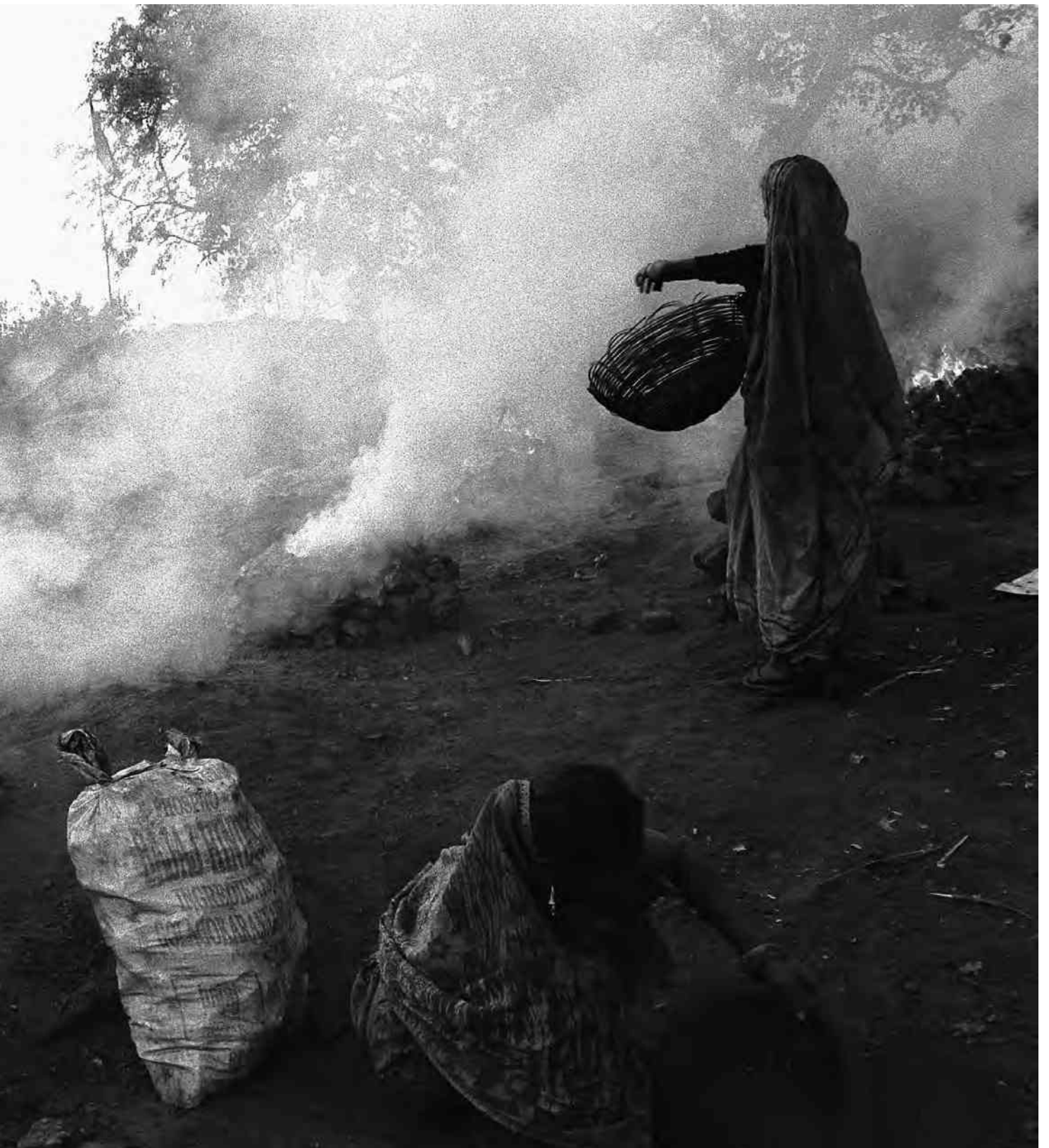
In Jharia, in the Jharkhand state of eastern India, coal mining and scavenging plays an overwhelming role in the lives of 600,000 inhabitants. Opened in 1896, the Jharia underground mines were nationalized in 1973 and operated by Bharat Coking Coal Limited (BCCL) which decided to opt for more profitable opencast mining. Extracted quantities of coal are significantly higher than in deep mining and cost less. They are also mostly illegally, since in 97% of cases no licences are granted. Apart from the toxic health hazards, instead of putting out the fires, the massive resettlement project – the Jharia Action Plan (JAP) – is moving inhabitants to a new town called Belgaria where there are no schools, no shops, and no jobs. Many decide to stay in Jharia, despite the fires and fumes, to mine coal.

Isabell Zipfel grew up in Rome and now lives in Berlin. Before embarking on her career as a photographer, she translated screenplays and earned a Master's degree in German studies and Italian literature. She visited Jharia in 2011.

www.isabell-zipfel.photoshelter.com



Jharia is one of the largest coal mining areas in India, in all of Asia, and around the world. Once abundant woodlands, Jharia is now an apocalyptic landscape of contaminated soil, water and air. Coal seam fires spew around 1.4 billion tons of carbon dioxide a year into the atmosphere making India the fourth largest global producer of greenhouse gases.



Female scavengers stand next to small piles of coal burning from an open-cast mine in the Jharia district. Afterwards they sell the coal.

The story of Jharia is one of greed and how one of India's richest areas in minerals remains economically under-developed: open-cast mining marginalizes the poor and deepens social inequality – only mega cities like Delhi, Bangalore and Mumbai profit. Meanwhile the fires continue and the poor are often forced from their land.



Young coal picker in Bokalphari. Many children work in the coal industry as coal pickers to earn money for their families. The children do not go to school.



A coal picker with her child. She and her husband work in an illegal coal shaft and live nearby the toxic fumes of the mining.



Coal pickers carry baskets of coal illegally gathered from an open-cast mine. Police patrol the area, so they have to pay them an extra fee to continue scavenging.



Children playing in Bokalpari village next to an open-cast mine. Houses are destroyed by BCCL forcing the inhabitants to move since BCCL needs more land to mine more coal.

Around 600,000 people live in Jharia where coal is mined in villages, next to houses, on doorsteps, in the streets, on railway lines, in the old train station. The chairman of the railways filed a complaint against illegal mining under the tracks, but the warning of causing potential accidents went unaddressed.



On the streets, along the railway lines, in what was the station of Jharia, coal is mined.



A mother and her child stay warm next to small piles of burning coal illegally scavenged near an open-cast mine in Jharia. Most of the population are now illegal coal scavengers.



A girl dances near plumes of smoke from fires of coal scavenged by her family in Bokalpari village. She is also a young coal picker and never went to school.

Mined area should be filled with sand and water afterwards, so as to be cultivated again. For cost reasons this never happens, which leads to coal seams coming into contact with oxygen and catching fire – India has the most coal blazes worldwide: BCCL representatives estimate there are 67 fires in Jharia alone.



Laundry of the inhabitants of Bokalpari. The village is next to an open-cast mine. Smoke and toxic fumes make it hard to breathe.

Despite the flames. In spite of the perpetual grey veil that shrouds the town. In spite of the air pollution, which makes breathing unbearable. In spite of the coal dust, which settles like a second skin on the body, many people stay in Jharia and continue to mine.



Illegal coal pickers scavenge from an open-cast mine in the Jharia district of Jharkhand. Everyday they risk their lives by doing this work since shafts often collapse.



Smoke rises from an underground coal fires that crack the earth near an open-cast mine in the eastern Indian state of Jharkhand.

CITIES



Tallinn

FREE PUBLIC TRANSPORT

“Free public transport in Tallinn will start on January 1, 2013, and this is a brave step towards making Tallinn a green capital in the future.”

— Mr. Savisaar, Mayor of Tallinn

With more people moving to cities and more people getting cars, cities around the world are confronted with exponential traffic and pollution. The promotion and implementation of more sustainable modes of transport are pressing issues that policy-makers and municipalities must address. How can they possibly counter the independence that comes with having a car?

From January 2013, Tallinn will be the first European capital to offer free public transport to its citizens. According to *The Baltic Times* (August 23, 2012), with the new ticketing system the City of Tallinn will lose approximately 14 million euros in uncollected ticket revenues in 2013. But then the current system of ticket sales is seen as overpriced anyhow and wasteful for the environment.

Street network in Tallinn: 2,012 km

Roadways: 1,014km

Sidewalks: 923 km

Bicycle paths: 210 km

Source: Municipal Engineering Services Department



Estonia joined the **European Union in 2004**,
signed the **Lisbon Treaty in 2007**,
and adopted the **euro in 2011**.

**Estonia is the only euro member
with a budget surplus.**

The long-term environmental benefits to having less cars circulating are evident while citizens will also enjoy cleaner air and less noise pollution. Although several small and medium-size cities have already converted to the free-fare public transport system, Tallinn is definitely setting an example and opening the way for other European capitals to follow.

Is free public transport enough of an incentive for commuters to shift to public transport? In Tallinn, paper tickets will be abolished and regardless of a person's place of residence, anyone under 19 will be allowed to ride for free. Users of the public transport who are not residents of Tallinn will have to buy e-tickets or electronic cards.

MESSAGE FROM THE MAYOR

Introducing free public transport in the capital of Estonia will grant equal mobility opportunities to all social strata. To many car drivers, free public transport will be a major incentive to switch to public transport, thus reducing pollution and noise while improving living standards.

75% of Tallinn residents voted for free public transport in our local referendum between March 19-25, 2012. We have no need to discuss if we need free public transport, but rather when free public transport will reach the surrounding areas of Harju County and to the rest of Estonia. The people of Tallinn have said their word and I am sure that the entire nation would do the same if they are asked about it.

Free public transport in Tallinn will start on January 1, 2013, and this is a brave step towards making Tallinn a green capital in the future.

Mr. Edgar Savisaar
Mayor of Tallinn

Tallinn has close to 175,000 motor vehicles:

145,867 cars

22,893 trucks

4,437 motorcycles

366 scooters

1,302 buses

Source: Statistics Estonia, 2012

**Estonia is 34th among 187 countries in
the UN Human Development Index** that
measures education levels, life span and
economic development.

Some other European cities already providing free public transport

Several cities around Europe and the world have implemented a zero-fare public transport system. Here's some of them:



Hasselt, Belgium

The city of Hasselt is the most notable success story of free public transport implementation. The Belgian city of 73,000 inhabitants has implemented fare-free transportation in 1997 and by 2006 its public transport use has raised 13 times.

Gilbraltar (2011)

Manosque (2010)

Libourne (2010)

Castres (2008)

Châteauroux (2001)

Prague (in times of flooding and pollution peaks)

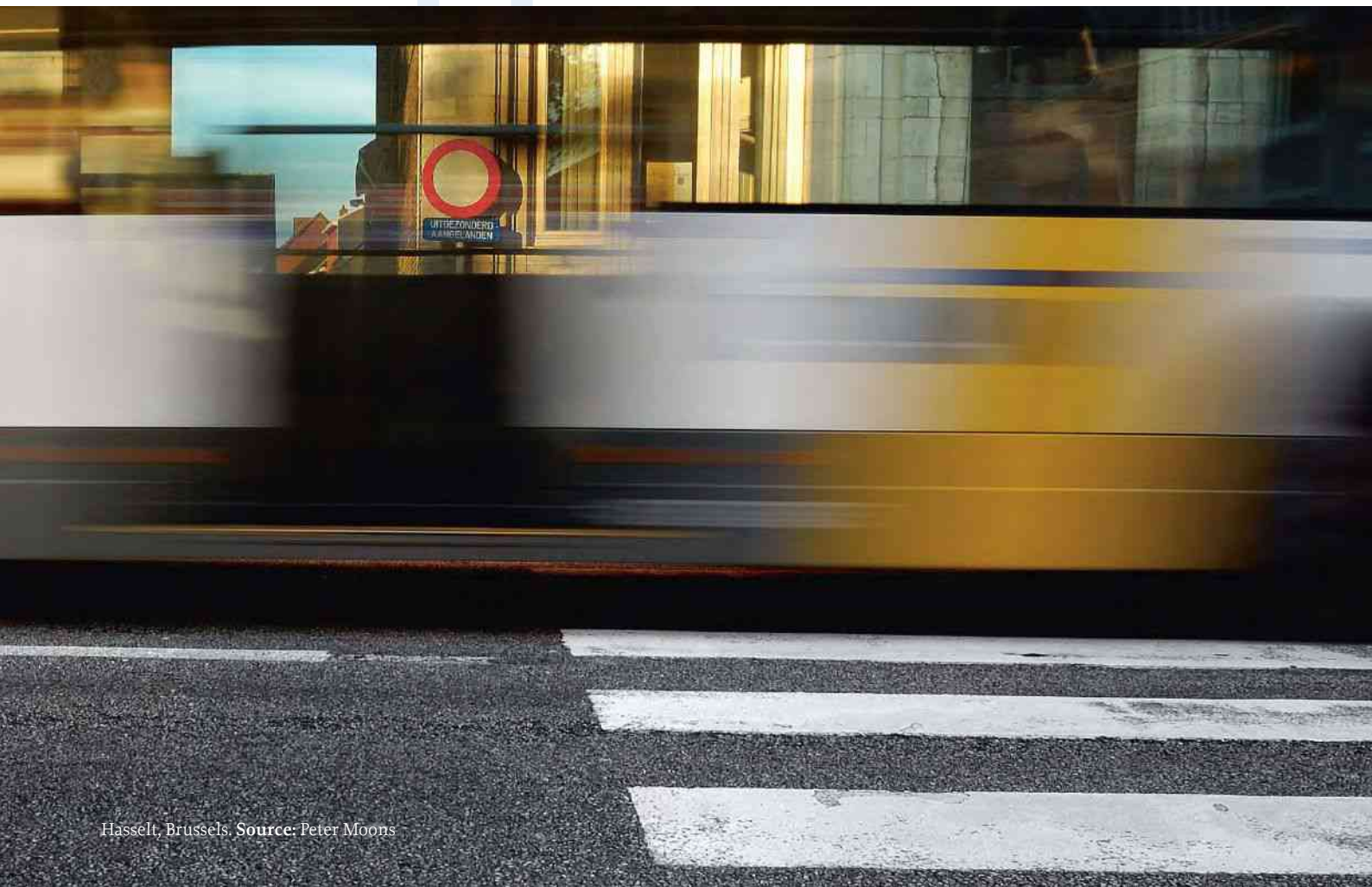
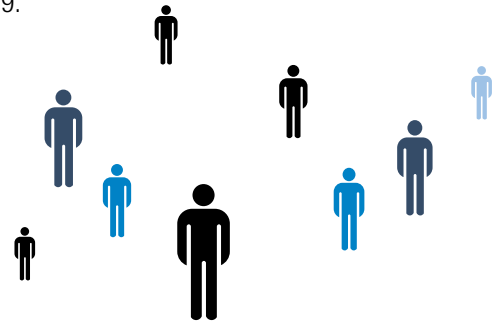
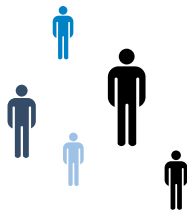
...among others

Colomiers, France

The first area of France to offer zero-fare public transport which is still in operation at present. Since 1971 its 30,000 inhabitants have been enjoying free bus rides.

Aubagne, France

The urban district of Pays d'Aubagne et de l'Etoile near Marseille with 100,000 residents started free public transport in 2009.





Q&A: Jüri Ratas

Revolve talks to the Vice-President of the Parliament of Estonia (the *Riigikogu*) and former Mayor of Tallinn about the conception and development of the European Green Capital Award that is awarded every year since 2010 to a different city by the European Commission to promote the efforts that local authorities play in improving the environment.

Where did the concept of the Green Capital Award come from?

The idea for the European Green Capital Award competition was born in Tallinn City Government as a brainchild of scientists, environment specialists and cultural figures on January 30, 2006. The purpose was to make our urban environment healthier, friendlier, and more cultured. By spring 2006, the preparation work for the Green Capital project had advanced to a stage where mayors of European capitals were invited to take part in the Day of Tallinn on May 15 to sign a proposal to the European Commission. This is how the mayors of 17 European cities (Madrid, Berlin, Prague, Helsinki, Riga, Vilnius, Vienna, and others) came to sign a memorandum proposing to launch the European Green Capital Award. Nearly 40 European mayors, including 21 from EU counties, then supported the initiative.

How is it being implemented today across Europe?

The document establishing the European Green Capital Award was signed in Brussels on May 22, 2008. The first winners were announced on February 23, 2009: Stockholm won in 2010 and Hamburg in 2011. A city deserving this title improves its competitiveness among other cities; it becomes more attractive to investors, tourists, city planners, landscapers and representatives of other fields of life, which gives a new impulse to activating further economic development and improving the living environment. By the second competition for the European Green Capital



Kadriorg Park, Tallinn. **Source:** Priit Halberg

title it was the Southern European cities that showed the best results. A total of 17 candidate cities for the 2012 and 2013 titles. Only Western European cities made it to the final: Barcelona, Malmö, Nantes, Nuremberg, Reykjavik and Vitoria-Gasteiz. The European Commissioner for the Environment, Janez Potočnik, declared the winners in the magnificent Stockholm City Government building on October 21, 2010. The winners were Vitoria-Gasteiz in Spain for 2012 and Nantes in France for 2013. The 2014 European Green Capital Award has also been nominated now – Copenhagen.

What is Tallinn doing to contribute to this vision?

The paramount precondition for achieving sustainability is the preservation of the ecological balance with Estonia's nature. Our capital is blessed with a great surrounding natural environment. Tallinn has over 60 parks and many

historical gardens that already existed in the Middle Ages as places where city folk could meet and engage in various activities. We also have a unique bird reserve in Tallinn. There are three landscape protection areas and three Natura 2000 areas within the city. Lanes for public transport only have been created in the city center and Tallinn intends to make public transport free of charge in 2013. This will concern buses, trams and trolley-buses. Tallinn's value as a seaside city is being increasingly explored. Looking a bit further into the future, **Estonia will celebrate its 100th anniversary in 2018, the same year as the Kadriorg Park will celebrate its 300th anniversary in the summer. Could it be the year when the Estonian capital Tallinn will hold the title of the European Green Capital?**

Read the full interview:
www.revolve-magazine.com



Located on the Baltic Sea, in north-eastern Europe, the capital of Estonia looks across the Gulf of Finland at Helsinki. Tallinn has developed into a thriving port city as well as an emerging industrial and commercial hub.

Tallinn houses a significant amount of technology start-ups and more established companies. Ericsson has placed its production and innovation on 4G technology here and Skype is perhaps the most renowned and successful start-up from Tallinn.

Over 150 companies operate in the Tallinn's Research Park Tehnopol – most are active in ICT, electronics, mechanics, biotechnology. Five research and development centers also operate there making Tehnopol a veritable incubator for innovation.

The Old Town of Tallinn is listed as a UNESCO World Heritage site. In 2011, Tallinn was awarded the European Capital for Culture. Source: Ain Avik

INHABITANTS: 416,000

POPULATION DENSITY: 2,618 PEOPLE/KM²

TALLINN HAS 40 KM² OF PARKS AND FORESTS

CITY AREA: 159 KM²



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Said Mouline,
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Khalid Benhamou,
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URBAN VERTICAL FARMING

Writer: Edouard Cabay, founder of *Appareil*, is an architect registered at the College of Architects of Catalonia. He teaches architectural design at the Architectural Association School of Architecture in London, at the Ecole Spéciale d'Architecture in Paris, and digital fabrication at the Institute of Advanced Architecture in Catalonia.

The number of buildings in Europe exceeds the current and future needs of its population. Sometimes decades or centuries old, this heritage includes countless unoccupied buildings, which no longer meet the requirements of today's society.

Amongst the three largest emitters of carbon dioxide, along with meat production and transportation, the building industry is increasingly confronted with environmental challenges.

Architects must, therefore, rethink their practice in order to develop new designs for a more sustainable future.

Different in scale, use and form, the projects, **Agriculture 2.0** and **Retina rooftop**, by the new architect studio, *Appareil*, present here a glimpse of the future of urban farming and sustainable housing.







Agriculture 2.0

Agriculture 2.0 is a speculative project investigating the under-explored domain of urban farming to bring agriculture into the city. Rather than offer a ready-made technical solution, the project questions the unsustainable relationship between the city and large-scale production of consumer goods in today's world.

The urban environment is highly dependent on food supply, requiring the development of an extensive transport network, which causes environmental damage at

different levels. The project proposes to integrate agricultural production sites in cities that need to be adapted to high population density levels. Instead of using horizontal surfaces, these urban farms extend vertically.

Research into hydroponic systems has shown that plants can grow in non-static environments in order to find the adequate climatic conditions. To provide optimal conditions of illumination, air and water, the infrastructure is a vertical assembly of

closed incubators dynamically positioned along a series of vertical helixes. The inner part of the incubator is planted and positioned at the top of the structure and travels down along the axis at a speed of 3cm/hour until it reaches ground level after 45 days when the plant is fully grown.

The incubator is a polyester shell covered with a Teflon-based translucent membrane that collects rainwater for irrigation. Sunlight infiltration is controlled through the membrane so that constant tempera-



tures are maintained and direct sunlight is avoided. Minimizing the density at the higher level of the tower to enhance its porosity, the incubator expands as the plant grows and travels downward, eventually doubling in size.

The structure is designed to meet food demands in an urban residential neighborhood. On average, one individual consumes 0.32 kilograms of vegetables per day, which requires a production surface of 8.22 m². A 200-meter tower with a

30x30-meter base can produce 35 kg of vegetables per day – enough to feed 420 people which, in an average residential urban area in Europe, covers 1.27 km².

Two of the several parameters that were considered to adapt the design to specific locations were the number of helixes and the size of the incubator. The distance along the vertical axis between the incubators was also chosen to maximize production and to provide the optimal local environments for the plant growth. Each

context therefore requires the design of a location-specific tower.

Agriculture 2.0 is not a building, but an algorithmic model in which the needs of the city dictate the morphology of a vertically fragmented agricultural field. Any project would need to undergo a thorough analysis of the context and an evaluation of the best organization depending on population density, consumer patterns, commercial activity and specific crop requirements, which would result in custom-made infrastructure.

While the geometry of this wooden slat system is complex, the Retina rooftop reduces dependence on artificial lighting, mechanical cooling and heating.

Retina

The design process of the **Retina Project** is inspired by the function of the eye. Understanding the human body as a machine, and its organs as parts of a complex mechanism, is essential. Architecture is no different. We chose the mechanical performance of the eye and the relationship between the iris and the retina as a conceptual model for the design of a residential space.

At the rear of its spherical form, the retina is the surface that reconstructs images before sending them to the brain. The sensitivity of the surface means that excessive light would

damage it, while insufficient light would make it incapable of mapping the image. The retina cannot function independently and needs the constant cooperation of the iris to control its aperture and allow the correct amount of light. Learning from nature, in an act of biomimicry, we identify the living space as the retina and iris by using wooden slats on different angles to allow in light while inhibiting light from other angles.

Located in the suburbs of the Belgian capital Brussels, the **Retina Project** is a small extension on the rooftop of a single fam-

ily house with nearby woods. The 1970s building consists of well-insulated brick surfaces. The extension differentiates itself from the original structure through the use of contemporary materials, structure, spatial organization, energy production and water management.

The outer layer of the building is composed of 432 vertical wooden blades. This screen allows light to filter into the space, offers views to the surroundings, but at the same time protects the structure from heat, outsiders looking in, as well as from excessive light and magnetic waves emanating from nearby communication antennas.

While the geometry of this wooden slat system is complex, the **Retina rooftop** reduces dependence on artificial lighting, mechanical cooling and heating. The new structure, made from natural and renewable materials and fuelled by solar energy, is energetically autonomous. The relation to the existing building permits the cohabitation of two inhabitable systems, enhancing the energetic performance of buildings. In an age when all construction should strive towards zero emissions too many buildings are still being designed with a passive approach, insulating the structure from the surrounding environment, whereas **Retina rooftops** provide open views onto the world.





The construction industry is being transformed by the introduction of numerically controlled manufacturing. Steel structures are now welded by robots. Accurate three-dimensional objects can be “printed” on various materials such as resin or ceramics. These new technologies fundamentally affect architecture. One main challenge is the relationship between the architect, who designs, and the builder, who implements the design. The required knowledge of technological processes means that construction influences the design in a much earlier stage of the project, and requires the architect to be fluent in these technologies and present throughout the project.

What connects the **Urban Vertical Farming** and **Retina** projects is the use of Computer Aided Design and Computer Aided Manufacturing (CAD-CAM), which facilitates the relationship between architectural design, the construction process and the surrounding environment. The use of digital

processes allows for more accurate calculations of structural design and construction of lighter, more energy efficient buildings. Thermal and light performances are calculated and building façades can then be determined more specifically in relation to the urban fabric or adjacent woods.

The building industry is a key contributor to global warming, and as architecture plays an important role in the industry, it needs to explore concepts that can enrich global efforts to create a more sustainable future. Buildings are essential elements of our environment and need to be approached with the intention of readapting what already exists to overcome future redundancies. Requirements are becoming increasingly complex and proposals need to be developed following more substantial and enduring considerations. Architects and builders must coordinate the different interests into sustainable solutions in conjunction with exploring and using new developments in technology.

Architects and builders must coordinate the different interests into sustainable solutions in conjunction with exploring and using new developments in technology.

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Appareil is a new architectural studio that uses advanced design technologies to create site-specific solutions to complex design briefs, while paying particular attention to local contexts and environmental constraints.

Appareil bases its architectural production around the concept of assembling parts for the performance of a more advanced task than the original pieces could have carried out individually. Its use is mainly related to technology, but appears in numerous disciplines: in French, *appareil* can refer to the pattern in which stones are assembled in a masonry wall; it is the device used to take photos; it designates a group of organs that metabolize substances in the human body...

Appareil believes that wide cooperation and work in multi-disciplinary contexts can maximize potential. The design and construction of buildings is a complex process, which requires broad understanding and expertise. The projects featured here were elaborated in close cooperation with biologists, botanists, material consultants, structural engineers, builders, sociologists, environment specialists and photographers. Such diverse project teams create new synergies in which the architect fulfills a central role of gathering data and findings to generate a project concept.



Agriculture 2.0 Project Team:

Edouard Cabay, Luis Ricardo Borunda, Marta Banach, Pavel Aguilar

Retina Project Team:

Edouard Cabay, Alejandro Nunez, Jordi Portell

Appareil Collaborators:

Eco Intelligent Growth, environmental design consultant
Bures Innova, biology consultant
Sweco, engineering
Tecmolde, advanced manufacturing experts
Bykolat, wooden constructive solutions
Anna Alejo, architectural photographer

COLOMBIA

The Forgotten War



Army soldier on patrol in former FARC territory. January 2011, Santa Marta mountains, Northern Colombia.

Among today's numerous internal armed conflicts, few are as little-known as the one in Colombia. Yet it is among the world's oldest. The main insurgency — of a dozen to emerge in Colombia in the second half of the last century — is the Revolutionary Armed Forces of Colombia (a.k.a. FARC). Debuting as a peasant insurgency in 1964, its roots go back a quarter century to land conflicts on an agricultural frontier.

Writer: James Jones. Former UN advisor for the Andes (Colombia, Peru, Bolivia) on rural development as a drug-control tool, James Jones is a social scientist (Ph.D. Social Anthropology, M.S. Economics) with over 40-years of experience in 19 countries of Latin America and the Caribbean. He was awarded a two-year Global Security Grant from the MacArthur Foundation to study the effect of U.S. aid on (1) the armed conflict and (2) drug control.

Photographer: Laura Beltrán Villamizar, Photo and Art editor at *Revolve*.

Governments have negotiated with these insurgencies since the mid-1980s, reaching settlements with all but FARC and the Army of National Liberation (ELN), founded in 1964 by Cuban-trained urban intellectuals. Illegal narcotics today partly fuels but does not explain the insurgencies. Right-wing paramilitaries and criminal bands have joined the weakened

yet resilient FARC and the smaller ELN, forming a hash of shifting alliances. All parties, including public security forces, egregiously violate human rights. Civilians are in the crossfire of three commingling wars — on insurgency, on drugs (led by the U. S.), and today on “terrorism.” The wars spill across national borders, threatening regional stability.



Coffee plantation at the Coffee Axis. Uribe's home department and starting point of his political career. Key location for land grabbing and paramilitarism in the 'Afro-Colombian and Mestizo communities' in the Lower Atrato region of Chocó. January 2011, Antioquia, Colombia.

A Land of Paradox

Known largely for its excellent coffee, for artists like Nobel novelist Gabriel García Márquez, or for the violent genius of world-class drug trafficker Pablo Escobar, Colombia has enormous human talent. It is a land of contrast, contradiction, and paradox — and a land of mirages, a land where things are often not what they seem. Varied topography and high biodiversity bespeak a natural richness: Caribbean and Pacific littorals rise gently to Andean uplands, where cold, windy puna descends through cloud forest to inter-montane valleys, or plunges into deep canyons in the southwest. To the east sprawl the arid Orinoco plains, to the south river-laced Amazonian rainforest. Government is absent to weakly-present over most of this myriad vastness.

Inhabiting a milieu of rigid social classes, the people are as varied as the fractured land, whose richness hides a somber reality. Less than 3% of a population of 46 million is indigenous, with Afro-Colombians from 10-25%. Living in remote areas, these groups have low human-development

indicators, figure disproportionately among conflict victims, and today suffer the invasion of a growing resource extraction. Half of the country — 60% of rural areas — endures poverty, with some of Latin America's worst just outside the walls of the colonial port city of Cartagena, site of the Sixth Summit of the Americas in April 2012.

Colombia is by income the world's fourth most unequal country — in one of the earth's most unequal regions. Land distribution is highly skewed; Colombia has

never had a viable land reform, or a reliable cadaster. Informality, corruption, straw ownership, tax evasion, and violence mark land transactions. Less than 1% of landowners control 60% of farmland — the region's highest concentration. Drug mafias and rightwing paramilitaries today control 35% of prime farmland. Land inequality has long linked to the country's conflict, which has internally displaced some six million people — highest in the world. Many settled on urban fringes; thousands more fled to Ecuador and Venezuela.

Colombian soldiers, pressed for results and offered benefits, had since 2002 lured up to 3,000 young civilians to secluded spots under the pretense of employment, then killed them to present their bodies as felled rebels.



Capital of drug Mafiosi in the 80's, city where former president Uribe held office as mayor in 1982 and as governor of Antioquia between 1995 and 1997. February 2011, City of Medellín, capital of Antioquia department, Colombia.

A History of Violence

Colombia nestles in a violent region today. According to the U.N., eight of the world's 10 most violent countries are in Latin America or the Caribbean. While some of the violence is drug-related: violence, poverty, social exclusion, and weak institutions, including rule of law, also figure. Colombian violence has historically been political, and with fitful surges has existed since independence (1819). Two political parties emerged at mid-century, Conservative and Liberal. These would order partisan quarreling well into the 20th century. Nineteenth-century civil wars culminated in the Thousand Days' War (1889-1902) with 100,000 deaths — 2.5% of the population. Repression of the union movement and native peoples followed. Party conflict ignited another bloodletting called La Violencia (1946-57). Fought in rural areas by partisan-led peasants, it killed 100,000 to 200,000 people, some grotesquely tortured. The conflict formally ended with a bi-partisan power-sharing arrangement (1958 - 78). The violence did not.

The two-party "oligarchic" system has historically been part of a scheme in which geography, politics, and social class join to form "hereditary hatreds." Colombia is a poorly articulated land of regions. Local and national elites link through political clientelism, whose exclusionary character partially explains the insurgencies. Liberal dissident Jorge Gaitán, arguing in 1933 that neither traditional party met the needs of the masses, formed the National Leftist Revolutionary Union, which championed workers. Distinguishing between the "political" and the "national" country, Gaitán might have been elected president had he not been assassinated in 1948. Although the two historic parties today coexist with others, clientelism lives on, and with it the violence.

Toward the mid-1970s, Colombia entered the trade in illegal narcotics, first with marijuana, then coca and cocaine in the 1980s, and some opium poppy for heroin. The trade helped fuel the longtime violence. Global changes also stirred: as the Berlin Wall fell and the U.S. invaded Panama in 1989, the Cold War segued into the drug war, and then that into the war on terror. Meanwhile, the U.S. role in Colombia grew, one that began in the 1950s as the Cold War stalked the region, endangering the status quo and threatening U.S. national security. President John Kennedy's 1960s Alliance for Progress (Colombia was a cornerstone) was all about regional development as counterinsurgency.

After 50 years of struggle, FARC will not demobilize, or lay down its arms, without something in return.

The civil conflict accelerated in the 1980s, when both estate owners and drug mafiosi, then buying estates, organized paramilitaries to fight rebels who killed and extorted them. The military secretly aided these paramilitaries, not only to extend security, but to fight a dirty war by proxy. Use of civilians in counterinsurgency had thus evolved since the U.S. first promoted the practice in Colombia in 1959. The paramilitaries soon massacred and maimed, often in a strategy to induce fear and drain a rebel-occupied sea. Entire villages fled. First organized by region, the paramilitaries united in 1997 under the United Self-Defense Forces of Colombia (AUC). They trafficked in drugs, acquired lands through forced eviction, and engaged in corruption, often with local officials colluding.

The peasant FARC was also evolving. It entered the drug trade around 1982. Working with small coca farmers came naturally, and the trade brought mutual benefits. FARC at first protected farmers and fixed prices, and later climbed

the chain to process and commercialize some cocaine. Their main relationship to the trade was and continues to be control over the trade in coca, the raw ingredient of cocaine. This is the least profitable side of the business globally, yet one that considerably enriched the FARC.

At the same time, a quest for peace was on the rebel agenda. During President Betancur's peace process (1982-86), FARC pact a two-year ceasefire and formed a political party, the Patriotic Union (UP), which won 14 congressional and hundreds of city-council seats in 1986. Reaction to its wins was brutal: army-backed paramilitaries began to assassinate hundreds of UP candidates, followed by elected officials, including congressmen and two presidential candidates.

With bitter memories and drug and other monies derived from increasing criminal activity in a post-Cold War world, FARC decentralized and spread across Colombia in trickles in the 1980s and 1990s — a

dispersion that would later render them vulnerable. Unlike other insurgencies, FARC never enjoyed a "liberated" zone. As a mobile force, it could not defend its actual and potential social base among peasant farmers and others from brutal paramilitary reprisals. And it attacked those seen as aiding the paramilitaries. As the conflict degraded — a conflict in which 75% of atrocities are attributed to paramilitaries and the State — FARC evinced a growing unconcern for civilian welfare. It recruited by force, even children, and attacked police garrisons with imprecise homemade mortars, causing sweeping collateral damage. Civilians, estranged from all warring parties — including the State — fled.

By the mid-1990s, FARC sometimes operated as a regular army, moving columns across open country. It dealt public security forces eight major defeats from 1996 to 1998. Alarms sounded in Bogotá and Washington. The defeats coincided with the election of Andrés Pastrana as president in 1998.

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A Continuing Struggle for Peace

After winning on a peace platform, President-elect Pastrana met informally with then FARC chief Manuel Marulanda to discuss a plan. Peace was a heady prospect for war-weary civilians. Arguing that peace was a precondition to fighting drugs, then-President Pastrana wove drugs into a historic plan, as he and Marulanda had agreed. For Pastrana, drugs were a social ill; he opposed aerial herbicide spraying on poor coca farms — the thrust of U.S. anti-drug policy. Pastrana wanted rural development, and FARC agreed to reduce coca in return for development in coca zones with a rebel presence — the so-called “crop substitution” intrigued Marulanda. A U.N. pilot project began in a demilitarized zone created for talks. All was part of what Pastrana called “Plan Colombia” in late 1998.

As the war raged, paramilitaries hovered menacingly on the DMZ’s perimeter while they massacred beyond it. To no avail, Marulanda repeatedly asked Pastrana to control them. Soon after Pastrana entered office, his military announced the forthcoming creation of a U.S.-backed anti-drug battalion. Influential U.S. interests thought the peace plan, including the DMZ, would harm anti-drug efforts. After February 1999, when FARC killed three U.S. activists helping an indigenous group resist the incursion of an oil company, the dice were cast. The murder strengthened anti-peace interests, at a time when counter-narcotics were a creeping guise for counterinsurgency — politically unsavory in the U.S. after Vietnam. One year on, pressed by the U.S. and his own military, Pastrana described a “Plan Colombia” that

reversed the original strategy: drug-control was now a precondition for peace.

In a badly managed process, peace talks staggered for over three years. The conflict worsened. The Pastrana years saw the greatest growth in rightist paramilitaries, which according to the U.S. State Department were responsible for 70% of human-rights abuses. U.S. aid also grew, supplying helicopters, trainers, and intelligence. From 1998 to 2012, it totaled \$8.5 billion — 75% to military and police — and became the largest aid program outside South Asia and the Middle East.

His peace process in ruins, Pastrana ended it in February 2002, after FARC hijacked a commercial airliner and abducted a senator aboard. In the same month, AUC chief Salvatore Mancuso announced that his paramilitaries were supporting candidates in the March congressional elections, with paramilitary political power to be reflected in more than one-third of the winning seats.

Victims of forced displacement. February 2011, Northern Antioquia and southern Chocó departments, Colombia.



In May, Álvaro Uribe, a large landowner and former governor of Antioquia, won the presidential elections on a platform to defeat the FARC. An electorate that had once voted for peace through dialogue now voted for peace through war.

Uribe deftly exploited the 2001 attacks on the U.S. With U.S. help, his military waged counterinsurgency under a slogan of “democratic security.” His Defense Minister, Juan Manuel Santos, who would be elected president in 2010, led the way. Uribe’s popularity soared. He won a second four-year term in 2006 — and tried for a third, which the Constitutional Court blocked. On the battlefield, he reduced FARC numbers to about 9,000 — from 18,000 (one-third women) in 1998. Better intelligence and air power, with troop mobility and “smart” bombs, led to rebel captures, deaths, and defections. FARC returned operationally to its guerrilla origins: small units using hit-and-run tactics.

Levels of violence fell in the cities, home to Colombia’s elite, and foreign investment rose. U.S. presidents Clinton (out of office when Uribe was elected) and Obama praised Uribe; George Bush awarded him the Presidential Medal of Freedom in 2009 — the highest U.S. civilian award. Yet there was another side, one that Uribe tried to obscure using media management, semantic dodges, and legal chicane. For Uribe, Colombia had no “armed conflict” but rather a war with “terrorists” — who, he argued, were to blame for Colombia’s poverty. Uribe’s critics, including human-rights defenders, were “terrorist sympathizers.” The language resonated with Uribe backers — and made some of his critics paramilitary targets.

Counterinsurgency under Uribe is responsible for half of all of today’s internally displaced, according to the Consultancy on Human Rights and Displacement (COD-HES), which makes Colombia — with its 5.2 million victims of forced displacement — the country with the largest number of displaced persons or refugees in the world, followed by Sudan, Iraq and Afghanistan.

Shadowing the country’s economic growth is the world’s highest murder rate for union

leaders. The American Federation of Labor — Congress of Industrial Organizations (AFL-CIO) cites 3,000 killed since 1986 (195 from 2007 to mid-2010, with six convictions), and an impunity rate well over 90%. (Investigative journalists have fared little better.) Mimicking Pastrana’s peace process, Uribe initiated talks with paramilitary leaders in 2002. He even allowed them to address Colombia’s Congress in 2004. In exchange for demobilization, they sought light jail sentences and immunity from extradition to the U.S. on drug charges. When a 2005 Justice and Peace Law was crafted accordingly, human-rights groups’ outrage led the Constitutional Court to amend it. Nonetheless, some 30,000 combatants had officially demobilized by 2006. FARC noted sarcastically: “You don’t make peace with friends.”

Scandal rocked Uribe’s presidency. First came revelations that some of those who “demobilized” — 12,000 says Pastrana (the number is unknown) — were not paramilitaries. And some groups never demobilized, and today operate as criminal bands trafficking drugs and serving the same dark interests as before, but under new names. Yet other combatants demobilized, but later joined criminal bands. Twenty-some paramilitary groups remain active, and apparently with greater political power at local and national levels, and greater territorial control, than before the “demobilization.”

Strong circumstantial evidence of Uribe’s links to paramilitaries — officially sus-

pected of 150,000 murders — and their backers abound. They helped elect Uribe, and many pro-Uribe Congressmen. Since 2006, following Supreme Court investigations, more than 60 Congressmen, all Uribe supporters — including one cousin — have been jailed for paramilitary links. One analyst recalls Italy in the heyday of the Mafia, when officialdom fused seamlessly with organized crime.

When jailed paramilitary chiefs began to talk, Uribe extradited 14 of them to the U.S., allegedly to enforce silence rather than justice. And he launched an attack on Supreme Court judges. The attack used the national intelligence agency (DAS), operating under the presidency, to eavesdrop on the judges — as well as to intimidate Uribe’s critics. A former intelligence head — Uribe’s campaign manager on the Caribbean coast in 2002 — was charged in 2007, after resigning as acting consul-general in Milan, with complicity in the AUC murder of Colombian union leaders.

And very alarming was a revelation that Colombian soldiers, pressed for results and offered benefits, had since 2002 lured up to 3,000 young civilians to secluded spots under the pretense of employment, then killing them to present their bodies as felled rebels. Fewer than 2% of cases have yielded convictions. Among the charged were U.S.-trained officers.

Uribe departed in 2010 as Colombia’s most popular president, and Juan Manuel

The 5.2 million victims of forced displacement make Colombia the country with the largest number of displaced persons or refugees in the world, followed by Sudan, Iraq and Afghanistan.

Santos, his Defense Minister, succeeded him in August. Unlike Uribe, who is a wealthy but provincial landowner, the cosmopolitan Santos represents Colombia's traditional "oligarchy." As president, Uribe blended the views of 19th century rural Colombia with those of 21st century neo-liberalism and mafioso criminality. Santos has largely continued Uribe's security policies, but has veered in other ways. He has worked to mend Colombia's international relations, notably with Ecuador and Venezuela. He concedes the existence of an armed conflict. And through a new land law, he has vouched to restore lost land to conflict victims. But the challenges are formidable: 20-some land-restoration leaders have been assassinated since 2010 — the work of what Santos calls a "dark hand."

The war grinds on, with January 2012 the most violent month in eight years. In March, Bogotá asked for drones to fight FARC, whose chief 'Alfonso Cano' was killed in combat in November 2011. An aging middle-class intellectual, many saw the political Cano as the best hope for dialogue. Long-time rebel 'Timochenko,' trained in Russia and Cuba, replaced him. Timochenko announced in early 2012 that the rebels again wanted to dialogue, but soon added that talks did not mean surrender. Yet in a seeming good-faith gesture, FARC agreed in late February to cease abducting for ransom, and in April unilaterally freed 10 police and soldiers held captive for 14 years — the last of security forces held. Santos lauded the actions, but said they were not enough for talks.

U.S. military aid to Colombia under Santos, while declining, remains robust, and its concern for human rights lame. The U.S. describes Colombia as one of the region's "oldest democracies" and a "success story." The U.S. Ambassador, echoing Uribe, dubbed it a counterinsurgency "model" for Afghanistan. The 1997 Leahy Amendment to a foreign aid bill forbids U.S. aid to foreign security units involved in human rights violations, but the U.S. has consistently resorted to evasive loopholes. Colombia and the U.S. signed a free-trade pact in 2006, under Uribe and George

Bush, but human rights concerns delayed implementation. Obama, whose Colombia policy differs little from Bush's, announced at the April 2012 Summit a starting date of May 15 for implementation — despite the 2010 murders of the land-rights leaders, and the pact's harm to small farmers, as revealed in an Oxfam-funded study by a prominent economist.

The number of war casualties is staggering. One study estimates 50,000 deaths from 1988 to 2003, and another 200,000 since 1964. Colombia today has the world's second-highest number of landmine victims; the use of mines varies directly with rebel retreat. The country badly needs to rethink its national project. Its national anthem beckons: "In rows of sorrows, the good now buds forth..."

The U.S. can be a vital
force for peace — or for
continued war.

The Colombia-FARC Peace Process

For the fourth time in 30 years, the Colombian government and the FARC are opening peace talks. A recent poll has 77% of Colombians in favor of dialogue.

President Santos revealed on September 4 that his administration and the FARC had held secret exploratory talks for six months in Havana. In early October, formal dialogue is to begin in Oslo, Norway and then

adjourn to Havana. Cuba and Norway will serve as guarantors, with Venezuela and Chile as accompanying parties. The roles of each have yet to be defined. No third-party mediator has been named. Each side has named its negotiators, who may change as talks advance.

The parties agreed in Havana to an ordered six part framework agenda for talks: (1)





Coffee Axis. February 2011, southern Antioquia, Colombia.

rural development with agrarian and land reform, (2) rebel political participation, (3) ending the conflict, (4) solving the illicit-drug problem, (5) addressing victims, and (6) implementation and verification. Some of the parts link to others. It is very significant that rural development is first, given its historic importance to the FARC.

Opportunities for a settlement with lasting peace clearly exist, although levels of mistrust, the complexity of reaching an agreement, and the ever-present threat of spoilers and other dangers counsel a guarded optimism.

First, given the lack of a cease-fire agreement, a continuing violence could erode public support for the talks. It will be

important for both sides to avoid actions of extreme violence, especially those that affect the civilian population.

Second, spoilers include first and foremost ex-president Uribe and many of his followers; Uribe has publicly opposed and criticized the peace process from the outset. While his public support has declined since he left office, he still wields much influence, especially among provincial elites and large landowners who fear reforms associated with rural development. Those elites control paramilitaries who could disrupt negotiations. There is also the danger of actions by rogue elements of the security forces, perhaps working with paramilitaries, or even of rogue elements of the FARC.

Although the U.S. has declared its support for the process, it could yet play the role of spoiler, as it has in the past — more than a decade ago “Plan Colombia” upturned what was initially to be a Marshall Plan by replacing U.S. support for rural development with support for a militarized counter-narcotics policy (which often served as a guise for counterinsurgency) — in a desire to impose its own national-security agendas. Whether Washington’s actions match its rhetoric this time remains to be seen.

Right-wing elements in the U.S. have already criticized the process because of the involvement of Cuba and Venezuela, which consort with countries hostile to the U.S. Both FARC and ELN (which has expressed a desire to talk peace, but is not

A las puertas del Ubérrimo

At the Gates of the Uberrimo farm depicts the different faces and secrets of the armed conflict in Colombia.

Written by human rights activists Iván Cepeda and Jorge Rojas, *A las puertas del Ubérrimo* (2008), which translates 'At the gates of *El Ubérrimo*', is a concise and powerful report about the rise and spread of extreme right paramilitary forces in northern Colombia. Cepeda and Rojas reveal the epicenter of one of many realities concerning Colombia's armed conflict, which revolves around former President Álvaro Uribe's farm: *El Ubérrimo*.

The book reports major events in northern Colombia's society and how paramilitarism was accepted among public figures and local media. It also provides the readers with testimonials from disregarded victims who suffered the development of the paramilitary projects. These people suffered for refusing to cooperate with paramilitary leaders who were aiming for defense mechanisms against the FARC and for access in politics, media and society.

The book was a catalyst for a series of debates since it mentions and confirms the close relationship between former President Uribe and paramilitary leaders. This book is among the documents that prove Uribe's support of the paramilitary United Self-Defence Forces of Colombia (AUC). Under his leadership, the country moved towards a paramilitary state.

The book also highlights forgotten facts that deserve consideration and explanations. There are more victims than what national media portray, from aboriginal groups, community leaders and civil society. *A las puertas* also displays a loss of social leadership in Colombian politics and a macabre paramilitarization of all spheres of social life under the "Democratic Security" motto, enforced by the owner of *El Ubérrimo* farm.

Cepeda and Rojas explicitly mention that this journalistic report was not composed to demonstrate that Uribe is a member of the paramilitary, they leave that for the reader to judge. What the authors really want is to identify two facts: The Paramilitary Project in northern Colombia and its influence on politics and *El Ubérrimo* that became a political and social meeting point, and how Uribe is a vital player in the life of the region of Córdoba.

The different aspects and secrets of the dirty war in Colombia depict the complexity of the situation defined by a loss of social governance. *A las puertas del Ubérrimo* serves as a reminder and written proof about the absurdity of the Colombian war and the segmentation of its spectators, namely the ones that live the conflict, the ones that read about it, and the ones that watch it on television.

Reviewed by Laura Beltrán Villamizar

yet part of the formal process) are deemed terrorist organizations by the U.S. (and the European Union). Cuba is held to harbor terrorist organizations like FARC and ETA. If the U.S. is to play a constructive role, it may have to adjust its geopolitical policies. Having Norway as guarantor — given that country's perceived neutrality and its well-known experience in supporting other peace processes — may "wash" the talks somewhat for the U.S.

Many observers of the incipient process point to needed modifications and enlargement of the framework in order to make it more comprehensive. President Santos has said that a final accord should be reached in months, not years. While his desire to show results soon is understandable, given the need to keep the public engaged, he may be underestimating the time required. One hopes he — and the public — can be flexible.

Related to this is a need to educate the public to the complexity of the process, and to accept that it may not be linear and that sporadic episodes of violence might occur. It will furthermore be important to include civil society in the process, which the FARC have also advocated. This is easier said than done, for the challenge is who and how.

Given that about 1/3 of FARC rebels are women (many of whom have suffered abuse, often by male commanders) and considering the extreme suffering of women and children in the conflict, it would be desirable to have women involved as negotiators in the process. ☯

Read James Jones' full opinion on "The Colombia – Farc peace process" now: www.revolve-magazine.com

COLOMBIA'S Sustainability Challenge

Writer: Lubomir Mitev, energy and climate analyst at *Revolve*.

President Santos is exploring the middle path between legalizing or banning drugs. A new approach based on promoting sustainability may be the answer for Colombia's population and the environment.

In November 2011, the governments of Colombia and Guatemala proposed the creation of a list of Sustainable Development Goals (SDGs) to expand on the Millennium Development Goals in order to emphasize the wellbeing of mankind and nature. The proposal was adopted at the Rio+20 Conference in June 2012 and the SDGs will be presented to the UN General Assembly in a few years.

According to Frank Pearl, the Colombian Minister for Environment and Sustainable Development, Colombia is the world's third most vulnerable country to the effects of climate change. By recognizing the social and economic dimension of climate change, it is

no surprise that Colombia wishes to establish itself as a world leader in sustainable development politics.

The largest problem facing the government remains drug trafficking and the related civil war. Reports have highlighted the negative environmental impact of coca and poppy cultivation in the Andean jungle. At Rio+20, Colombia's President Juan Manuel Santos was questioned over a recent proposal to legalize drug production in the country as a strategy to increase sustainable farming, reduce deforestation and counter the cartels. How does a plea for sustainability fit in with the war on drugs?

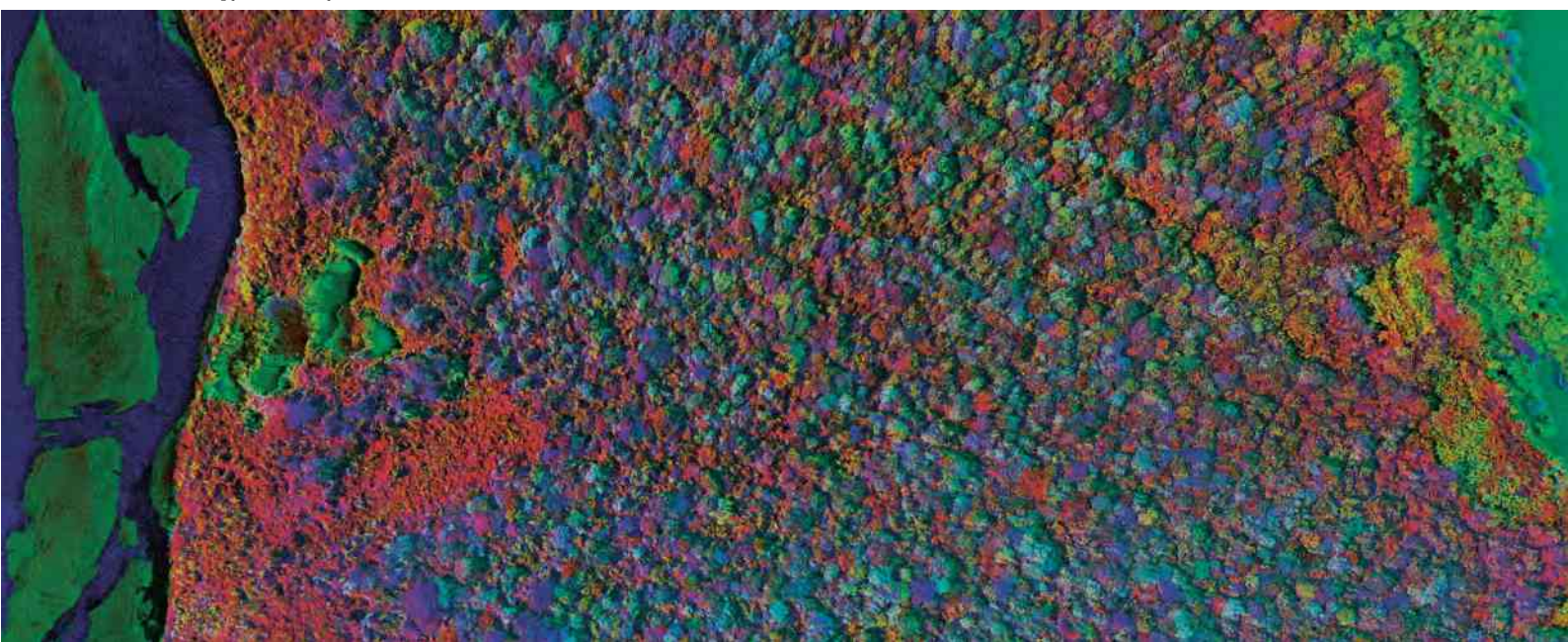
The images in this article illustrate carbon stocks in the remote Colombian Amazon and are courtesy of the Carnegie Airborne Observatory (CAO).

They are part of a program aimed at mapping carbon stocks at high resolution in the countries of Peru, Colombia, Madagascar, South Africa and the United States.

The mapping results show both natural sources of variation in carbon stocks – such as geology, soils, climate and vegetation type, – as well as human-caused variation, – mainly deforestation and forest degradation.

Check their website to learn more about this exciting project and for a 3D fly-through experience of an Amazon rainforest.

Amazon canopy biodiversity



Environmental Degradation

Colombia's nature is the 2nd most diverse in the world after Brazil. Its territory has coasts on the Pacific Ocean and the Caribbean Sea of the Atlantic Ocean, and stretches to the snow-covered peaks of the Andes and to the Amazon jungle. Only 10% of Colombia's nature is under some form of official protection and, like its neighbors, Colombia is facing increasing biodiversity loss due to deforestation caused by human activity. From agricultural activity, to logging and mining, to infrastructure development, the country is looking to develop its economy which is often but sadly happening at the expense of its natural wealth.

One of the leading causes of forest cover loss is the ongoing expansion of coca and poppy cultivation. Colombia is the world's biggest producer of coca (the main ingredient for the manufacture of cocaine) and the world's third largest producer of the poppy plant (used for making opium). These crops are mostly produced to generate higher income than other crops. The farming communities typically process the plants and sell them to the Colombian paramilitaries and rebel groups, who refine it into cocaine or opium to export. According to the United Nations Office on Drugs and Crime, drug trafficking accounts for 8% of world trade, with a gross annual profit of \$35 billion, of which \$900 million (roughly 2.5%) ends up in the hands of producers and exporters in the Andean countries, including Colombia, while the rest goes to dealers and traffickers mostly in the United States.

In the face of such big business, the Colombian government-led drug eradication efforts, supported by the U.S. government and known as "Plan Colombia", include the dropping of herbicides by crop-duster planes to destroy the coca plant, which harms surrounding forest areas, pollutes water reserves, and have proven to cause health problems such as respiratory diseases, infertility and malformations in children. Also, because of the illegality of coca and poppy growth, most farmers cultivate

the crop in fields on the side of hills to avoid being reached by government agents or crop-dusters. However, the government does pursue an extremely active eradication campaign and consequently the local farmers do not use modern soil conservation techniques because they do not expect to use the same land for a long time. This results in soil erosion and further harms the environment. At the other end of the production chain, the refining and manufacturing of cocaine and opium requires the extensive use of chemicals such as acetone and kerosene, which further pollute soil and water.

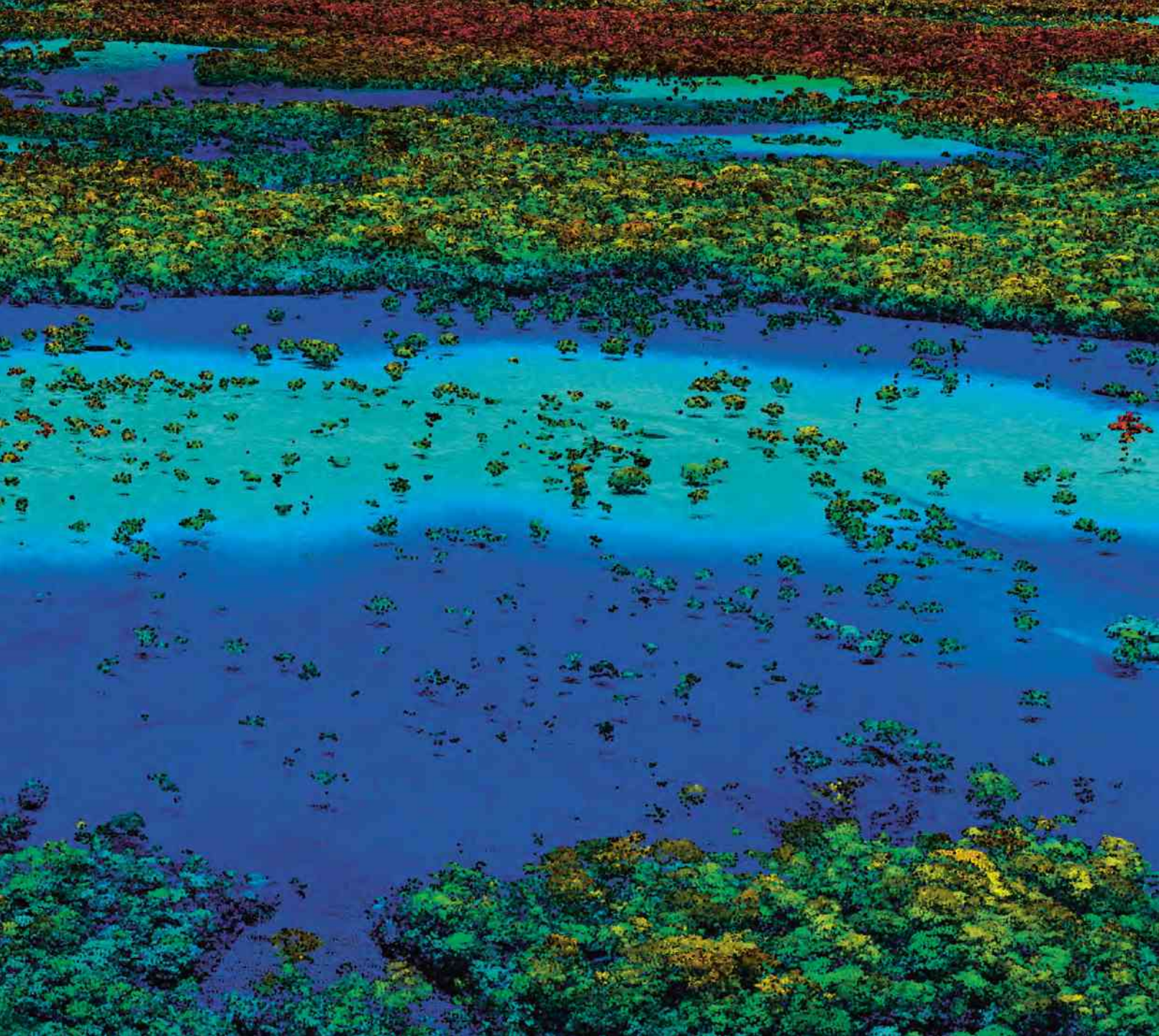
The Political Argument

With evidence that Plan Colombia has achieved limited results, it has become apparent that a new policy is required. At the Summit of the Americas in April 2012, held in Cartagena de Indias, President Santos proposed an overhaul of the drug policy because "Colombia has paid an enormous cost in economic terms and in human lives". The environmental damage caused by production and attempts to eradicate the crops is also unsustainable. While options are being explored to change the policy, the result so far has been some serious debate about legalizing drug production.

At Rio+20, however, President Santos made it clear that his aim is not to legalize drugs, but rather to promote a discussion regarding various scenarios which require the gathering of data and investigation of options by impartial experts. One option is the Asian-type policy – to be very harsh in punishing consumption and even harsher in penalizing production. The other extreme is the complete legalization of production and consumption. Santos' belief is that "there is a half-way stage and we want the experts to discuss the various possibilities of policies that can be accepted." While the debate is very sensitive in political terms, many South American leaders have announced their support for the idea, including President Calderón of Mexico, whose current drug-eradication policy has resulted in more than 40,000 deaths since 2006.



In an interview with Chatham House, President Santos stated: "sometimes we all feel that we have been pedalling on a stationary bicycle. We look to our right and our left and we still see the same landscape. [...] My proposal is very simple: we need to start an in-depth discussion, led by scientists and experts, about the 'war' against drugs. We have to determine whether we are doing the best we can or whether there are better options." He also added that the possible 'de-criminalization' of certain drugs will not be unilateral on behalf of Colombia because that would create a



Tropical deforestation and biomass levels

safe-haven for both drug producers and users. Rather, Santos highlights the fact that “the drug problem is a global problem, and therefore a global consensus is needed to confront it.”

President Santos’ idea of tackling the drug trafficking in order to address this transnational problem and promote sustainability with a single policy is a massive undertaking. If he is to take a tough, but different stance on drug trafficking he has to make the world understand that it is an international problem fueled by consumption as

well as production. In fact, it is doubtful whether the United States, being the world’s largest consumer of narcotics, might welcome a move by Colombia to legalize cocaine, either partially or fully. At the Summit of the Americas, President Obama told Santos that “legalization is not the answer” but was open to dialogue on the topic.

An attempt to continue the war on drugs under the flagship of sustainability might prove to create more support for the policy. The Santos government has managed to negotiate a number of investments for

environmental programs in Colombia that will result in economic growth, job creation and protection of biodiversity. For example, in February 2012, the World Bank agreed to invest \$10 million until 2015 for capacity-building projects and policies “that address environmental problems affecting the quality of life and wellbeing of the Colombian population”. By adjusting the ‘anti-drug trafficking’ policy into a ‘pro-sustainability’ one, President Santos may be able to achieve what his predecessors have failed to do. ☉

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VIEWS



At the fork in the road, a man sits on his duffel bag.
The road to the right leads to the ocean and the storm.
The road straight ahead is lost for days between sheets of red sand.

50°C in the shade.
A black car parks in front of the silver camper gleaming in the sun.
No road leads this far.



Distant Paradise

Wilmes & Mascaux



A protective wall around fifteen identical red-brick houses. They're organized in rows within a grid of roads and gardens.

On the other side of Tennyson Drive a guard sitting in a plastic booth monitors fifteen more identical white plaster houses.



Taking as their starting point images that depict the tangible reality of man-made wastelands, Wilmes & Mascaux probe the transience (or the pretension) of a civilization whose abuse of the natural world does not speak in its favor. As part of their project, they have “scanned” the memory of chaotic landscapes in Mexico, Europe, Quebec, the U.S.A. and Australia. In margin of the world, these landscapes form entities folded up on themselves, given up, forgotten, lost, far from all, in rupture with time. Life is motionless, time stopped or temporarily suspended.

On site, surrounding sound details, descriptive narrations, video and photographic surveys have been collected. These “samples” are connected in installations. The interaction of sound, visual and narrative images create a new imaginary site. The project has been presented since 1995 in museums, galleries, video festivals, art fairs, in Belgium, Luxemburg, France, Quebec, Australia and the USA.

Wilmes & Mascaux met in Mexico City where they were living in the 1980s. Back in Brussels, where they currently work, they began their collaboration as a visual artist duo in the mid 1990s.

www.wilmesmascaux.com

To order copies of the book "Distant Paradise",
Wilmes & Mascaux, ARP2 Editions, 2012, visit:
www.arpéditions.org



A mysterious dome of silence swallows all sound.
Suffocates sound.
Words resound, echoless...
Two hundred people live in one square kilometre and all is quiet.
A fence. A booth. Soldiers.

Von Braun's V2.
Missiles. A Nike Ajax.
A few old Scud missiles painted with rust inhibitor and patched up with polyester.
Three Patriot missiles. Some smaller ones.
A battery to simulate war.



To the right of the road.
A farmer in blue overalls crouches in the middle of a field.

He aims his .22 at a mole hole.
Ready to shoot.







The sheriff drives by at the wheel of his F150.
He slows, raises his Ray-Bans a fraction and hits the gas.
The Border Patrol follows the Chevy with plastic sheeting.

After the turn, two Chryslers form a roadblock.
Cops appear out of nowhere and draw their guns.
"KEEP QUIET – HANDS UP– DON'T MOVE"



Trapped inside paperweights, tiny green figures wait at the controls of their flying saucers. Plastic, fluorescent rubber and fluffy coloured Ets overflow from open cardboard boxes.

A huge rabbit with gigantic ears stands motionless in front of the barbed wire. You can find the Jack Rabbit at Exit 219 of the I-10. 60 miles south of Phoenix and 40 miles north of Tucson.



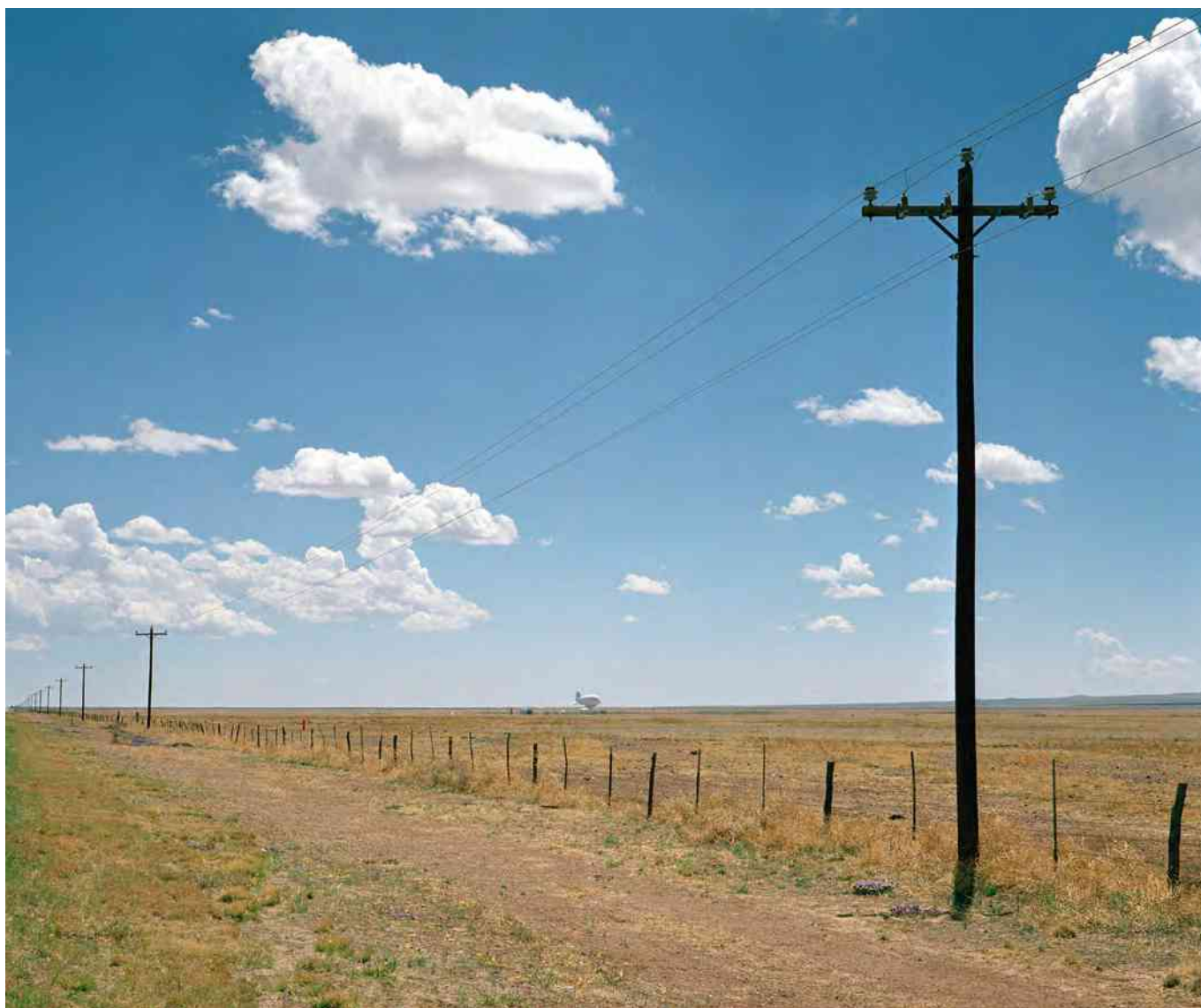
No man's land.
Barbed wire fence.
A road for the Border Patrol.
More barbed wire – the I-10.
Projects surrounded by walls.
Sports grounds
Barbed wire fences
huge avenues
highway access roads.
Wastelands.
Villas with yards.
Miles of walls.

The sirens are sounding alert level 3.
The shield won't hold any longer.
With each acid rain
all inhabitants
must retreat
to underground shelters.



An enormous American flag flutters in the wind
in front of a long silver trailer on concrete blocks.
Not a soul. Not a tree. The dry earth flies up and whirls.

Tumbleweeds pile up against
the dried-out carcass of a pickup.
A skin-and-bones dog sprawls in the sun.
A radio crackles Norteño music.



Tijuana, 15 March.
 Mexican side.
 A couple of Guatemalans stand in front of
 the corrugated barrier.
 Watch the helicopters that circle over the border.

US side.
 Regulars jump over the fence in a single bound.
 Crawl underneath like foxes.
 Zigzag in a crouch from one bush to another.

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Q&A:

F. W. de Klerk

The Last Apartheid President of South Africa

In 1990, leading anti-apartheid activist Nelson Mandela was released by South African President F.W. de Klerk after spending 27 years in prison. His freedom followed the repeal of all major apartheid laws including the lifting of the African National Congress (ANC) ban. While Nelson Mandela is more popular, less is known about the last apartheid era president who ordered his release – **Frederik Willem de Klerk**.



“He was brought under cover of darkness to my office in Cape Town, which later became his office. He was taller than I expected.”

F.W. de Klerk served as president of South Africa from September 1989 to May 1994 and is widely recognized for orchestrating the end of South Africa's racial segregation policy known as apartheid. He led the country's transformation into a multi-racial democracy that resulted in giving equal rights to all South African citizens. De Klerk jointly received the 1993 Nobel Peace Prize with Nelson Mandela. While many saw him as a pragmatist who was able to see the winds of change, others saw in him a skillful and passionate visionary who prevented a civil war.

Nicolas Rossier went to South Africa to research an upcoming documentary series about Nobel laureates and had the opportunity to sit down with the former president and ask him about the challenges faced by his country today, his role in ending apartheid, his relationship with Mandela and much more. The following is an excerpt of the taped interview to appear in Rossier's upcoming documentary “The Other Man – F.W. de Klerk and the End of Apartheid in South Africa” to be released in December 2012.

THE OTHER MAN

A NICOLAS ROSSIER FILM



Scenes from the documentary by Nicolas Rossier. Source: Baraka Productions

More than 15 years after the end of apartheid, how is South Africa? Has the new country delivered on the post-racial dream?

If one looks back there are reasons to be positive and say we have achieved what we wanted to achieve, but there are also reasons for concern. On the positive side, we have a good constitution. Our economy has been growing consistently except for the year of the worldwide economic crunch. There is a tremendous amount of goodwill between all the people of South Africa. Only radicals are continuing to make wild statements, but the overwhelming majority of all South Africans, black or white or whatever their color might be, want the country to succeed. Tourism has grown. There are many positives, but education has actually deteriorated. Approximately 40% of black South Africans are unemployed. We have an unacceptably high crime rate and we have unfortunately also the scourge of AIDS. There is also an element of threat to the constitution. The

ANC party from time-to-time comes with legislation, which would have the effect of undermining the constitution and eroding its values. And if we deviate from this constitutional path then we run a serious risk of going the wrong way. But by and large I am confident about the future, I am confident about our capacity to overcome the challenges. It has a tremendous potential as the strongest economy in Sub-Saharan Africa.

What do you think your role was in ending apartheid?

I prefer not to claim the honor to have ended it. The National Party had already accepted by the 1980s that there was an absolute need for fundamental change and we brought together the constitutional committee. We struggled with the question, "how can we bring full political rights to all South Africans in a way which would not result in a dictatorship, which would not result in a failed state?" It was a process. It led in the early 1980s to a split in the National Party. The right

wing broke away. It liberated those of us who remained behind to concentrate on the need for reform. We called then a conference of the National Party and we presented the new vision. I played an integral part in helping formulating that new vision. A new South Africa with a strong constitution with a bill of rights, with checks and balances which could prevent the misuse of power and the suppression of any minority by any majority. If I look back, the one thing that I am proud of is that for once I, as a political leader, kept every promise I made within one term of office. We achieved a new constitution and we achieved a new bill of rights which encapsulated this vision of justice for all.

Do you think that if there had not been president de Klerk and Nelson Mandela at the time, we would not have witnessed the end of apartheid?

If one of the other candidates won, they might have done it too. What I do believe is that in settling a violent armed conflict,

personalities became important and it was important that there was a Mandela and it was important that he got along with the leader of the government and likewise it was important that the main negotiators Roelf Meyer from the government side and Valli Moosa from the ANC side also developed a mutual trust. It was fortunate that Mandela and I found it possible to work together even though big strains developed between us from time to time. When there was the possibility of the negotiation process totally derailing, we found together a way to rise above it and to ensure that the process go forward.

“Truth and Reconciliation” was widely regarded as a success, what's your opinion?

I supported the legislation through the Truth and Reconciliation Commission (TRC) which did good work in many fields, especially the amnesty issue bringing peace to those who lost family and friends during the years of violent conflict. Where they failed was to view these issues in an even and a fair manner. They concentrated for all practical purposes mostly on the wrongs done by the security forces but failed to investigate black-on-black violence and to disclose fully the role which underground activities of the ANC played in the commission of gross violations of human rights. The most important failure was that their activities did not really result in a jump in the direction of more reconciliation [except for] in certain personal instances. As a general pattern, the overwhelming percentage of whites in South Africa, irrespective of their political conviction, feel that they have not been fairly treated and that there was an element of prejudice in how the TRC operated.

How did US sanctions help precipitate the end of apartheid?

Sanctions kept us on our toes and made us realize that we were drifting into a situation of growing isolation. The issues of conscience played a much greater role than the sanctions. We could have withstood sanctions for many more years. We became experts in circumventing sanctions.

“I later found proof that elements in the security forces were guilty, but also Mandela's elements in the ANC were busy fomenting violence, black-on-black violence, especially in the province of KwaZulu-Natal.”

You have said previously that the fight against the ANC was not to keep apartheid in place, but mostly to fight communism. Can you develop that thought?

I think this would be over-simplifying. The fact is that until the Berlin Wall came down, the ANC was funded with money from the USSR, they received training in the USSR, they were and they still are today in alliance with the South African Communist Party. At the same time thousands and thousands of Cuban troops were in Angola and Mozambique. We were fighting a war there in which MIGs from Russia were flying against our air force. A communist strategy to use the ANC to get a grip on South Africa and its mineral resources and its strategic position was not something of our imagination – it was a hard political reality.

Do you understand more now why the ANC wanted to get help from communist regimes? How much of that perceived threat delayed your goodwill into moving forward to end apartheid?

Yes, I can understand why the ANC looked for support elsewhere but this delayed for many years the possibility of meaningful negotiations. It helped when the Berlin Wall came down, and when the USSR imploded, it created the window of opportunity to unban the military wing of the ANC and allowed them to come back. We could have saved many lives had we reached an earlier accommodation. ☺

“Let me say that the tensions which arose between us mainly related to ongoing violence.”

Read more of the interview online and watch the trailer of Nicolas Rossier's documentary, “The Other Man - F.W. de Klerk and the End of Apartheid in South Africa”: www.revolve-magazine.com

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RARE EARTH

Chinese Shadows on “Green” Growth

Writer: Luc Mampaey, Director of GRIP (Groupe de recherche et d'information sur la paix et la sécurité)
– a Belgian think-tank about peace and security based in Brussels: www.grip.org



Another inconvenient truth: our “green” technologies, our production of renewable energy, our inseparable companions – the iPad, iPhone and iPod – and countless other products in our economic model, rely on those rare earth elements – China monopolizes their production and supply.

Another black spot on “green” labels: the mining of the resources requires vast quantities of chemical products, releases radioactive substances, and operates in disastrous sanitary and environmental conditions.



Group →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Period ↓	1 H	2 He											3 Li	4 Be	5 B	6 C	7 N	8 O	9 F	10 Ne
2	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar		
3	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr		
4	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe		
5	55 Cs	56 Ba	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu			
6	87 Fr	88 Ra	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr			
7																				
Lanthanides			57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu			
Actinides			89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr			

Rare earth elements (REE) taint the green economy.

REE are the group of 17 metals at the bottom of the Periodic Table discovered in the 1940s when research was being carried out on the properties of plutonium. These 17 rare metals consists 15 metals from the lanthanides chemical series and the 2 transition metals – scandium and yttrium. These complicated names are reserved for scientific use and most of us are quite oblivious to the services they fulfill every day.

La
Lanthanum

Ce
Cerium

Pr
Praseodymium

Nd
Neodymium

Pm
Promethium

Sm
Samarium

Eu
Europium

Gd
Gadolinium

Tb
Terbium

Dy
Dysprosium

Ho
Holmium

Er
Erbium

Tm
Thulium

Yb
Ytterbium

Lu
Lutetium

Sc
Scandium

Y
Yttrium

From iPads to Tomahawk Missiles

For a long time after the Second World War, these metals were under-exploited. They were considered to be mere byproducts of the refining process of other metals and were used by metallurgists as “mischmetal” (an alloy of lanthanum, cerium and neodymium) for the purification of cast irons and steels, or incorporated in alloys such as those used for making flint.

Around the 1980s, major developments in information, military, space and “sustainable development” technologies opened up new applications for the specific properties of these metals that we now live with – most often without knowing.

Do you drive a hybrid vehicle? Toyota’s Prius model requires several tons of rare earths

every year (mostly **lanthanum**) for the production of its batteries alone. The magnets used in a single 3 megawatt wind turbine, require hundreds of kilos of **dysprosium**. No iPods work without **neodymium** and no TVs without **yttrium**. You want to drive cleaner? It will cost 40 grams of **cerium** for each catalytic converter...

There is no need to pursue this inventory to see that today rare metals flood our most popular products. Taking notice perhaps a little late of the importance of these elements for the continuity of an economic model still founded on growth, the European Union published a report in June 2010 bringing to light the strategic significance of these resources beyond their uses in our everyday consumption.

In the United States, the Defense and Energy departments emphasized the importance of secure and abundant access to rare earths for the preservation of the country’s research and development (R&D) capacities and military superiority. In 2010, a General

Accountability Office (GAO) report – “Rare Earth Materials in the Defense Supply Chain” – underlined rare metals’ critical role in the weapon systems. In February 2011, the United States Magnetic Materials Association (USMMA) called on the U.S. government to create a strategic reserve of rare metals.

More recently, a report in April 2012 by the Congressional Research Service (CRS) – “Rare Earth Elements in National Defense: Background, Oversight Issues, and Options for Congress” – presented a series of recommendations to Congress after having enumerated an exhaustive list of weapons whose dependence on rare earths was critical. The propulsion systems for the new class of hybrids DDG-51 destroyers requires **neodymium** for the magnets of its electric motors, **dysprosium** is indispensable for the stealth systems on drones and fighter jets, Tomahawk cruise missiles, Aegis Spy-1 radars, “smart bombs”... the list is long and the conclusion is clear: more rare metals, more weapons.

Riotinto mines, Spain. **Source:** Miguel Roa Guzmán



Unequal Distribution and Chinese Dominance

Contrary to what their name suggests, the “rareness” of these elements does not explain their strategic nature in the development of weapon systems or consumer goods. According to estimations, **neodymium** and **lanthanum** exist in larger quantities than lead and **cerium** is more widespread than copper. **Dysprosium** and **samarium** reserves are apparently larger than those for tin and even the rarest of these elements, **thulium** and **lutetium**, are 200 times more abundant in the Earth’s crust than gold. A first explanation for this relative “rareness” is economic: these rare metals are present only in weak concentrations so in order to extract them, huge quantities of earth must be dug and filtered, which involves massive mining costs.

The second problem is distribution. According to the United States Geological Service, around 37% of the world reserves are located in China. This number may have been overestimated and could be 23%, according to the first White Paper published by the Chinese government in June 2012. Approximately 17% of known reserves are in Russia, while the United States has about 13%. Few regions are completely lacking in these resources and the reserves to be discovered are potentially enormous. According to a Japanese study published on July 3, 2011 by *Nature Geoscience*, the Pacific Ocean bottom could hold up to 90 billion tons of rare earth elements – a staggering quantity in comparison to the 100,000 tons of current annual production.

China controls 97% of the world’s production of rare earth today – an apparent monopoly that nobody saw coming. Since the 1960s and until the beginning of the 1990s, the largest rare earth extraction mine was Mountain Pass in California, now

owned by Molymer Corporation. The United States was the world leader in rare earth production, but at a time when demand was still weak and prices were low. Not very profitable, Mountain Pass closed in 2002 while the R&D budget for the Ames Laboratory – then world leader in the field – was cut further, thereby depriving the United States of its expertise.

An opening was made for the Chinese monopoly to consolidate. Chinese production of rare earth had already increased by 40% between 1978 and 1989. In the context of a national R&D program for state of the art technology launched in 1986 by Deng Xiaoping and capitalizing on weak environmental and social regulations, China developed its rare earth sector in a long-term strategy aimed at controlling the entire chain, from the extraction and transformation to the production of finished and semi-finished goods.

As of 1988, China overtook the USA as the first producer worldwide. An initial balance was struck: the Chinese economy was liberalizing, while consuming countries – Japan, the United States and the European Union mainly – could supply their markets at significantly lower prices than the extraction of their own resources would have allowed, and simultaneously transfer the burden of environmental management of such an industry to China.

China therefore has a monopoly by default much more than through geopolitical calculation. Incapable of anticipating the spectacular rise in demand that was already presaged in the 1990s and incapable of escaping the “market” ideology and shouldering the political costs of a competition with China, the other actors withdrew. China’s production monopoly gives it sweeping market power and price-fixing. Increasing global prices reduce local production costs all the while accelerating technology transfers through the outsourcing of foreign companies to its territory. But how can those complaining today be surprised by what is after all nothing more than an elementary principal of their own economy?

China controls 97% of the world’s production of rare earth today – a monopoly that nobody saw coming.





"I still remember the smell of Baotou. It was actually quite difficult to even breathe...", Baotou, Mongolia,
Source: Paul Holland

Devious Environment Arguments

As the almost exclusive worldwide producer (97%), China has become increasingly, following its skyrocketing growth, the main consumer of rare earths. As domestic demand develops, the country reduces its exportation quotas. In 2006, China exported 61,560 tons of rare earths of the 86,520 tons officially produced, or more than 70%. In 2011, 93,800 tons were officially produced, but the Chinese government had set the exportation quotas at 30,246 tons, barely 32%! The consequence: prices increased tenfold between January 2010 and January 2011.

Confronted by these exponential and severe exportation restrictions imposed by China, the European Union, Japan and the United States – who, combined, use over 90% of Chinese rare earth exportations – decided in March 2012 to register a joint complaint with the World Trade Organization (WTO). In July 2012, with no agreement in sight, the WTO litigation body established a "working group" that has six months to submit a series of recommendations that China would be obliged to respect.

These will be difficult to enforce given that

China has some solid arguments in its favor. First, it justifies its quota policy by the necessity to eliminate illegal mines which, according to the United States Geological Service, accounted for 17-36% of total Chinese production between 2006 and 2011. From China's perspective, the eradication of illegal mines is indispensable for the preservation of their resources, which depends on reinforcing public oligopolies, but also on reducing overall production. However, as a strong emerging economy, China has to maintain its own supply and make decisions to determine strategic stocks for the most critical rare earths.

The first adjustment variable was naturally to adjust exportation quotas. The second argument justifying exportation quotas is far more devious. Heavily criticized for the catastrophic management of the environmental consequences of the extraction process, China claims it wants to support a "sustainability" principle in managing its rare earth resources.

Concerned about their supply, Western countries prefer not inquiring too much about the conditions in which the mines are exploited. In Baotou, Mongolia – the world capital of rare earths guaranteeing nearly half of China's production – the city is permanently crushed by thick acrid smelling smog. Local authorities have begun to recognize the existence of these negative health and environmental consequences, but that has a cost and in order to confront these challenges properly, China must stop "selling its earths worth gold at carrot prices" as Chinese economists have noted.

It is in China's interest then to refer to the exceptions in Article XX of the General

CHINA'S RARE EARTH PRODUCTION AND EXPORTS, 2006-2011 (IN METRICTONS)

	2006	2007	2008	2009	2010	2011
OFFICIAL CHINESE PRODUCTION QUOTA	86 520	87 020	87 620	82 320	89 200	93 800
USGS REPORTED PRODUCTION	119 000	120 000	120 000	129 000	130 000	112 500
CHINESE EXPORT QUOTA	61 560	60 173	47 449	50 145	30 259	30 246
ILLEGAL MINING	32 480	32 980	32 380	46 680	40 800	18 700
AS A % OF GLOBAL PRODUCTION	27%	27%	27%	36%	31%	17%

Source: China Ministry of Land and Resources. U.S. Geological Survey. Ministry of Commerce of China.

Note: USGS estimated production data exceeded Chinese quotas, some of which is attributed to illegal mining.

Table excerpt from Marc Humphries, Rare Earth Elements: The Global Supply Chain, June 8, 2012, CRS, R41347

Agreement on Tariffs and Trade (GATT) in 1947. This article foresees “particular cases” in which members can be exempted from the general rules of international commerce. Indeed, two exceptions specifically concern environmental protection. Paragraph (b) of Article XX authorizes WTO members to adopt measures contrary to the GATT discipline provided they are necessary for the protection of the health and life of people and animals or for the preservation of plant life. Paragraph (g) authorizes such measures to conserve non-renewable natural resources, if such measures are conjointly applied with restrictions on the national production or consumption.

Of course, the introductory paragraph of Article XX stipulates that these measures cannot be applied in any way to constitute a means of arbitrary or unjustifiable discrimination between countries or disguised restrictions on international commerce, which is what the United States, the European Union and Japan will try to show...

Imaginary Wars

The controversy of rare earths elicits catchy titles: “Will wars over rare earths take place?” The situation is undoubtedly critical, namely in light of the crucial importance rare metals play in the evolution of military arsenals. But solutions exist.

The Mountain Pass mine in California has just resumed its activities and should enter into stable production in 2014-15. Australia has been carrying out studies for several years to open up mining of significant reserves in the center of the country, the Mount Weld mine namely. Important development projects concern India and Brazil, respectively second and third worldwide producers after China. Important resources have been identified in Canada, Greenland, Norway, Vietnam and even France may have a few reserves

in the Cévennes. Author of a recent book on the matter, David Weber, pleads for an ambitious European “Airbus of the Sea” type project in order to open up underwater mining in the French Pacific territories supposedly rich in rare earths. Without forgetting the recycling sector, however marginal it may be.

One thing however is certain. The technological and environmental constraints that China will have to face, as well as the countries wanting to free themselves partially of their dependence on China, are going to weigh heavily on the future prices of rare earths. Our green technologies and electronic gadgets will become increasingly expensive. The solution also inevitably resides in the reduction of demand and in an indispensable reflection on the relevance of an economic model founded on limitless growth in a world where, every day, we discover the finite nature of our natural resources. 🌀



Riotinto mines, Spain. Source: Miguel Roa Guzman

APPALACHIAN MOUNTAINTOPPING

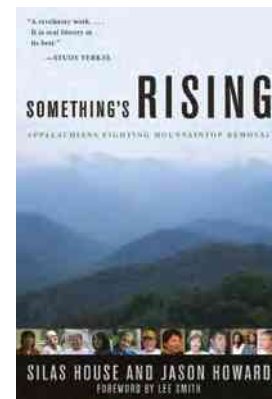
An American Tragedy



Writer: Jason Howard. Author of *A Few Honest Words: The Kentucky Roots of Popular Music* and the coauthor of *Something's Rising: Appalachians Fighting Mountaintop Removal*. His writings have appeared in the *New York Times*, the *Nation*, *Sojourners*, *Equal Justice Magazine*, and on America's National Public Radio. www.jason-howard.com

Mountaintop removal is the cheapest way to mine coal. Over 1.5 million acres have already been destroyed in the Appalachian mountain chain of the eastern United States. The impact on the environment, animals, and humans is simply catastrophic and completely unnecessary – only 7% of U.S. electricity comes from mountaintop removal coal, writes **Jason Howard**.

All quotations are from the book *Something's Rising: Appalachians Fighting Mountaintop Removal* by Silas House and Jason Howard.



Deep in the Appalachian Mountains, in the center of North America's coal country, a war is raging. Despite numerous mentions in international media outlets like the *New York Times* and *The Guardian*, many world and even U.S. citizens are unaware of this battle and their connection to it through energy consumption. Like many conflicts these days, this one is focused on an energy source — in this case coal — and involves international corporations, dirty politics, and the outright exploitation and abuse of an entire people.

At the heart of the battle is mountaintop removal, an extreme form of strip mining that involves removing an entire top of a mountain in order to extract a seam of coal that is often less than a meter thick. Instead of harvesting the timber or preserving the topsoil for future use, the coal industry labels it “overburden,” pushing it over the mountain into a hollow below, often burying creeks and streams in the process. These are called “valley fills,” and the consequences are devastating: over 2,000 miles of waterways have been buried or polluted



Appalachian mountains. U.S.A. Source: Southwings (A conservation organization that uses volunteer pilots and small aircraft to protect the natural resources and ecosystems of the south-east Appalachian area)

and over 800 square miles of mountains destroyed. Each year, the equivalent of 56 Hiroshima-sized atomic bombs is detonated by the coal industry in the region. Two recent studies have shown that people living near strip mining sites are 50% more likely to die of cancer and 42% more likely to have a child with birth defects.

“We’ve destroyed a million and a half acres in the past thirty years with mountaintop removal,” said Jack Spadaro, a former mine inspector and environmental activist. “It’s going on at an accelerated rate now... this [is happening in] the forest that was still in existence after the last Ice Age, and it was the seeds from this forest that repopulated the rest of North America.”

With statistics like these, a natural question is why such devastation was allowed in the first place. The irony is that mountaintop removal developed from a loophole in legislation intended to curb the harshest side effects of strip mining. Signed by President Jimmy Carter in 1977, the Surface Mining Control and Reclamation Act

required coal companies to demonstrate that surface mining would create a post-mine site that could be used for residential, commercial, or industrial development, and that they would restore the mined land to the “approximate original contour” of the original mountain.

The latter provision has been ignored outright by the coal industry. In keeping with the logic of mountaintop removal, the supposed reclamation is carried out in the cheapest way possible, with harsh, non-native grasses being sown to replace the wasted topsoil and scrub pines as poor substitutes for the hickories, poplars, and oaks that once populated the site. Attempts to convert the plateaus into residential and commercial properties have been met with wide-scale failure. Countless industrial parks built on these sites and scattered throughout eastern Kentucky remain either empty or half-filled. At least one such piece of land now boasts a golf course, a means of recreation that hardly benefits the area as it is usually enjoyed by the more afflu-

“The southern Appalachian Mountains have some of the most biodiverse forests in the world.”

“I think any reasonable person can intuitively understand that when you’ve blown the top off a mountain you have forever destroyed it.”

— Bev May



Appalachian mountains. U.S.A. Source: Southwings.

ent. And although a prison was built on another site, surveyors quickly realized that it was sinking, apparently resting on unstable ground due to the mining. It has been given the moniker “Sink-Sink,” a pun on the infamous prison called Sing-Sing, located in New York State.

As for U.S. politicians there is often a great divide between those who represent coal-producing states and others who do not. Following eight years of lax oversight by the Republican administration of President George W. Bush, current President Barack Obama has stiffened environmental and safety regulations of the coal industry. In response, Big Coal and their friends in government have claimed that Obama has effectively declared war on coal.

At the state level, Appalachian politicians of both parties have proven to be beholden to the coal industry, which too often donates exorbitant sums to their political campaigns. In a now-infamous speech given in 2011, Kentucky Governor Steve Beshear bellowed that the Environ-

mental Protection Agency should “get off our backs” in reference to the increased restrictions, ignoring the pleas of constituents like Beverly May whose land had been threatened by mountaintop removal mining. A nurse practitioner from the coal-fields of eastern Kentucky, May took the lead in organizing her neighbors against the impending mine, which would have seen massive coal trucks roar up and down the one-lane road in her community.

“I think any reasonable person can intuitively understand that when you’ve blown a top off a mountain you have forever destroyed it”, May said. “There’s only one thing that [the coal industry is] there for and that is to harvest coal. It doesn’t matter what’s in their way. It doesn’t matter if a cemetery’s in their way; it doesn’t matter if the homeplace is in their way; it doesn’t matter if a hugely valuable forest is in their way. That’s garbage [...] you can toss it over the hill. All that matters is [...] getting the coal out in as cheap a manner as it can possibly be obtained – and that’s mountaintop removal.”

“Mountaintop removal needs everybody against it. Change is not going to come from this region, even. It’s going to come from national and international pressure to stop mining coal this way.”

— Denise Giardina

“That’s not coal mining in any sense of the word. That’s just total rape of the earth.”

— Larry Bush

For their part, the coal industry claims that this method of mining is actually a godsend for Appalachia, a region that contains some of the highest poverty rates in the United States. Coal mining and mountaintop removal in particular provide jobs for the region, they argue, affording financially solid lives for many Appalachian families. But they ignore another set of statistics, which details the thousands of jobs lost due to the mechanization on which mountaintop removal is reliant. In West Virginia alone, this mechanization has resulted in a net loss of over 48,000 jobs from 1978 to 2003, reported *USA Today*. Yet another irony is that many of the eastern Kentucky counties with the largest levels of coal production also boast the highest rates of poverty.

Many residents of Appalachia have bought into the coal industry's propaganda. It's a common sight in the region to see cars plastered with bumper stickers bearing the slogans "Friends of Coal", "Coal Keeps the Lights On", and worse: "Hug a Miner, Shoot a Tree Hugger." Thousands attend pro-coal rallies and demonstrations, decrying environmentalists and President Barack Obama, who has become the primary target of their ire due to increased enforcement of surface mining restrictions by his administration's Environmental Protection Agency.

Despite this heated climate, countless other Appalachians are rising up in protest of mountaintop removal. Each February in Frankfort, Kentucky, 1,400 concerned citizens descend on the state Capitol for "I Love Mountains Day", a rally designed to draw attention to the issue. In September 2010, 114 people were arrested in front of the White House as part of "Appalachia Rising," a mass mobilization of thousands petitioning the Environmental Protection Agency and the Obama administration to enact more stringent regulations and enforce those already on the books. Earlier this year, dozens of protesters were arrested during sit-ins in congressional offices of mountaintop removal supporters on Capitol Hill in Washington, D.C. As in most social justice movements, the region's artists have responded as well,

taking up the cause in literature, music, film, theatre, painting, and sculpture.

While such environmental activists are expressing their concern for the environmental damage that continues to take place, many also cite the cultural injuries that too often accompany the mining. In Appalachia, as in many parts of the world, a place defines the stories and music and dialect of the people that live there. When that topography is threatened by an act as destructive as mountaintop removal, it endangers the entire culture of the region.

"We're a distinct mountain culture, and our culture means something," the late activist and Goldman Environmental Prize winner Judy Bonds noted in 2008. "This is a culture that has been handed down to us all the way from the Native Americans. This mountain culture is a very special culture that America needs to embrace and understand."

Integral to the culture, Bonds said, is the legacy of resistance that has marked Appalachia. "There's a history of fighting back [...] We've been knocked down, we've stood back up. But not as much of that happens [anymore] because of the modernization [...] It's a lot like battered wives, that Stockholm syndrome where you identify with your abuser. That man beats you up,

knocks you down, then he says, 'Oh honey, I didn't mean to do that, I love you so much, let me help you up.' And then he kisses you. It's the same thing. 'Here's you some coal sludge, here's you some coal dust. Oh, I love you, here's you a paycheck.'"

Before her death in January 2011 from brain cancer, Bonds faced a dramatic repercussion for speaking out against the coal industry. During an anti-mountaintop removal march in 2009, a coal miner's wife lunged through a crowd of people and assaulted her. The incident was captured on video, and is widely available on YouTube.

Such public incidents and intimidation are becoming increasingly common. When Maria Gunnoe, an activist from Bob White, West Virginia, was slated to testify before a congressional subcommittee earlier this year, she attempted to show the members a photograph of a five-year-old girl whose family lived near an active mining site being bathed in orange-colored, polluted water. Like most children are when being bathed by their parents, the girl is naked in the photo, but water and shadows block out any nudity.

Republican subcommittee staffers, however, apparently did not approve. Not only did they not allow Gunnoe to show the

"We've destroyed a million and half acres in the past thirty years with mountaintop removal. It's going on at an accelerated rate now. [...] This is the forest that was still in existence after the last Ice Age, and it was the seeds from this forest that repopulated the rest of North America."

— Jack Spadaro

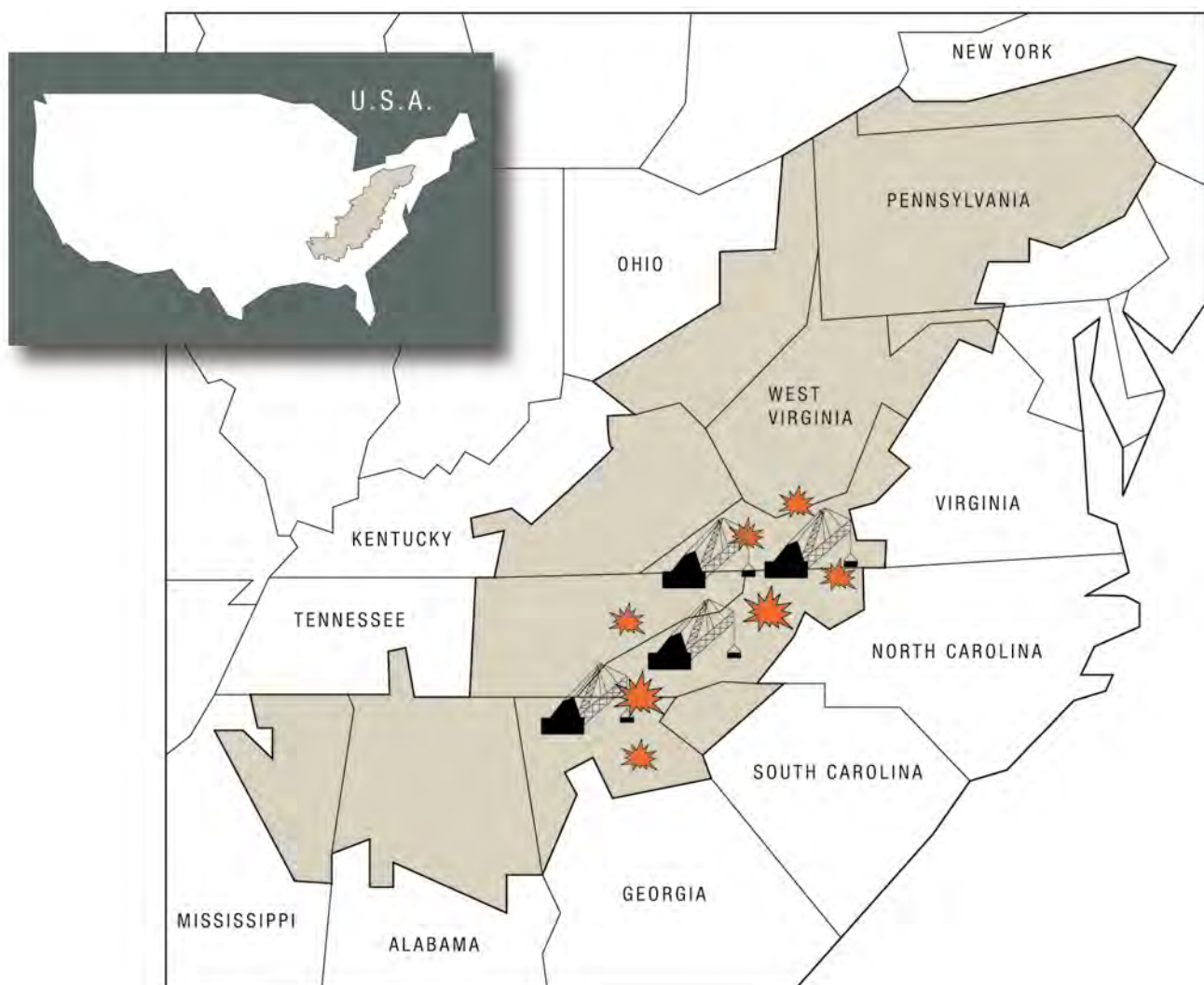
photograph but upon finishing her testimony, she was escorted to the back of the room by U.S. Capitol Police, where she was informed that the subcommittee had reported her for possessing child pornography. She was questioned for forty-five minutes and allowed to leave. According to a Capitol Police spokesperson, the case remains open and under investigation.

The true obscenity in this situation is that despite such mounds of scientific evidence, the coal industry and their political allies have steadfastly refused to engage in an honest, civil dialogue about the issue, which has left many Appalachians looking outside the region for help.

Denise Giardina, a bestselling novelist and former candidate for governor in West Virginia, is one of those. “Mountaintop removal needs everybody against it,” she said. “Change is not going to come from this region, even. It’s going to come from national and international pressure to stop mining coal this way.” ☼

“Everybody who was there isn’t there anymore. Nowadays I think mainly about how it looks now, and how it used to look. The rest of it is all going to be destroyed now — unless we can stop it.”

— Jean Ritchie



SAMIRA HODAEI

Dancing the Sharp Edge

“Dancing the sharp edge is a homage to all the women who have lived and died in ambiguity, it is a subtle unveiling of the real dangers which lurk in their lives and shown in the form of their challenging dance with life and death, leaving the observer in awe of their endurance and suppressed feminine power waiting to erupt.”

– Samira Hodaei

Her works capture one's attention immediately thanks to the unique technique she has developed. She applies a coating of glass color meticulously to every single millimeter of the canvas. Just as art and poetry of the arts, so are form and content considered by Samira Hodaei to be an indivisible whole. The tiny dots she paints relate to the material worlds as symbols of small stones and deep pain, as well as to her need to question reality. She calls her dots metaphorically 'pixels' in reference to the technologically virtual world of today, one in which the internet dominates our lives. As

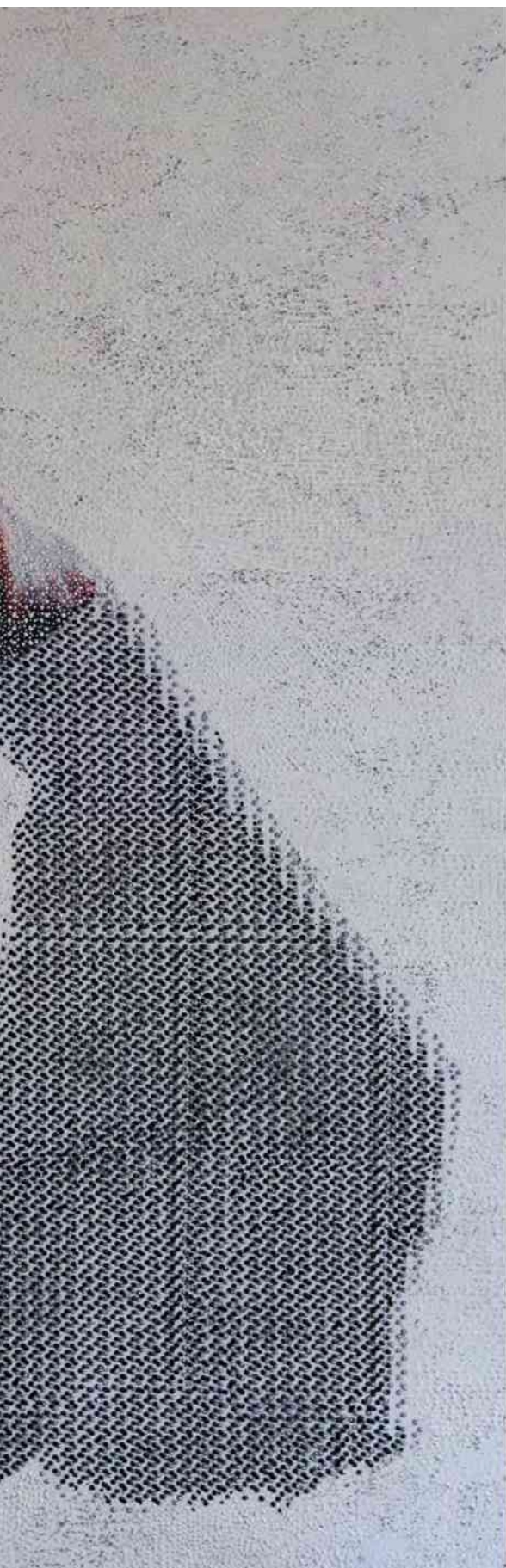
the tiniest unit of the whole, they represent the question: what is real, what is unreal, what is going on below the surface of our perceptions? – Anna Fech (AB Gallery)

This series is on exhibit this fall from
October 28 to December 21, 2012
at **AB Gallery Lucerne, Switzerland.**

www.ab-gallery.com

Read *Revolve's* interview with
Samira Hodaei here:
www.revolve-magazine.com





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