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REVIEW OF:

MISSING A MOVING TARGET? COLONIST TECHNOLOGY DEVELOPMENT ON THE
AMAZON FRONTIER. by Michael Richards 94 + xvi pp., 21.0 X 14.8 X
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This book proposes to provide a review of recent published and grey literature on the subject identified in the title. It provides a useful review of much of this information. One feels, however, a certain ambivalence about exactly what the 'target' is. Pioneer farmers are identified as the 'target' in the moving target analogy (p. 29). But, perhaps it really is the objective of slowing deforestation that is the target, and changing the behavior of pioneer farmers represents a means to this end. It is important not to confuse the two.

The moving target analogy is important in framing the problem and the type of solution that gets recommended. In trying to hit a moving target, as in shooting a rabbit with a gun, one achieves success by having reliable equipment (the gun), good aim, and capacity to second guess where the rabbit will jump next. In trying to deal with development decisions in a fast-changing frontier situation, however, what is needed is not a better technological fix (such as green manure), but the initiation of a process that is capable of adapting to changing situations.

The interests of UK Overseas Development Institute (ODI; formerly the Overseas Development Administration: ODA) are mentioned as a guiding factor in the review (p. 3). There seems to be a tension--almost a waffling--between endorsing technological solutions that are the bread and butter of government aid agency programs, and more radical conclusions on the need for deeper reforms. Technological alternatives (p. 3) represent what the ODI might fund, rather than what the Brazilian Government could do in a serious program of reforms aimed at slowing deforestation. Tax laws, agrarian reform, road-building decisions, land titling, credit policies, etc., are taken as givens in most discussions of 'technology development', but these are exactly the areas where government changes could have real effects on deforestation.

Richards asserts that "effective colonisation can be a cost-effective strategy for tackling poverty, which would have negative environmental effects wherever it was" (p. 7). This certainly is 'politically correct' on all sides, and sounds like ODI talking. Richards believes that small farmers are the key to deforestation, and that the key to reducing the impact of small farmers is to improve their productivity so that they (1) fill their stomachs with what is produced on less land and (2) don't sell out to 'second wave' speculators and ranchers. Boosting the yield and sustainability of the productive systems used by the

colonists are seen as the key to the problem: "Extensive agroforestry has the potential to work at the crux of the problems of colonist agriculture, which involves increasing the ratio of cropped to fallow years" (pp. 50 & 63). Green manure and minimum till are recommended (p. 28), as is forest management by colonists (p. 64).

In line with Richards' belief that improving living conditions in the countryside will keep small farmers from selling out, he states that "urban poverty is more expensive to service than rural poverty" (p. 66). This seems unlikely to this reviewer. Consider the cost of a school or a health center placed in an urban slum, where thousands of poor people are benefitted, as compared to the cost of one in an extractive reserve in Amazonia, where transportation makes establishment more expensive and where the number of people attended is much less. If the only criterion is the number of poor people attended per unit of expense (as opposed to other criteria, such as environmental benefits of maintaining certain traditional populations where they are), then urban programs are a better deal.

One gets the impression that Richards has much more direct experience in the Spanish-speaking countries than in Brazil. This is suggested by a sprinkling of errors regarding Brazilian geography, such as placing Tomé-Açu in "western" Amazonia (p. xii) and Santarém on the Transamazon Highway (p. 55). Discouraging observations from Amazonia are often softened by juxtaposing mention of one or another success story from Central America or Mexico. Most important is a tendency to underplay the role of cattle and speculation. The critical role of speculation is basically unique to Brazil. In Marabá (Pará), for example, land values triple by cutting forest and sowing it to pasture (p. 17). That kind of return would be pretty hard for colonists to match with green manure, or even for urban capitalists to match investing in the stock market.

Richards believes that "cattle ranchers and speculators ... rarely enter an area until colonist farmers have cleared the land for them" (pp. x and 6). This scenario was true, for example, for the early days of the Belém-Brasília Highway (in the 1960s), but many of the large ranches in places like northern Mato Grosso today don't fit this picture. Mato Grosso has the heaviest concentration of large ranches, and, together with adjacent areas in Pará that are socially similar, this is the primary focus of clearing activity. In the 1992-1994 period, the state of Mato Grosso represented 41% of all of the deforestation activity in Brazilian Amazonia.

Richards says that there are "no firm data on the proportion of deforestation caused by small farmer colonists" (p. 5). This is not really the case [see Ambio 22(8): 537-545 (1993)]. Small

farmers accounted for only about 30% of the clearing activity in the Brazilian Amazon in 1990 and 1991--the remaining 70% being attributable to ranchers. The dominance of ranchers, relative to small farmers, is the most salient feature of deforestation in Brazilian Amazonia. The distinction is obviously critical to "hitting a moving target."

Perhaps part of the reason for going light on ranchers is the belief that "The late 1980s saw the ending of ranching incentives" (p. 10). Not so! The decree in question (which did not come until 25 June 1991) only suspended new incentives--it did not revoke the "old" (already approved) incentives. Rapid deforestation by ranchers is very much a thing of the present.

In addressing the impact of small farmers, Richards uses the term 'slash-and-burn' as synonymous with shifting cultivation (p. 3). However, these are not really the same thing. The difference is more than semantic, and is critical to what Richards frequently refers to as the "crux of the colonist's problem": decisions on when to begin and end the fallow period.

Shifting cultivation is a traditional farming system in which a long fallow period regenerates site quality for continuation of a repeated sequence of cropping and fallowing. Slash-and-burn, on the other hand, is only the first step in this sequence, and is also the first step in the much more common sequence in Brazil where forest clearing is followed by an annual crop and the land is then converted to cattle pasture.

The faith in improving the production systems used by colonists as an anti-deforestation measure is based on the premise that colonists will stay on their land and will slow their clearing if only they can be shown how to produce better yields. A contrary view is dismissed as a "minority viewpoint" (p. 29). As the source cited for that 'minority viewpoint', I rush to defend it! The problem is that the colonists who come to Amazonia from other parts of Brazil are not classical peasants: they have a virtually insatiable demand for goods and do not stop clearing when their stomachs are full. Perhaps the argument supporting this view was not correctly understood: the case in point is described as "re-investment in cocoa farming of cocoa profits in Rondônia" (p. 29). Really, it was the lack of re-investment in cocoa: when a farmer gets an influx of cash from selling a good harvest of cocoa, the money is often invested in pasture and cattle rather than in the more environmentally desirable perennial crop. In other words, not only do farmers not stop clearing when they get more money, but they sometimes even do it more quickly than otherwise.

Much of the information given in the book actually supports the 'minority viewpoint', rather than the one adopted by the book's author. An example is "data showing that land turnover has been faster in situations with increasing yields and incomes"

(p. 29). Another is that "some .. argue that raising agricultural productivity or providing credit can hasten deforestation" (pp. xi and 28). A review of literature on pioneer farming throughout Latin America found "no evidence in which the granting of secure land tenure led automatically to reforestation" (p. 57). In Brazilian Amazonia, "in spite of reasonable tenure security less than half the settlers in one area [in Rondônia]... [remained] on their plots one to three years after getting their settlement rights" (p. 6). Other studies have found "no correlation between incomes and stability" (p. 69), and no higher likelihood of failure on poor soils than on excellent ones (p. 68).

Observations that don't fit with Richards' primary premises are labeled with such terms as "extreme", not "positive", and "minority viewpoints" (e.g., pp. xi, 28, 69). I hasten to point out that what is important is whether or not different views are correct, not whether they are "extreme" or "positive". In reading the book one repeatedly suspects that certain cows are just too sacred to be questioned.

After all of this, the book takes a surprising turn at the end. Richards "finds that incentives linked to policies and institutional factors are more important than appropriate technology" (p. 68). He seems a bit uncertain as to how to hit his small farmer target with his new 'institutional' silver bullet, and adds that "institutional and infrastructure support must be complemented by policies which discriminate against second-wave colonists" (p. 69). How this very critical caveat is to be put in practice is not specified.

The book concludes that "Support to grassroots and support institutions like church-based NGOs and emerging rural labour unions should be of the highest priority" (p. 70). Somehow, this doesn't sound like ODI talking anymore.

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