

B A K A L

A Green Thumb FOR

It is strange and more than a tad ironic that to understand what is happening (and what should happen) in the United States to cope with (and cash in on) climate change, you must look to remote villages in Uganda and the bourses of Europe. For, while the most promising approach to slowing global warming – the creation of markets to guide polluters in funding the best way to reduce or offset emissions of greenhouse gases – has its most ardent advocates in the United States, much of the action to date has been elsewhere.

THE Invisible Hand

But backtrack for a moment. As the United Nations' Intergovernmental Panel on Climate Change reaffirmed in January, there is a virtual consensus among scientists that the earth is warming in large measure due to human activities that release greenhouse gases – notably carbon dioxide – into the atmosphere. What is interesting here isn't so much the science of the problem, but rather the politics of the response. It used to be that there was some political doubt that human-induced global warming was a reality. But this doubt has dissipated – so much so, that even President Bush, a fervent believer in studying the problem to death, recently conceded that climate change is a “serious challenge.”

Now the only real debate is about the role the United States should play in containing global warming and who will bear the cost. The U.S. response is bound to be

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influenced by the gathering army of consultants, traders and investment bankers who figure there is money to be made from the solution. And that is probably a good thing. Money focuses the mind, and adding the profit motive to the equation will almost certainly drive the politics toward a fix in which markets will play a leading role.

AN AFRICAN CARBON FARMER

Before getting to the mechanics of that solution – global carbon-emissions-rights trading – it is useful to see how climate-control efforts can affect real people in a very real world. That's where Beatrice Ahimbisibwe fits in. She is a schoolteacher, widow and single mother who lives in a remote part of western Uganda. Unlikely as it may seem, she is also one of a new breed of carbon farmers – a small but vital link in the containment of global warming.

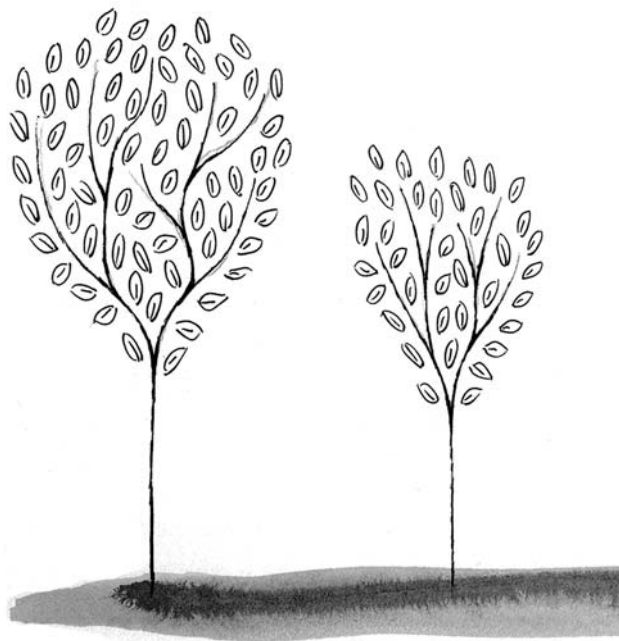
Ahimbisibwe has carbon rights to sell because she raises trees on land that isn't good for much else. As the trees grow, they sequester carbon from the air in the form of wood, thereby making a minuscule contribution toward reducing heat-trapping carbon dioxide in the atmosphere. For her role, Ahimbisibwe is paid by a local nonprofit group that gets money from European companies wishing to offset their own carbon emissions – notably, the British subsidiary of the global packaging-products company Tetra Pak.

For several years now, Tetra Pak UK has been working hard to reduce its emissions of greenhouse gases in the course of manufacturing. And it managed to cut its annual out-

put from the equivalent of 15,800 tons of carbon dioxide in 2001 to 12,000 tons in 2005. To supplement these efforts within the company, it has been buying carbon-sequestration services from people like Ahimbisibwe to offset its remaining emissions.

A few years ago, I asked Samantha Edgar, then the environmental officer for Tetra Pak UK, why her company was buying carbon rights in Uganda, and she told me that Tetra Pak saw this offset program as a way of preparing for anticipated climate-change regulations “that will likely affect us more and more in the future.” She explained that Tetra Pak UK viewed its efforts “as a way of strengthening our ability to dialogue with our stakeholders, and to motivate and communicate with our staff.” So, while the company's efforts in Uganda are voluntary, managers see them as part of a hard-nosed bottom-line business strategy.

Tetra Pak is hardly alone in attempting to do well by doing good on climate control.



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Among the biggest participants are a variety of high-profile companies like Wal-Mart, Dell, HSBC (the world's third-largest bank) and dozens of electric utilities. They are following a variety of strategies to reduce their own emissions and to buy offsets. But the case of Tetra Pak is illustrative. To find ways to contain its own emissions, Tetra Pak UK hired a consultant, the Edinburgh Centre for Carbon Management in 2003. It quickly established a computerized carbon-monitoring system to gauge its carbon "footprint" on a yearly basis. By 2004, the company had managed to reduce carbon emissions by 13 percent as compared to 2001 levels. Tetra Pak UK's goal for 2005 was to cut emission to 15 percent below 2001 levels – a goal it achieved.

According to Edgar, offsets like those from Uganda were used only to compensate for what it sees as unavoidable emissions, making the company "carbon neutral" – that is, adding no net carbon to the atmosphere. In 2004, for instance, Tetra Pak UK's carbon footprint was 12,960 tons, so it bought that much in

offsets for the year. To date, 80 percent of Tetra Pak UK's offsets come from projects in Uganda – including Beatrice's carbon sequestration – while the remaining 20 percent comes from biomass and solar energy projects in India and Sri Lanka.

Tetra Pak, said Edgar, is happy with its investment in Uganda. And so, too, was Ahimbisibwe. "At first," she explained, "we couldn't understand how or why anyone would want to pay us for the air our trees use." Suspicious neighbors counseled her to hold back.

But money talks louder than neighbors. She agreed to clear and plant 2.5 acres of her land with native species of trees. Experts determined that she would sequester 63 tons of carbon over 10 years (assuming all the trees survived), for which she would be paid almost \$8 a ton, for a potential total of \$456 over 25 years. Ahimbisibwe would be entitled to any ancillary benefits, as long as the trees themselves weren't harmed. For example, she could let her goats graze there and could use branches pruned from the trees.



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In this plan, the first installment, 30 percent, is paid upfront, after the trees are planted. Future payments are made as follows: 20 percent one year after planting the whole plot, 20 percent in year three, 10 percent after year five and 20 percent after year ten. This may not sound like much, but it constitutes a nice supplement to her meager salary as a teacher in rural Uganda.

Some environmentalists in Europe and the United States argue that such deals are a bit of a scam, allowing emitters in the industrialized countries to buy the equivalent of the indulgences for sins. And they contend that the measurement of the carbon reduced is wrong or that the trees don't constitute a permanent method for sequestering greenhouse gases or that the costs of verifying the offsets are too high to make them practical.

Ahimbisibwe's major concerns, by contrast, have little to do with lofty principles or lowly verification issues. What keeps her up at night is something much more mundane: "What happens," she asks, "if we see some of the wild plants and animals come back?" She explains that, with native trees come monkeys, which steal food, and venomous critters – tree vipers, rhinoceros vipers and the like.

Ahimbisibwe's neighbors have been impressed by her earnings. She smiles deeply as she tells the story. "I am so proud," she says. "Not only do I use my work as an example when I teach my schoolchildren, and not only do I get to talk to and meet people from all over the world, but now my neighbors come and ask me questions about my carbon and my trees. Can you believe? I have become a consultant!"

MARKET UPS AND DOWNS

Ahimbisibwe's agreement to plant trees for cash is just one of thousands that make up a

huge market coming to fruition in Europe. Few Americans realize it, but for the past two years, the world has been conducting a grand experiment in the use of markets to facilitate mandatory carbon-emissions containment. Formal carbon-trading markets, sanctioned by governments to help emitters minimize costs in meeting containment obligations, now exist in Europe.

Under these market-based systems, governments set ceilings on total emissions (the "cap"). Then the emissions rights (in tons of carbon dioxide equivalent) are either handed out or auctioned to power plants, factories and refineries. This effectively forces companies that emit more than their allocations to clean up their acts or to buy more emissions rights from companies willing to emit less in return for cash.

There are also voluntary markets, where buyers like Tetra Pak and even philanthropies that decide to reduce their emissions with the goal of getting credit under future regulated caps, or simply doing the right thing. No one really knows the size of the voluntary carbon markets, but trading is probably in the neighborhood of \$100 million to \$200 million a year.

More reliable figures for the regulated carbon markets, however, suggest trading ran at an annualized rate of about \$30 billion worth of carbon in 2006, with the European Union's Emissions Trading Scheme accounting for more than two-thirds of the total. That implies a tripling of volume over 2005. Not only has the existence of the EU trading system supported the growth and creation of a new breed of carbon financiers – people who buy, sell, trade and bank carbon rights – but the mere smell of all that the money has also contributed to the softening of the conservative pro-business political stance on climate change in the United States.



It is getting harder and harder, in other words, to overlook the fact that there are now venture capital funds, hedge funds, investment funds and project developers – you name it – all devoted to carbon rights. In fact, the sudden burgeoning of a multibillion dollar market has led to the creation of a whole new class of British carbon-rights companies whose stock trades largely on AIM, the London Stock Exchange's small-cap market. Four of these companies now account for almost \$1.4 billion in market capitalization, and

three of them – EcoSecurities, Trading Emissions and Climate Exchange – have market capitalizations of more than \$400 million. Likewise, there are now billions of dollars in carbon-investment funds worldwide (mostly in Europe) and almost all major banks and energy companies have (or are hiring) carbon-rights investment specialists. Financial markets are doing what they always do – following the money.

Guy Turner of New Carbon Finance, a consulting firm in London, told *The Financial*

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Times that “the amount of money that has flowed into the [carbon] market has been staggering.” And, he added, “It has not just been the ethical side of the market – these are red-blooded investment houses putting their cash in.”

He was doubtless referring to two recent developments: Goldman Sachs took a big stake – eventually reaching 19 percent – in the UK-listed Climate Exchange, the parent company of the European Climate Exchange. Its initial investment was part of the Climate Exchange’s merger with the Chicago Climate Exchange, a voluntary but legally binding carbon market that is the only existing market in the United States and one of the first such carbon markets anywhere. Then Morgan Stanley announced that it would invest \$3 billion in carbon credits. Mainstream financial institutions, it seems, are elbowing each other to get in on the carbon action.

But all is not sweet success. Last spring, the European carbon-rights market crashed for the first time, and the price of carbon rights fell from over 33 euros a ton at the end of April to just under 10 euros in May. In part, the crash was the result of the allocation formula for emissions allowances. Initially, market analysts expected the total cap on emissions rights would send corporations scrambling to buy more. It later became clear, however, that some European national governments, which had the responsibility for allocating allowances to their resident enterprises, had succumbed to political pressure and passed out more allowances than many emitters needed in order to maintain business as usual.

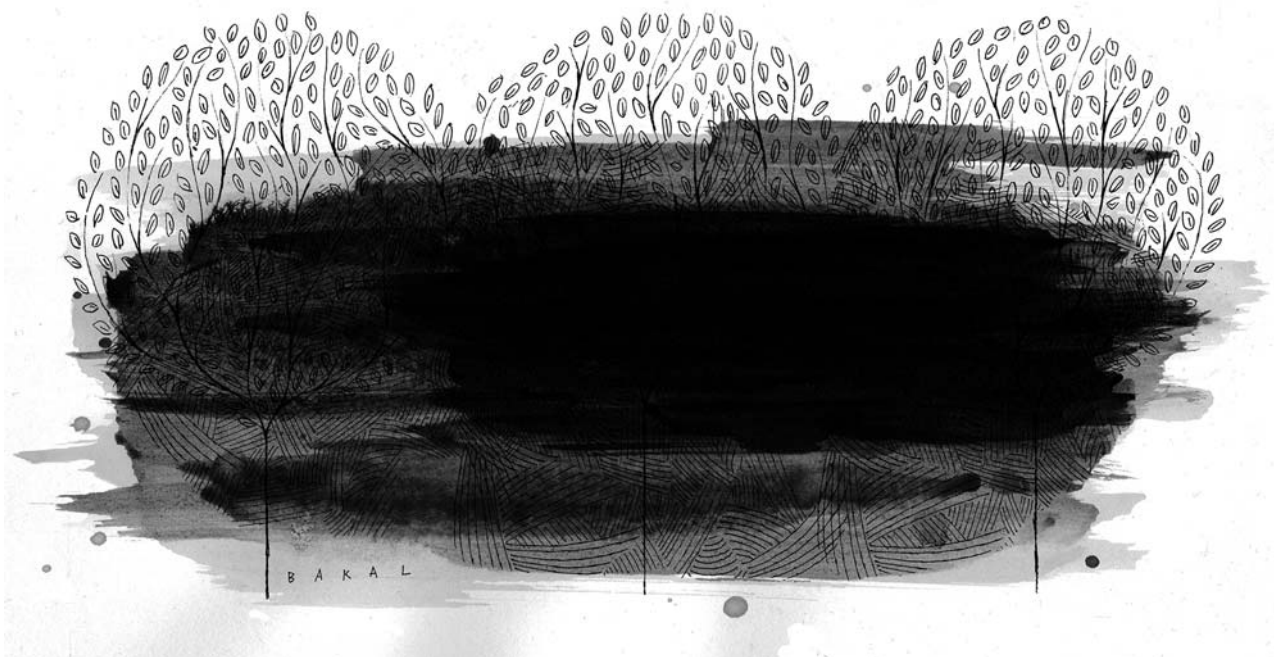
The experience led to a tightening of allocations all around – a reduction supported by carbon financiers who lost money in the crash. This points to an unintended (but de-

sirable) consequence of the market’s creation. It is one thing for Greenpeace to call for tougher action on global warming and quite another for banks and hedge funds to call for the same thing.

The European Union’s initial allocations of emissions rights under the Emissions Trading Scheme have also had political repercussions. By handing out rights based on past emissions records, governments have established a system that perversely rewards Europe’s dirtiest power utilities. Not only does their pollution suddenly become a marketable asset (one they receive free), but they are also allowed to charge higher energy prices to meet the new quotas. In this regard, Peter Barnes, the co-founder of the social activist investment group Working Assets, argues that “the economic value of the atmosphere is a form of common wealth – no corporation created it, and it belongs to everyone.”

He likens the circumstances to those of rationing in time of war. “The last time we had rationing in America – during World War II – the emergency lasted only four years,” Barnes points out. “This time, the emergency – human-induced climate change – will last for perhaps a century, and so must the carbon-rationing system. In order to last for that length of time, the system must have popular support. If it is subject to gaming by private corporations, the way electricity deregulation was, or if it results in higher prices but no tangible benefits, it won’t last long and it won’t do the job that needs to be done.”

He has advocated the creation of a trust in the United States that would hold all carbon credits and auction them to private enterprise. This trust – analogous to the Alaska Permanent Fund, which receives royalties for oil pumped from the North Slope – would make every United States citizen a shareholder and would use the revenues to pay divi-



dends. It is an elegant solution, though one that would likely be bitterly opposed by carbon emitters who expect to get their initial allowances at no charge.

Strikingly, some pro-business European politicians agree that public auctions are the better way to go. Peter Ainsworth, the shadow environment minister for Britain's Conservative Party, concluded that "the problem will not be sorted out until the market is made to work properly by forcing firms to bid for their permits instead of being allowed to lobby government for them free of charge."

THIS SIDE OF THE POND

It is impossible not to notice the shift in climate-change politics in the United States. The new Democratic-controlled Congress has put global warming legislation on the front burner. The media, too, seem to have gotten religion: previous Intergovernmental Panel on Climate Change reports barely made the back pages; this year's report was on the

cover of *USA Today* as well as being the subject of a *Larry King Live* show.

Arguably most significantly, a group of big corporations, including Alcoa, BP America, Caterpillar, Duke Energy, DuPont, Florida Power & Light and General Electric, have joined with mainstream environmental groups to form the United States Climate Action Partnership. In January, that group called for a strong carbon-containment policy built on policies quite similar to those adopted by the European Union.

The first tangible efforts to regulate carbon emissions (along with the trading systems to facilitate them) are coming from the same source as many other environmental initiatives: state governments on the East and West Coasts. Connecticut, Delaware, Maine, Maryland, New Hampshire, New Jersey, New York, Vermont and Rhode Island, which formed the Regional Greenhouse Gas Initiative, are proposing emissions limits for electricity generators that would allow emitters to trade to

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meet their obligations and permit them to buy limited quantities of offsets. So expect many more equivalents of Beatrice Ahimbisibwe to emerge in the United States, probably in the Midwest.

A parallel move is taking shape in California. With bipartisan support, the Legislature has passed a bill that calls for California to reduce emissions to 1990 levels by 2010 – a reduction of about 25 percent. Although the new law doesn't require the establishment of a market (the issue became something of a political football), it does permit it, and the state has set up a blue-ribbon committee to consider the alternatives. More than likely, it will recommend the establishment of a state-level carbon market. And it is possible that once this market is created, other Western states will follow suit.

But, as the European Union has learned, the details matter a lot. How California and the Northeast allocate credits, how those credits are registered, how they are verified, and how they are regulated will all make a big difference. The Northeast regional group's rulemaking is more advanced, and it appears the states will auction all of the available credits, rather than giving them away. That would be a major departure from the way existing carbon markets operate.

California may be behind the Northeast in some respects, but it is a pioneer in one part of the regulatory infrastructure: it has had a functioning carbon registry, known as the California Climate Action Registry, for six years. It was established as a voluntary registry for greenhouse gas emissions that could protect and reward companies that choose to anticipate mandatory reductions.

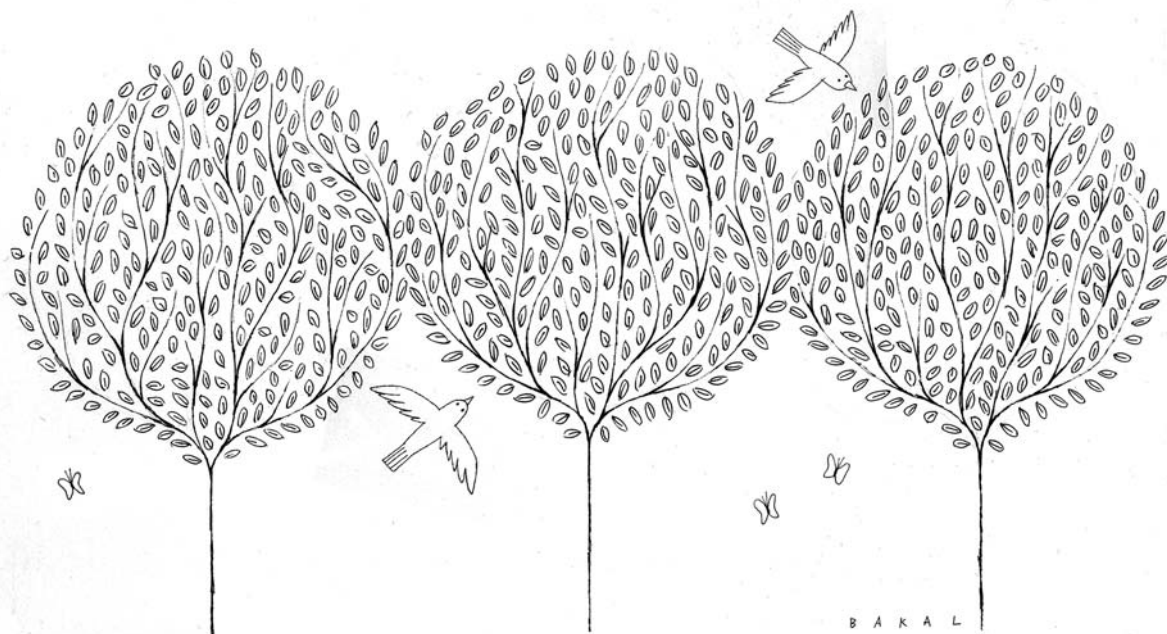
The idea for the nonprofit registry, its president, Diane Wittenberg, explained, came from a handful of California companies will-

ing to reduce their carbon emissions voluntarily but seeking assurance that they would get credit if and when a mandatory emissions plan was established. The result was the creation, with the backing of the State Legislature, of a registry that could certify and record emissions reductions.

Early on, the registry's creators realized that in order to give credit to the state's "climate leaders," they needed to set up the accounting systems, reporting mechanisms and certification and verification mechanisms that would enable them to ensure that emissions were, in fact, being reduced, and to compare these reductions to those of others – in other words, to sort the wheat from the chaff. To achieve that, the organization has thus far established detailed protocols for electricity utilities, the cement industry and the forestry industry.

"The closest analogy I can think of for the registry," Peter Miller, a senior scientist at the Natural Resources Defense Council and a member of the registry board said, "is the Financial Accounting Standards Board, which establishes the standards by which all company finances in the United States are judged." It is the registry's standards, he adds, that allow emission containment to be analyzed, understood and ultimately traded. In a similar fashion, he expects that the standards being developed by California's Climate Action Registry will ultimately enable not only carbon trading mechanisms but also effective greenhouse gas regulation. "After all," he says, "you can't manage what you can't count." To which one might add: neither can you trade what you can't count.

Perhaps the only thing that might derail carbon markets in California and the Northeast is federal pre-emption. If Congress, with or without the acquiescence of the White House, decides to create a national cap-and-



trade carbon market, it will likely take precedence over any markets the states might create.

All told, a startling 106 bills on climate change have been introduced in Congress. Currently, the highest-profile bipartisan proposal is the one sponsored by Senators Joseph Lieberman and John McCain (and supported by both Hillary Clinton and Barack Obama). It would set up all the mechanisms needed for trading, as well as capping emissions of the electric power, industrial, transportation and commercial sectors at 2004 levels by 2012. More striking, it would lower that cap steadily, to just one-third of 2004 levels by 2050. The bill punts on some key questions, however: it gives the Environmental Protection Agency the authority to decide what portion of the emissions rights will be given away (and to whom) and what portions will be auctioned.

An even tougher bill, sponsored by Senators Barbara Boxer, a California Democrat, and Bernie Sanders, the Vermont indepen-

dent, seeks to cut emissions by a whopping 80 percent by 2050. And, unlike the Lieberman-McCain bill, it contains no subsidies for nuclear power – subsidies that draw fire from some environmental groups.

Congress may not have the will to take on powerful businesses – notably, the coal lobby – that oppose federal action on global warming before George Bush retires. For that matter, action may be stalled by conflict between hard-line environmentalists and those willing to compromise to bring some Republicans and conservative Democrats on board. But the political momentum for a climate-control policy built around a cap-and-trade market appears to be almost unstoppable.

Corporate America is no longer speaking with one voice on the issue: many big businesses (including some oil companies) would rather switch than fight, giving them a hand in shaping the federal initiative. Once again, it appears that American capitalists will demonstrate the flexibility to do well for themselves while doing good for others. **M**