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COMMENT

Containing destruction from Brazil's Amazon highways: Now is the time to give weight to the environment in decision-making

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The BR-163 Highway (Fig. 1) was originally built by the Brazilian Army in 1973 and 1974. It has remained passable since, although poor road conditions in the unpaved portion (the 646-km portion in the state of Pará from the border with Mato Grosso to Trairão) impede use of the road as a significant export route. Reconstructing the highway has been a (so-far unimplemented) part of an evolving series of plans for massive expansion of infrastructure: *Brasil em Ação* (Brazil in Action) for 1996-1999, *Avança Brasil* (Forward Brazil) for 2000-2003, and the Pluriannual Plan for 2004-2007 (Fearnside 2002, Laurance *et al*. 2001). Soybean plantations in the northern part of the state of Mato Grosso have been rapidly expanding, partly in anticipation of the BR-163 being reconstructed and paved (Fearnside 2001). The governor of Mato Grosso since 2003 is Brazil's largest soybean entrepreneur and a major force in inducing the federal government to pave the road. With the BR-163, northern Mato Grosso would be linked to the ports of Miritituba and Santarém (Fig. 1), halving the current distance for transportation, as currently soybeans from northern Mato Grosso are exported through the port of Paranaguá, in the state of Paraná. A future plan would take the soybeans by rail from Cuiabá to Santos. Cost savings for soybean export of US$11.6/tonne relative to the rail route through Santos (Alencar *et al*., 2005) provide an economic argument for the BR-163 project. Soybean production in northern Mato Grosso was 3.61 million tonnes in 2004 (Alencar *et al*. 2005), worth approximately US$813 million. Nevertheless, even with substantial monetary benefits for the BR-163, the various forms of impact from the project must be quantified and compared to the benefits before a decision is made (Fearnside 2005).

[Figure 1 here]

How and when the BR-163 is paved could make a great difference to the impacts caused by the road. The current situation is one of lawlessness, described by the International Advisory Group of the G-7 Pilot Program to Conserve the Brazilian Rainforest as a climate of open and declared disobedience with respect to the rule of law (IAG 2004). Enforcement of environmental laws is particularly lacking. The Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA) has maintained a base at Itaituba, which since 2003 has operated a checkpoint at the junction of the BR-163 and the Transamazon Highway. This stems most of the flow of illegally cut timber to the port of Santarém. Unfortunately, IBAMA has not been able to establish a similar checkpoint at the southern end of the highway where the BR-163 crosses the border between Pará and Mato Grosso. In fact, the IBAMA office in Guarantã do Norte has been burned twice, presumably by local loggers. IBAMA was also unable to establish a base in Novo Progresso where, in 2003, newly hired IBAMA employees were posted to the town but fled under threat of death.

The IBAMA base at Itaituba has been maintained with considerable heroism on the part of the staff. The office and helicopter pad are in a barbed-wire compound surrounded by a city that is dominated by an openly hostile elite of loggers and ranchers. In 2004 the Itaituba staff refused to be evacuated in helicopters sent by order of the IBAMA headquarters in Brasília; to leave would have demoralized them in their effort to force local loggers to comply with federal environmental regulations. While the example of the Itaituba outpost is heartening, it is clear that more is needed than the bravery of a few dedicated individuals. There must be a sustained commitment to maintain multiple offices of IBAMA and other agencies throughout the region where the highway passes, as well as in other areas to which *grileiros* (land thieves) from the BR-163 are already spreading. Some are even establishing claims in the area of Apuí (Amazonas) over 1000 km away by road from source areas on the BR-163.

A key necessity is time for efforts to bring the BR-163 area of influence under a state of law and to have reasonable assurance that this will prevail. This is illustrated by a controversy in 2002 over whether the area was on a path towards 'governance' that would attenuate the road's impacts (Nepstad *et al*. 2002a; 2002b, Laurance & Fearnside 2002; Soares-Filho *et al*., 2004). Unfortunately, history has shown how tenuous the incipient signs of governance were. In Guarantã do Norte, where the election of a 'green mayor' gave rise to the hopes for governance, the head of Brazil's National Fund for the Environment (FNMA) was kidnapped in November 2003 and held hostage until the mayor agreed to abandon plans for creating two protected areas. The IBAMA office, last burned on 23 November 2004, has remained only partially operational.

Efforts to bring governance to the area have included those of non-governmental organizations (NGOs) conducting participatory mapping and holding a series of workshops with grassroots groups along the highway. This has been organized by a 'socio-environmental coalition' of 32 groups. The Institute for Environmental Research in Amazonia (IPAM), an NGO based in Belém, has had a leading role in this effort (Alencar *et al*. 2005). The effort is promoted as part of a Sustainable Development Plan for the BR-163 launched in March 2004 by an interministerial working group that includes the Ministry of the Environment and other ministries (Brazil, Grupo de Trabalho Interministerial BR-163 Sustentável 2004). However, a needed condition that is missing from the discourse concerning the BR-163 is that governance needs to be effectively implanted before authorizing the highway reconstruction. A recent simulation (Soares-Filho *et al*. 2006) includes a 'governance' scenario indicating that deforestation could be significantly reduced as compared to a 'business-as-usual' scenario. The likelihood of future events following the governance scenario is, of course, the key assumption.

The environmental impact statement for the portion of the road in the state of Pará was completed in 2002, but remained unapproved until December 2005, when IBAMA authorized construction pending satisfaction of several conditional requirements. It is remarkable that the environmental impact statement contains virtually no comment on the principal impact of the road, namely the acceleration of deforestation spreading out from the highway and its associated side roads. Instead, the focus is on the impacts of laying down the roadbed itself. Suggestions to counter forest loss from the roadbed even include advice to 'help' any animals move out of the way if they are unable to move for themselves (ECOPLAN Engenharia Ltda 2002, pp. 44-45). The stimulation of activity by loggers, ranchers and *grileiros*, which would destroy thousands of times more forest and wildlife than the roadbed, are not mentioned. Instead, the assumption is made that agencies such as IBAMA will be 'made adequate to the new situation', and the overall project is concluded to be 'environmentally viable' (ECOPLAN Engenharia Ltda 2002, p. 72).

Policy implications

As illustrated by the examples above, highways planned in Brazil's Amazon region have tremendous impacts that are completely missed by the current environmental impact assessment and decision-making system as it operates in practice. Strengthening this system to make it capable of evaluating and properly weighing the environmental and social impacts of proposed projects is urgently needed. Not only must environmental countermeasures be

identified as part of the report-drafting process, but the measures themselves need to be effectively implanted prior to constructing or reconstructing the highways. As a precondition for approval of the BR-163, currently lawless areas must be brought under the rule of law and the land-tenure situation must be defined such that the current patterns of *grilagem* (land thievery) and land invasion are terminated. Creation of reserves is an essential element in containing deforestation (Ferreira *et al.* 2005, Nepstad *et al*. 2006), and these need to be decreed and implemented before a transportation project proceeds. Many of the lessons from this Amazonian highway apply to decision-making practices that are common throughout the world; learning these lessons would yield substantial environmental returns.

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FIGURE LEGEND

Figure 1 – Brazil with locations mentioned in the text.

Fig. 1


Amazon River
Manaus
Santarém
Belém
Itaituba
Miritituba
Trairão
AMAZONAS
Transamazon Highway
Apuí
PARÁ
Novo Progresso
BR-163 Highway
Guarantã do Norte
MATO GROSSO
Cuiabá
Brasília
N
W
E
S
Rio de Janeiro
Santos
PARANÁ
Paranaguá
Legal Amazon
Paved roads
Unpaved roads
0
500
1000 km