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Avoiding greenhouse-gas emissions from land-use change in Brazilian Amazonia as an environmental service

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The term "environmental services" refers to the role of both 'natural' and anthropogenic mechanisms that supply public benefits such as biodiversity maintenance, water cycling and avoidance of global warming. Monetary payments based on these services could offer a sustainable alternative for supporting the rural population in Amazonia, rather than the present economy that is almost entirely based on destroying the forest. Avoiding greenhouse-gas emissions is the closest to providing significant monetary benefits. Debates of this role fall into three groups: the "data battlefield," the "theoretical battlefield" and the "political battlefield." The National Institute of Science and Technology for the Environmental Services of Amazonia (INCT-SERVAMB) is contributing to discussions in all three of these battlefields. On the data front we have improved estimates of biomass of Amazonian forests, especially those in Brazil's arc of deforestation. We also have advanced in modeling the advance of deforestation to reflect the effect of building roads and creating reserves. On the theoretical front we have suggested approaches to the effect of leakage and the value of time in assessing the benefits of Amazonian reserves, and we have contributed to debates on carbon accounting. On the political front we have suggested various ways that Brazil could change its positions in climate negotiations so as to maximize benefits for Amazonia, including taking on a cap (assigned amount) on national emissions and allowing trade of fully exchangeable (fungible) carbon rather than relying on payments through a fund. More information is available at: <http://inct-servamb.inpa.gov.br/>.