

The challenges to more sustainable ranching in the Amazon

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Pastures for ranching occupy 75% of deforested areas in the Amazon and most deforestation has been illegal. As a result, this sector has been the target of enforcement activities and environmental campaigns. In 2009, IBAMA (The Brazilian Environmental Agency) and the Federal Public Prosecution Service began legal action against ranches and meat-packing plants in Pará to avoid the marketing of cattle obtained from illegally deforested areas. In this *The State of the Amazon* we describe the environmental pressures on cattle ranching, the future scenarios with regard to those pressures and the means for making the sector more sustainable in the region, including: land title regularization; environmental enforcement and actions against clandestine slaughter; support for forest conservation; and increased productivity in already deforested areas.

Ranching and socioenvironmental impacts

Cattle ranching began expanding in the Amazon Legal due to policies for integrating the region during the 1960¹ and has continued to grow faster there than in the rest of Brazil over the last few years. According to the IBGE (The Brazilian Institute for Geography and Statistics), from 1990 to 2008 the cattle herd in the region went from 21.1 million head (18% of the national total) to 71.4 million (36% of the Brazilian total). Such an accelerated growth of ranching in the region has been possible due to good rainfall distribution that is propitious for pasture in the main producing regions; to subsidized credit; and to the low-cost or free use of land (including illegally occupied public lands)². However, such an expansion has caused socioenvironmental problems, such as illegal deforestation, use of labor analogous to slavery, a high rate of clandestine activity in agribusiness³ and land tenure conflicts⁴.

Discussions on global climate have also increased pressures on ranching. In 2005, deforestation for ranching was responsible for approximately 43% of Brazilian emissions of greenhouse gases, considering that 57% of emissions resulted from deforestation⁵ and that 75% of deforested areas are occupied by pastures⁶.

The increasing pressure on ranching

From the 1990s on, combating the negative impacts of ranching began to achieve greater emphasis involving pressure from the government and environmentalists. However, governmental efforts have been

faulty or insufficient. For example, the government has collected less than 5% of the total amount of fines issued for crimes against flora⁷ and has only partly carried out the Action Plan for Prevention and Control of Deforestation in the Amazon Legal (*Plano de Ação para a Prevenção and Controle do Desmatamento na Amazônia Legal - PPCDAM*) from 2004 to 2007⁸. Despite those failings, actions by the government and a drop in prices for cattle and soy beginning in 2004 helped to reduce the deforestation rate beginning in 2005⁹. However, at the end of 2007, deforestation began to climb, stimulated by an increase in prices for agricultural and ranching products.

Reacting to the return of deforestation, in December 2007, the President of Brazil issued Decree 6.321/2007 with various measures against environmental crimes. The National Monetary Council began to demand that, beginning in July 2008, rural properties greater than 400 hectares present evidence that they have requested land title and environmental regularization in order to obtain rural credit¹⁰. Furthermore, the Decree regulated the embargo of economic use of illegally deforested areas, as well as providing joint liability for the productive chain in acquiring products from those embargoed areas¹¹. Thus, a meat-packing plant that purchases meat from an area embargoed due to illegal deforestation is subject to environmental penalties.

Besides issuing new rules, the government intensified environmental enforcement beginning in March 2008 by means of fines, seizing of timber and embargoes of deforested areas. In June 2008, for the first time the federal government apprehended 3,000 head of cattle in the Terra do Meio Ecological Station in Pará based on Decree 6.321/2007.

In June 2009, the Federal Public Prosecution Service (MPF) in Pará and IBAMA began legal proceedings against 21 ranches (20 for not fulfilling environmental legislation and one for being located in an Indigenous Land) and another 13 meat-packing plants that purchased cattle from those ranches. Next, the MPF recommended that 69 companies that were consuming products obtained from those meat-packing plants cease acquiring them in order to avoid lawsuits. The MPF action was strengthened by a Greenpeace report that demonstrated the illegal source of raw material for the meat-packing plants and the rest of the productive chain, including supermarket chains, tanneries and sporting goods and clothing factories¹².

Less than a month after the beginning of prosecution by the MPF and the Greenpeace campaign, 35 retail chains and industries suspended contracts with the meat-

packing plants involved in the lawsuit. The Brazilian Supermarket Association (ABRAS) announced in August 2009 that it would demand certification to certify the origin of beef from its meat-packing plant suppliers¹³.

To avoid continuation of legal proceedings and be able to recommence operations, in August 2009 three meat-packing plants and the ranchers' representative signed a Consent Decree (*Termo de Ajustamento de Conduta*¹⁴ - TAC) with commitments to environmental and land title regularization. The meat-packing plants committed themselves as of the date of signing the TAC, not to acquire cattle from ranches belonging to areas listed as embargoed by IBAMA and for slave labor by the Ministry of Labor¹⁵, or which carry out new deforestation in the next two years. The meat-packing plants also committed themselves, beginning in January 2010, to buying only cattle from suppliers who present proof of having requested the Rural Environmental Cadastre (*Cadastro Ambiental Rural* - CAR) from the Pará State Environmental Secretariat (SEMA) and who beginning in July 2010 present a request for environmental licensing with SEMA. By July 2011 the producers will have to present the final environmental licensing, and by August of 2014, they must have concluded land title regularization of their ranches.

The Pará state government also signed a term of commitment to implement public policies to support land title regularization and ordering, including conclusion of Ecological-Environmental Zoning (ZEE)¹⁶. Furthermore, the government is to draw up, within six months, the term of reference for an independent audit to verify the terms for the TAC (which is to be approved by the MPF) and make available up to R\$ 5 million (nearly US\$ 2.7 million) per year for carrying out the audits.

MPF actions and independent reports¹⁷ have also had repercussions in the financial sector. The National Bank for Economic and Social Development (*Banco Nacional de Desenvolvimento Econômico and Social* - BNDES)¹⁸ determined new socioenvironmental guidelines for financing the ranching sector¹⁹, and began demanding adherence to the traceability system and verification of socioenvironmental regularity for the entire productive chain, as well as requiring an independent audit similar to the one established for the government of Pará by the TAC²⁰.

Faced with those pressures, on October 5, 2009, four of the country's principal meat-packing plants do signed a voluntary commitment for zero deforestation with Greenpeace²¹. Besides the commitment not to buy cattle coming from deforested areas after signing of the agreement, the meat-packing plants will demand land title and environmental regularization from suppliers on terms similar to those of the TAC signed in Pará. It

is relevant to note that, because no reliable traceability system has been implemented in Brazil²², all of these agreements call for adoption of reliable tracing and independent audits.

In November 2009, the federal government announced a 45% drop in deforestation from August 2008 to July 2009 in relation to the same period the previous year – the lowest rate recorded over the last 21 years (7,008 km²). This drop very probably occurred due to intensification of enforcement at the beginning of 2008 and the economic crisis begun in September of the same year.

The pressure is likely to continue. Shortly after announcing the drop in deforestation, the government also announced a commitment to a 36% to 38% reduction in projected Brazilian greenhouse gas emissions by 2020²³. Between 52% and 58% of the total of projected reductions would result from an 80% reduction of deforestation in the Amazon²⁴.

Scenarios for ranching

Recent pressures on ranching may lead one to believe that the sector will inevitably adjust itself to socioenvironmental rules. Thus, any increase in production would occur through increasing productivity of deforested areas instead of mainly through new deforestation. However, it is relevant to consider other scenarios due to counter-reactions from the sector and difficulties in adaptation. That is why we project the four following scenarios considering the plausible variations of critical factors.

Maintenance or increase of production due to increase in productivity. This scenario would result from the following factors. First, beef industries would expand concentration and thus would become increasingly susceptible to legal and market pressures to demand good practices from ranchers. The pressured ranchers would organize so as to overcome the barriers to investments in productivity (Box 1). The sources of investment might include subsidized public credit or payment for environmental services derived from the forest, such as global climate stability and formation of rainfall for Brazil's Center-South²⁵.

However, it is plausible that production might diminish before increasing or stabilizing. Some producers would find barriers to increasing productivity (see Box 1) and to fulfilling laws, be it due to costs (land title regularization²⁶, taxes and mandatory salary fringe benefits and environmental licensing) or to fears of sanctions resulting from past irregularities (e.g. fake land titles)²⁷. Market restrictions would continue and there would be a surplus of cattle, which for its part would lead to a drop in prices and production. This crisis might

Box 1. Is it worthwhile to increase pasture capacity for cattle ranching in the Amazon?

It depends on the scale of production (Figure 1). Estimates from the Anuário da Pecuária for 2002 to 2008²⁹ shown that intensive ranching for post-weaning grazing and fattening (approximately 1.3 Animal Unit (AU)³⁰/hectare/year) has been more profitable than extensive (around 0.7 AU/hectare/year) only on a large scale (5 thousand AU). Intensive raising without scale (500 AU) would generate a very low or negative rate of return, always lower than extensive raising, mainly due to low efficiency in use of the labor employed (low number of animals per employee).

The fact that intensive ranching is more lucrative, but does not predominate in the region is intriguing. The following hypotheses might explain that apparent contradiction: i) the precariousness of land title documentation or the risks of invasion of properties associated with land reform inhibits the acquisition of properties in order to increase the scale of production³¹; ii) squatters (posseiros) maintain extensive ranching (less lucrative) as a form of assuring land possession and consider the expectation of land increasing in value as a form of long-term remuneration³²; iii) investing in technologies implies increasing risks and/or supervising operations in the field at a level undesirable for most ranchers – for example, monitoring the calendar for grazing

length in a given pasture³³; and iv) many ranchers are unaware or do not believe in techniques for increasing productivity³⁴.

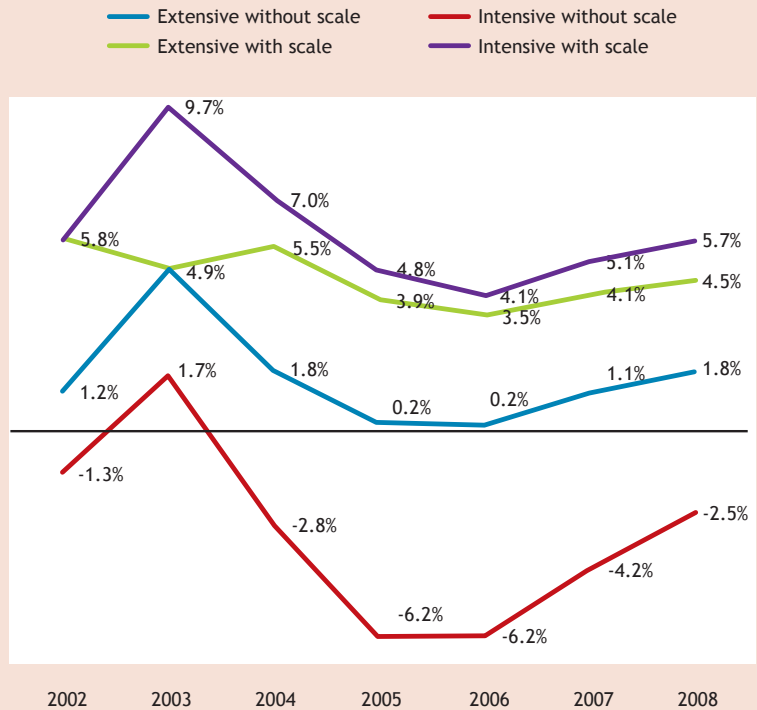


Figure 1. Average annual return on investment (% over asset) of post-weaning grazing and fattening in the principle ranching municipalities in the Amazon. Annual variation resulted mainly from variation of production costs and beef prices.

encourage negotiations for land title and environmental regularization and reopening of markets. Thus, after some years there would be an increase in investments in productivity that would lead to an increase of total production until it reached a level similar or greater than the present one²⁸.

Increase in production through new deforestation. The majority of producers would encounter the institutional and economic barriers described in the scenario above. Additionally, scarce credit or the non-existence of payments for environmental services would discourage maintenance of forests. Unable to react against the markets, producers would pressure for legal changes that would allow new deforestation, such as reduction in the percentage of legal reserve, amnesty for illegal deforestation³⁵ reduction of Conservation Units³⁶.

Beef producers, for their part, would seek lower prices, relax their voluntary environmental demands and require ranchers only to fulfill the new legislation that

would tolerate more deforestation. Thus, the ranchers would continue to increase production through deforestation.

However, this situation might result in environmentalist campaigns against companies that had assumed voluntary commitments against deforestation. Thus, those companies might reassume their commitments against deforestation to avoid problems with their reputation³⁷.

Production through productivity and deforestation. This scenario would result from partial advances from pressures and support from public policies and the market against illegal deforestation. One of the most relevant factors for this scenario would be the continuing market for clandestine meats, which in 2006 represented 34% of the Brazilian total³⁸. The animals are slaughtered without sanitary and fiscal controls and would also be immune from socioenvironmental control. Thus, the uncontrolled market might continue buying from ranchers who deforest.

Unfair competition from that market might lead legalized companies to pressure the government to increase control over clandestine slaughter in the medium term. Thus, the effectiveness of combating deforestation in the medium term might depend on the success of pressures against the clandestine beef market³⁹. Furthermore, fragile environmental control might favor the use of subsidized credit originally earmarked for increasing productivity for deforestation of new areas.

Decline of production. This scenario would result from continuation of legal and market pressures from the first scenario, without, however, many producers being able to regularize their environmental, land title and labor situations, even in the medium term. A reduction of production in the Amazon might increase the price of beef and increase the competitiveness of intensive ranching based on the integration of farming-ranching, semi-confinement and confinement in regions with better infrastructure and nearness to sources of inputs⁴⁰ and the market, such as the Center-West and Southeast of Brazil. There is also the fact that it would probably be safer and cheaper to track cattle in those regions than in extensive activities in the Amazon. Thus, ranching in remote regions of the Amazon with poor infrastructure would cease to exist.

Although they do not exhaust all of the possibilities, these scenarios indicate possible undesirable situations in socioeconomic and environmental terms, such as an increase in deforestation or a prolonged decline for ranching due to loss of competitiveness. On the other hand, an increase of production by increasing productivity would be preferable in environmental terms and might promote more lasting socioeconomic gains based on more stable relations with the market. For this reason, we suggest the following measures in order to stimulate a more rapid transition of ranching towards more sustainable production.

Recommendations for public policies

Create the bases for land tenure and environmental regularization. It is urgent that Ecological-Economic Zoning (ZEE) be concluded in the main producing states that lack zoning (Mato Grosso and eastern part of Pará), which, for its part, would define the percentage for recuperating the legal reserve at 50% or 80% of the property in areas already occupied⁴¹. That definition would facilitate adherence of producers to following the Forest Code and thus to achieving land tenure regularization. Furthermore, it is essential to equip and

establish environmental and land agencies throughout the interior so that they can respond more rapidly to the demands for regularizing producers and also to provide for repossession of unduly occupied public lands (e.g. Conservation Units and Indigenous Lands).

Increase the effectiveness of enforcement related to the environment and to illegal slaughterhouses. The government needs to strengthen control over the supply of illegal cattle as well as to inhibit the market for such cattle. In order to inhibit supply, the government needs to increase its effectiveness in combating environmental crimes (e.g. increase collection of fines) and avoid the irregular occupation and use of public lands (e.g. illegal land-grabbing and occupation of protected areas). Parallel to that, it is necessary to inhibit clandestine slaughter of animals, which, besides tax revenue losses and damage to human health, may encourage production based on illegal deforestation. To reinforce control over such slaughter, it would be necessary to establish individual tracking for all cattle, from birth to the meat-packing plants. Whatever system may be adopted, it will be essential for enforcement agencies and the market (e.g. supermarkets) to monitor tracking by means of independent auditors.

Concentrate and improve infrastructure and services in rural areas. This type of investment (e.g. roads, electricity, education and health) would improve conditions to facilitate private sector investment in land use productivity, including in ranching. Considering that public resources are scarce, governments should concentrate and improve infrastructure in the more occupied areas of the Amazon instead of expanding it along the new frontiers (e.g. BR-319 highway) with low population densities. ZEE and other analyses are necessary for identifying priority micro-regions to receive these investments⁴².

Support forest conservation and the increased productivity of ranching. Payment for forests environmental services would encourage producers to maintain and recuperate their legal reserves. That income, in turn, might favor investments in technologies and inputs to increase the productivity of ranching in regions where the return on investment is attractive (meaning, closer to the market). To this end, the private sector and the government should expand initiatives for remunerating environmental services from the forest, such as compensation for avoided deforestation and reforestation for carbon sequestration. Discussions towards an agreement to avoid climate changes are a unique opportunity to obtain national and international support for forest conservation and recovery.

NOTES

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- ¹ EMBRAPA. Criação de Bovinos de Corte no Estado do Pará. (S.I.). Available at: <<http://tinyurl.com/yhoufch>>. Access on: 10/23/009.
 - ² ARIMA, E.; BARRETO, P.; & BRITO, B. Pecuária na Amazônia: tendências e implicações para a conservação ambiental. Imazon: Belém, 2005. Available at: <<http://tinyurl.com/yzjuajj>>. Access on: 09/10/2009. WOOD, C.; WALKER, R.; TONI, F. 2003. Os efeitos da posse da terra sobre o uso do solo e investimentos entre pequenos agricultores na Amazônia brasileira. p. 427-436. In: TOURRAND, J. F E VEIGA, J. B. Viabilidade de sistemas agropecuários na agricultura familiar da Amazônia. Embrapa Amazônia Oriental. Belém – PA. 468 p.
 - ³ SANTOS, Marcos A. S. et al. Estudos setoriais 1: Mercado e dinâmica local da cadeia produtiva da pecuária de corte na região norte. Banco da Amazônia. Belém, 2007. Available at: <<http://tinyurl.com/yf27hgq>>. Access on: 08/21/2009.
 - ⁴ BARRETO, P.; PEREIRA, R.; ARIMA, E. A pecuária e o desmatamento na Amazônia na era das mudanças climáticas. Belém: Imazon, 2008. Available at: <<http://tinyurl.com/y8f7aob>>.
 - ⁵ According to Inpe, net emissions of CO² resulting from deforestation in 2005 were approximately 900 million tons - Mton (Available at: <http://tinyurl.com/yexec3g>). This amount accounted for 75% of the total of Brazilian emissions (1.202 Mton) resulting from changes in land and forest use estimated by the Ministry of Science and Technology in 2005 (Available at <<http://tinyurl.com/ybj8nwu>>). Thus, emissions from Amazon deforestation corresponded to 57% of total Brazilian emissions.
 - ⁶ Percentage of the area in rural establishments under pasture according to the IBGE [www.ibge.gov.br].
 - ⁷ BRASIL. Relatório de auditoria operacional. ATA de plenário. Tribunal de Contas da União. Brasília, DF, 13/06/2008. p. 268-348. Available at: <<http://tinyurl.com/yajblh5>>. Access on: 09/09/2009.
 - ⁸ GREENPEACE. Desmatamento na Amazônia: o leão acordou. 2008. Available at: <<http://tinyurl.com/ydn88la>>. Access on: 08/09/2009.
 - ⁹ Ibid note 4.
 - ¹⁰ Resolution of the National Monetary Council 3.545/2008.
 - ¹¹ Decree 6.321/2007.
 - ¹² Greenpeace. A farra do boi na Amazônia. 2009. Available at: <<http://tinyurl.com/ybec7pe>>. Access on: 09/08/2009.
 - ¹³ Interview with Sussumo Honda, president of ABRAS. Available at: <<http://tinyurl.com/yzxclze>>.
 - ¹⁴ Bertin, Kaiapós, Minerva and Coopermeat were the first meat-packing plants to sign the TAC with the Federation of Agriculture and Ranching for Pará (FAEPA). See complete documents at: <<http://tinyurl.com/y9fy2>>.
 - ¹⁵ Consultation of lists at the electronic addresses for IBAMA and Ministry of Labor, respectively: <http://siscom.ibama.gov.br/geo_sicafi/> e http://www.mte.gov.br/trab_escravo/default.asp>.
 - ¹⁶ Zoning defines rules regarding recuperation of the legal reserve, which would be 50% or 80% of the property, clarifying demands for fulfillment of the Forest Code and facilitating environmental licensing and monitoring. The only states to have concluded ZEE in the Amazon have been Rondônia and Acre. According to the Brazilian Forest Code the legal reserve is a portion of the private property where the native vegetation has to be maintained for conservation and sustainable use purposes (for example, forest management).
 - ¹⁷ bid note 4; Ibid note 13; Amigos da Terra, 2009. A hora da conta. São Paulo, SP: Available at <<http://tinyurl.com/ygkf6wq>>.
 - ¹⁸ BNDES is one of the main financiers of agribusiness in the country. The sum invested in the Amazon increased from R\$ 1.375 billion in 2000 to R\$ 12.605 billion in 2008. (See Amigos da Terra 2009. A hora da conta. São Paulo, SP).
 - ¹⁹ BNDES amplia exigências para apoio à cadeia produtiva da pecuária. 22/07/2009. Ministry of Development, Industry and Foreign Trade. Available at <<http://tinyurl.com/ythuy1>>.
 - ²⁰ Coincidentally or not, on June 12, 2009 the International Finance Corporation announced that it had decided to “discontinue its partnership” with the Bertin group. In June 2007 IFC had committed to lending US\$ 90 million to support expansion and modernization of that company, including in the Amazon. See communiqué from the IFC at <<http://tinyurl.com/yf4xey9>>.
 - ²¹ The commitment was signed by the following companies: Bertin, JBS-Friboi, Marfrig and Minerva. Available at: <<http://tinyurl.com/y8e32ea>>. According to Marcelo Furtado of Greenpeace, the signatories to the agreement account for between 30% and 40% of cattle slaughter nationwide (Personal communication).
 - ²² The current governmental tracking system (Service for Traceability in the Productive Chain for Cattle and Water Buffalo - *Serviço de Rastreabilidade da Cadeia Produtiva de Bovinos e Bubalinos* - SISBOV) is voluntary, but its reliability is low, which has led to restrictions in purchases by the European Union. (See: Rastreabilidade emperra exportações. 04/08/2009. Assessoria de Imprensa Acrimat. Rosana Varga. Available at: <<http://www.acrimat.org.br/novosite/noticias/234>>; and SISBOV: MAPA e CNA assinam termo de cooperação. 10/09/2009. Agência Brasil. Available at: <<http://www.acrimat.org.br/novosite/noticias/724>>.
 - ²³ Details of the announcement at: <<http://tinyurl.com/ykbngra>>
 - ²⁴ Estimate by authors based on the presentation: Cenários para oferta brasileira de mitigação de emissões, preparada pelo governo brasileiro. Presentation available at: <<http://tinyurl.com/ybt5s4u>>.
 - ²⁵ Some leaders in the rural sector who had previously resisted control of deforestation have already declared their support for zero deforestation and have begun demanding payment for environmental services. See the example of Blairo Maggi, governor of Mato Grosso, at <<http://tinyurl.com/ydwkc5y>>; and Kátia Abreu, Senator and President of the National Confederation for Agriculture, at <<http://tinyurl.com/yktzdhz>>.
 - ²⁶ As of 2003 there were about 300,000 rural holding totaling 32 million hectares in the Amazon according to Inkra.
 - ²⁷ See analysis of the risks of regularization at <http://wp.me/p___FHAp-4e>.
 - ²⁸ Producers farther away from markets may not be able to cover all of the costs of socioenvironmental and land tenure regularization. However, the increase in productivity in areas closer to the market might compensate or even more than compensate for those losses.
 - ²⁹ Data from the following municipalities: Barra do Garças and Alta Floresta, in Mato Grosso; Redenção and Paragominas, in Pará; and Ariquemes, in Rondônia. Source: Anualpec (2003 a 2009). IFNP. São Paulo, SP.
 - ³⁰ One Animal Unit is the equivalent of one adult cow.
 - ³¹ A rancher in Paragominas declared that the land title risk is one of the most complicating factors for the sector.
 - ³² MARGULIS, S. – Causas do Desmatamento da Amazônia Brasileira. Banco Mundial. Brasil, 2003 – shows that increase in land values increases the rate of return on the investment and discusses speculative occupation through ranching, even when it has low profitability.

³³ Observation of a rancher in eastern Pará who adopts techniques for improving productivity.

³⁴ Ibid note 33.

³⁵ Draft Law 6.424/2005 under discussion in the House of Representatives calls for amnesty for areas illegally deforested prior to 2006.

³⁶ Some Draft Laws that seek to reduce Conservation Units: Projeto de Lei (PL) 4.083/2008; PL 6.479/2006; Projeto de Decreto Legislativo (PDC) 2.224/2006; PDC 1.148/2008.

³⁷ In November 2009 the Wall Mart group was elected by the Guia Exame–Sustentabilidade publication as Sustainable Company of the Year due to its leadership in achieving support for a commitment by retailers to stop buying from areas with new deforestation (Guia Exame Sustentabilidade 2009, Editora Abril). Abandoning that commitment would compromise that company's credibility.

³⁸ Ibid note 3.

³⁹ In fact, during negotiations for defining the TAC in Pará, representatives of the formal meat-packing plants several times requested the Federal Public Prosecution Service to continue its actions focusing on clandestine meat-packing plants so as to avoid continuation of unfair competition.

⁴⁰ More intensive cattle-raising would depend on use of fertilizers and mineral salts, as well as grains and other sources of food for confined cattle.

⁴¹ In Pará, the ZEE project considers that areas deforested up to December 2006 and which are utilized for consolidating productive activities, may consider the legal reserve as being 50%.

⁴² The extension of roads in the region indicates the magnitude and complexity of the demand for investments in infrastructure in the Amazon. A survey by IMAZON has demonstrated that by 2008 there were 414 thousand km of roads in the region, of which 307 thousand were informal roads (74%). In prioritizing roads that are to be maintained, one should consider the socioeconomic return on the necessary investments. See approaches to analysis in JOHNSON, T. FG. The economic impacts of infrastructure development. p 85-102, 1996. In: Rural Development Research: a foundation for policy. (Ed.) Thomas D. Rowley et al. Greenwood Publishing Group. CT, USA.

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