

Undernutrition and gut microbiota

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Timely measurement of mass

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Eco-Compensation For Giant Panda Habitat

CHINA'S ACHIEVEMENTS IN GIANT PANDA CONSERVATION (1) are now jeopardized by recent tenure reform of its 167 million hectares of collective forest (2). The reform enables individual farming households to transfer or lease operation rights to outside enterprises. By allowing commercial logging, increased collection of firewood and nontimber forest products, unmanaged tourism, and certain types of industrial development in collective forests where these activities were previously restrained, the reform threatens to deforest, degrade, or disturb up to 3457 km² of giant panda habitat, or 15% of what remains. In one recent transaction, a timber company purchased 150 km² of collective forest in Shizhu County, Chongqing Province at a reported price of \$2.3 million USD (\$153 USD/ha) (3).

China spent more than \$100 billion USD on eco-compensation to buy back development rights from local communities to secure the continued provision of ecosystem services (4). Extending the eco-compensation program to giant panda habitats could reduce the threat that tenure reform poses to the giant panda while fulfilling the intention of the reform to increase local economic benefits. Communities would sign long-term binding preservation agreements for forest habitats outside of existing reserves in exchange for monetary compensation from county departments. A reasonable price for eco-compensation payments might be \$70 USD per hectare per year for 48 years, following the successful experience of the People's Government of Kaihua County leasing 63 km² of collective forest in Gutianshan National Nature Reserve of Zhejiang (5). \$240 million USD in effective eco-compensation payments could prevent a decline in the wild giant panda population. An additional \$2.25 billion USD for effective eco-compensation and habitat restoration could increase the population to substantially more than the threshold of 1000 individuals below which a stable population is classified as vulnerable (6).

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