Protected natural areas in Costa Rica reduced poverty by 16 percent in neighboring communities, mainly by encouraging ecotourism, according to new research published today in the Proceedings of the National Academy of Sciences.

Although earlier studies indicated that establishing protected areas in poor regions can lead to reductions in poverty, there was no clear understanding why or how it happens.

"Our goal was to show exactly how environmental protection can reduce poverty in poorer nations rather than exacerbate it, as many people fear," says co-author Paul Ferraro, a professor of economics and environmental policy in the Andrew Young School of Policy Studies at Georgia State University.

In their article, "Quantifying causal mechanisms to determine how protected areas affect poverty through changes in ecosystem services and infrastructure," Ferraro and Georgia State alumnus Merlin Hanauer, now on the Economics faculty at Sonoma State University, examine three potential causes of poverty reduction linked to the establishment of protected areas:

- changes in tourism and recreational services,
- changes in infrastructure including roads, health clinics and schools, and
- changes in ecosystem services such as the pollination and hydrological services a protected area may offer.

They find that increased tourism accounts for two-thirds of the reduction in poverty caused by protected areas. Changes in infrastructure and land use had little effect on the poverty in surrounding communities.

"Our results suggest that by using existing data sets such as poverty estimates from census data,