





Green winds

Stimulating production can be coupled with carbon credits, in order to avoid economic stagnation

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Marábá, Parauapebas, Curionópolis, Tucumã, Pau D'Arco, Rio Maria, Xinguara and other municipalities in southwestern Pará form an economically dynamic region. During the 1960s and 1970s, this region became the stage for major cattle-breeding projects encouraged by the federal government.

Family-run farms took a back seat, but later on began to expand once more, in parallel both with big mining concerns and thousands of anonymous prospectors. Cities expanded non-stop. Due to the rapid transformation of the Amazon Forest into crop/livestock lands, the net balance of carbonic gas (emission less capture) in 2004 is estimated at almost 300 million tons, the equivalent of 35% of all the Northern Region's emissions during that year.

Carbonic gas released into the atmosphere helps to heat up the planet and increases the pace of climate change. At first sight, there is no reason to become disturbed, given that this emission may be reduced. One of the mechanisms envisaged to avoid deforestation and forest fires that release carbonic gas is to compensate farmers, by means of carbon-credits, in order to preserve the forest. The landowners would be compensated by taking care of the trees instead of planting crops or breeding cattle. However, this alternative might prove to be disastrous for the region's economy, given that it would lead to a dramatic cutback in activities, the collection of taxes and jobs, according to a study by the economist Francisco de Assis Costa, a visiting professor at the Center for Brazilian Studies (CEB) at Oxford University in England.

"This strategy of cutting back on carbon emission is not going to benefit the development of the Amazon Region, nor help to incorporate the region into the national economy, if it is going to be used only as a form of compensation directed solely at one economic agent, namely the rural producers", warns Costa, a researcher at the Nucleus for Higher Amazon Studies (NAEA) at the Federal University of Pará, in Belém. "To be successful, the money has to enter the economy as a productive force, not simply as income." According to his viewpoint, to transform farmers into pensioners, would be akin to having the

owner of a small furniture factory, for example, close his doors and live only from the rent of his property: the suppliers of timber and other raw materials for furniture would have fewer buyers and would be obliged to produce less or to sell at lower prices. Such a wondrous proposition, of earning without doing anything, would be far from representing development on a productive basis, given that the links in the chain that make the economy work, generating and distributing wealth, would have been severed.

The conclusions that he drew emerge from mathematical simulations which reproduced the real functioning of the economy in the state of Pará's southwest during 2005, to which he added a new component, air. Based on the classical methodology of product inputs and outputs proposed by the Russian economist Wassily Leontief in the seventies, Costa analyzed the circulation of 101 items arising out of rural production identified in Pará's Crop/Livestock Census 2004 among 18 sectors of economic activity and their affiliates – from crop/livestock farming and mining to final consumption by the families – within 31 municipalities of Pará's southwest, an area 20% larger than the state of São Paulo.

The results are not encouraging at all. In the first case, the mechanism of compensation for the cutback in emissions – even if by means of a fair agreement with the farmers at levels equivalent to what they were making out of fanning and cattle breeding – compensates for only part of the income lost by giving up production. If the farmers were to cut production by half, receiving 50% of the annual profit generated by the soil in order to maintain the forest and to also to cutback on the emission of carbonic gas by half, the local economy would receive an extra R\$ 435 million, by means of carbon credits. It does not really come to that much, given that the gross value of the region's economic output, equivalent to the total circulation of goods, is almost 60 times larger. Within this scenario, production drops by 50% and the emission of carbonic gas only by a little more than half (56.7%), but at a cost to the local economy's contraction (9.3%) and to the salary mass (11.3%). Also on the shrinking side are prof-

its (10.5%) and, very slightly, taxes (0.1%). The number of job openings suffers the most, declining by at least 41.9%.

Another scenario that Costa analyzed involves a strategy that would preserve the native forest, while, at the same time, avoiding such losses by means of a profitability incentive in the areas that would remain untouched by the carbon-credit generating mechanisms (the production of other farmers replaces those who adhere to the carbon-emission cutback program). In this case, the local economy would grow by 5.4%, salaries by 9.8%, employment by 9.9%, profits by 4.7% and taxes by 3.8%. The state's economy would gain R\$ 90 million and the country's R\$ 340 million. The problem would be that carbon emissions would also increase (by 6.7%). "The nonsuccess of the carbon emission cutback policy would correspond to a notable economic success", concludes Costa.

His calculations indicate that the overall income in the region's economy would lose R\$ 1.8 for each R\$ 1.0 withdrawn from production; on the other hand, the income from all production and consumption networks gain R\$ 1.8 for each R\$ 1.0 linked to the economy. By means of this study, he brought together two areas of interest: the regional development of the Amazon region, about which he has published 12 books, (one of them in German, as a result of his doctorate thesis conducted at the Freie Universität, in Berlin), and climate change. As a visiting professor of CEB, he took part intensely in the debates on climate change conducted from January to July of the current year in Oxford, the city in which the world's scientific output with regard to this issue is concentrated.

Costa's study also shows that the isolated implantation of this mechanism opens the door to an effect contrary to the one desired: increased deforesting and atmospheric pollution, given that not all the farmers would gain from not planting nor developing pastures. "A farmer would give up deforesting and gain carbon credits, but his son would keep on deforesting", exemplifies the researcher. The emission of carbon dioxide would actually only decrease in a Utopian scenario: namely, if all the thousands of farmers left the forest un-

touched, even if an agreement was made with only some of them.

Costa believes that the policies for holding back deforestation (and for cutting back on carbon emission) should be coupled with production policies which would reconcile local development strategies, endogenous and environmentally sustainable, without depleting the region's natural resources. "We have to create our own innovations", he adds. "The experiences of other countries do not always serve our purposes."

One of the possibilities would be to employ half of the estimated R\$ 435 million per year that the farmers would receive for cutting back on carbon dioxide emissions in a program consistent with scientific research which would pave the way to more modern agriculture, with no emission balance; with the other half destined to change current agricultural production methods, thus maintaining the region's economic development dynamics.

Incentive to production - If, for example, the R\$ 435 million were applied to a carbon dioxide cutback program that would invert the productive base – from the most emitting systems to the least emitting ones – by means of scientific and technological research and subsidies making this conversion possible. According to Costa, the local economy would grow by 5.6%, the salary mass by 2.7% and the profit mass by 6.9%, whereas, carbon dioxide emission would drop by 32.3%. According to the researcher reciprocal gains would result: emissions decrease while the economy expands.

In another simulation, where other sectors of the economy grow at rates higher than agriculture and also by maintaining the goal of cutting back emissions by 50% in five years, employment would grow by 155.3% and the salary mass by 112.3%. However, this economic impulse independent from agriculture, would lead to an increase in carbon dioxide emissions in the order of 60% compared to the previous year: the local economy expands and diversifies, but the strategy to contain emissions fails.

Maintaining the forest is not the only way for developing countries to obtain – and to negotiate – carbon credits. There are others, defined as Clean De-

velopment Mechanisms (CDM), implying less polluting alternatives for the production of industrial goods, such as paper or cement. However, the majority of the CDM projects developed in South Africa, Brazil, China and India, the countries with most of the world's CDM projects, also imply income concentration, frequent unemployment and, paradoxically, damage to the environment, given that the impact of these projects is not always duly explained, according to a survey carried out by the biologist Eduardo Ferreira, at the Environmental Change Institute (ECI) at the University of Oxford.

During May, Ferreira visited eight CDM projects under way in Brazil and noticed that not all of them manage to retain as much carbon as expected, whereas those on a small scale, precisely those with a higher social impact, encounter much difficulty to obtain financing. On the other hand, companies, which have already developed CDM projects, complain about governmental delay and red tape connected to project approval. In a paper published last February by *Nature*, Michael Wara, from Stanford University, reinforces the argument that, at least for the present, the global carbon market has not performed according to expectations: neither is it helping to create a market for clean, low-carbon-consuming technologies, nor is it allowing that developing countries become active partners in the struggle against the impact of global warming, inasmuch as it functions as an indirect and insufficient subsidy for peripheral economies.

One is not dealing with problem that is simple even in other countries. During an interview with *The Guardian*, Ngaire Woods, director of the Global Economic Governance Programme at the University of Oxford, referred to the debates on the prospects a cutback in carbon emissions in the United Kingdom, and stated that government officials were looking solely at parts of the problem: some were trying to deal with prices, others with the impact of the climate changes, while still others with poverty throughout the world. Nowhere, according to her, was there a coherent strategic plan. ■

CARLOS FIORAVANTI,
FROM OXFORD



Production with less pollution

Transformation in the economy of the southwestern state of Para brought about by a program cutting the CO₂ emission by half in five years (compared to the amounts in 2004, in % terms)

Scenarios	Added Value	Salaries	Profits	Employment	Taxes	CO ₂ Net Balance
Owners receive the equivalent of half the production to maintain the forest	-9,3	-11,3	-10,5	-41,9	-0,1	-56,7
Other farmers replace the production of those entering the program for carbon emission cutback of the previous scenario	5,4	9,8	4,7	9,9	3,8	8,2
Production migrates to less carbon emitting form	5,6	2,7	6,9	56,6	2,2	-32,3
Other sectors of the economy grow at a faster pace than agriculture	128,8	112,3	131,5	155,3	134,8	59,9

SOURCE: FRANCISCO DE ASSIS COSTA/UEPA/CEB