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## In short

■ by Stephen A. Vosti

## Reprise of Rio: Will policymakers hear José Carvalho's chain saw?

In the Brazilian Amazon, natural resource mining is a necessary condition for survival—it begins with building a house and continues with the harvesting of the forest.

More appropriate technologies and policies to promote their adoption can reduce how much area must be cleared to support a family.



As the United Nation's Sustainable Development Commission sets out to ensure the implementation of the conventions signed at the Earth Summit in Rio de Janeiro and begins to exert pressure on the governments of the world to curtail environmental degradation, the members of the commission should plan a trip back to Brazil, but not to Rio. They should plan to travel to the fringes of the Amazon rain forest—the buffer between the rich and biodiverse ecosystem and the mostly poor people who seek to harness it. They might encounter José Carvalho, who will be busy sawing down a large tree somewhere on his relatively small landholding. They might want to stop to talk with him while he pauses to check that his chain saw—his sacred bit of labor-enhancing technology—is properly fueled and lubricated. If asked, José might acknowledge hearing something about the Earth Summit, but he'll tell them that it hasn't affected him. It hasn't affected him because his actions are not driven by the wishes or mandates of people outside his immediate family.

José doesn't have a perverse desire to denude the world of rain forests, nor does he love the toil, danger,

or high cost associated with felling massive trees with fairly rudimentary tools. José wants to guarantee food on the table and a livelihood for his family of six living in one of the least hospitable places in the world. It is not an easy task. José has been dealt a bad hand in the social reshuffling of natural resources. But by hook or by crook, he gained access to trees (lots of them), poor soils, seasonally torrential rains, malaria (lots of it), and isolation—all of which combine all too frequently to generate hunger.

José is not completely ignorant about the valuable hardwoods or rich biodiversity contained in the remaining forested portion of his lot that persuades him to pick up his saw. No, he has heard that his private forest contains strange and potentially useful trees and plants. But he is a newcomer to the area, and there is no one to tell him which plants are possibly valuable, and virtually no scope for turning these trees or special plants into cash or food—which is what his patch of forest must generate in order to sustain his family.

José is not shortsighted either. He does look to the future. He knows his annual cropping patterns will deplete soil nutrients. But his view of the future is through the window of the present—action taken today may bring doom tomorrow, but failure to undertake today's action will almost certainly bring today's doom.

José knows that some agricultural strategies require much less forest conversion than others. He knows that horticultural pursuits require the least amount of cleared land, and cattle require about one hectare of cleared forest per head. But poor market links, virtually nonexistent banking systems, and ever-increasing shortages of agricultural labor (including on-farm labor as José's family grows older and off-farm wage labor as urbanization trends accelerate in these hinterland areas) force his hand. He must diversify his production activities in ways that reduce risk and can be done with available labor—the trend towards increased cattle production is clear and rational.

José didn't always live in the Amazon, but he can't return to his hometown in southern Brazil. For better or for worse—and often in response to government

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initiatives—people like José Carvalho and his family often move into these areas from places where they had been sharecropping or worse. They left with a hope of a better life, and they are in the Amazon to stay. They are part of the ecosystem now, and they can be expected to do whatever is necessary to guarantee survival, just like all the other species in this ecosystem.

Given his ecosystem, his aspirations and the constraints he faces, José has no choice but to deforest small plots of his land. It is legal to do so on up to 50 percent of his land—and nothing said in Rio will change that. Once the land is exhausted—often after a few years—he needs to deforest more. His choices are limited; his future is bleak. He begins to saw the next tree.

But it doesn't have to be that way. If soils can be made more productive and the economic value of natural products remaining in privately held forests can be realized, trees don't need to fall—at least not in such great numbers. Soils can be protected, and agricultural activities can last longer than a few years on a given piece of land. Markets for wood and other products can be developed and distribution systems improved. But changes are needed; changes outside the immediate grasp of José, but well within the grasp of developed and developing countries alike. Better seeds, fertilizers, and credit to purchase them are needed in the marginal areas of the Amazon (as well as in many other parts of the developing world). New farming methods are not being developed quickly enough, and those that exist are not getting to farmers. Insufficient attention is being paid to the marketing and institutional links that are needed to allow farmers to effectively tap and manage the biodiversity that still exists in their backyards. International and national attention for these critical elements of sustainable agriculture (which must now be defined to include both agriculture and extractive activities) are dwindling—not a healthy trend for trees or people.

Some basic requirements have to be met before people like José—the people who will ultimately determine the success of the Rio Summit, the Sustainable

Development Commission, and similar initiatives—can be won over.

- José needs improved varieties of food and other crops, and new farming techniques that don't denude and deplete the soils, so he can farm the same area continuously. This will take more research.

- José needs information on how to farm his land more efficiently, with less damage to the environment. This will take trained extension workers.

- José needs information on the potentially valuable natural products in his parcel of the forest, and have continuous access to competitive markets for these products.

- José needs all-weather roads and access to markets so he can diversify his crops and sell them. When José starts making money from his farm, as opposed to mining the natural resources on it, he will start to manage the land in a more environmentally suitable way. This will take the commitment of José's government and financial support from outside of Brazil.

- José and his family need simple health, nutrition, and education services in the outlying areas where they live. If poor nutrition, health, and education problems can be improved through programs targeted to people like them, then José will be able to go beyond his seemingly short-term farming strategy that can lead to land abandonment.

Any investment aimed at conserving or preserving the environment in countries such as Brazil, Ethiopia, or the Philippines must be accompanied by a plan to ensure food security for their José Carvalhos. Without such an approach, the wide gap between the international preoccupation with saving the environment and the short-term food needs of rural people will never merge.

While the members of the United Nations General Assembly argue about the operational conditions of their Commission, José Carvalho's saw continues to buzz. It will do so until the Rio declarations are translated into something that will improve his family's well-being. ■

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Send abstracts, papers, or panel proposals by 3/1/93 to:

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