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**Problem statement:** The world has seen little progress curbing the destruction of ecosystems in developing nations. Economists have long argued that the global decline in the area of native ecosystems largely reflects the failure to create institutions that internalize the public values of intact ecosystems within the organizations and individuals that use these ecosystems. The argument implies that society can conserve ecosystems if those who make decisions about the uses of land are paid for the public benefits that their ecosystems provide. Conservation payments are an increasingly popular policy in developed nations, but they are rarely used in developing nations. In developing nations, policy-makers and scholars doubt that such policies would achieve conservation objectives as easily as economists say. Their skepticism is understandable because, even in developed nations like the United States, researchers have neither identified the conditions under which conservation payments work nor used an experimental research design to estimate the effect of payments on both conservation and the quality of life of households receiving the payments.

**Objective and hypotheses:** To address these gaps in our knowledge, a multi-disciplinary team will test 5 hypotheses: **(1)** performance payments generate a net increase in the area of protected forest rather than a displacement of deforestation to places outside of the target area, **(2)** performance payments improve conservation, in part, because they reduce the area of potential farmland available, and thus encourage agricultural intensification on previously deforested land, **(3)** the income increases from performance payments improve household quality of life (e.g., nutrition, health), **(4)** performance payments increase income and reduce the demand for child labor in agriculture, thus encouraging school attendance, and **(5)** performance payments have a significantly larger positive effect on household quality of life when they are given to female heads of households.

**Methods:** The team includes an environmental economist (Ferraro), a biological anthropologist (Leonard), an econometrician (Karlan), a cultural anthropologist (Godoy), and a remote-sensing specialist (Wilkie). The team will test the hypotheses in an area of Bolivian tropical rain forest threatened by increasing encroachment from smallholder farmers: the Pilón Lajas Biosphere and Indigenous People's Reserve. The Reserve contains about 5,000 indigenous people inside it. To reduce biases from self-selection and endogeneity, we will use an experimental research design. We will select at random ~200 households of farmers from stratified samples to receive payment to protect some fraction of the forest under their control and ~200 households to serve as controls. Smallholders in both groups will have secure property rights to land and will live at the agricultural frontier. We will then compare the difference between households in the control and treatment groups in area of forest cleared and household quality of life before and after receiving payments. We will use surveying tools and aerial videography to measure deforestation, anthropometric techniques to measure nutrition, and surveys to measure other aspects of household quality of life. We will pay households during 3 consecutive years and measure outcomes twice a year, sufficient to test for consistency in results across years. The surveys yield a panel of ~1,600 observations. A key aspect of our field experiment is the measurement of household reservation prices for forgoing agriculture and protecting forest. During the first 6 months, we will use an incentive-compatible auction and surveys to elicit household reservation prices. Research will last 5 years, will start in 1/03, and will be done with graduate students from different disciplines in the behavioral sciences.

**Significance:** **Theory:** We test basic principles of economic theory and explore the conditions under which performance payments achieve conservation objectives and improve household quality of life. **Methods:** We contribute to the development of interdisciplinary experimental designs and use a novel application of an incentive-compatible auction that will contribute to research on assessing and calibrating preference data elicited through surveys. **Public policies:** We assess whether conservation payments reduce deforestation and encroachment into lands of indigenous people. Payments may be a simple way of achieving social objectives that have so far cost billions of dollars and thousands of lives. The proposed work also provides insights that can improve the design of conservation payment initiatives in the United States, which currently consume more than \$2 billion annually. **Graduate training:** We use the project to train graduate students from different behavioral sciences in multidisciplinary methods for collecting and analyzing primary household data and implementing controlled field experiments. We expect at least 8 PhD theses to result from the study.