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ECONOMY

Using the Airbnb Model to Protect the Environment

Economic View

By SEEMA JAYACHANDRAN DEC. 29, 2017

As the world's population grows, so does demand for land. One upshot is that setting aside big tracts to protect endangered species and carbon-rich forests is increasingly expensive.

Enter the Airbnb economic model. While it's not a panacea, it provides attractive solutions for conservation as well as housing.

Much as homeowners can use Airbnb and other services to turn their living space into pop-up hotels when demand warrants it, conservationists are creating "pop-up nature reserves" on idle land.

In environments as different as North America and Africa, new programs are preserving land through short- and long-term deals that pay people to protect nature on their own land. The innovation makes it possible to transform a binary approach to land use — either devoting it to private development or turning it into a

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Consider how Airbnb works. Think of Minneapolis during the coming Super Bowl, when hotel rooms are scarce and residents will be enticed to rent their homes to football fans. Something like that happens in the environmental realm, too: There is a surge in demand for protected land when migratory birds are passing through an area or a threatened species is breeding.

In the United States, the nonprofit Nature Conservancy has been a pioneer in bringing the “sharing economy” business model to conservation. It has been temporarily expanding wetlands for migratory birds in California’s Sacramento Valley since 2014. In early fall, when birds head south for the winter, and again in early spring on their return journey, birds need larger protected areas than the current mix of parks and nature preserves allows, as the website Howstuffworks reported in August.

The big insight was realizing “we could use a rent rather than buy model,” said Mark Reynolds, an ecologist with the Nature Conservancy, which pays rice farmers to flood their fields for the few crucial weeks each fall and spring. Rice growers routinely flood their fields for irrigation and to decompose crop residue after harvest; through the conservation program, named BirdReturns, they do so during periods when the fields would have been dry.

A team of ecologists and economists figured out how much to compensate the farmers for this change. They ran “reverse auctions” in which landowners specified the lowest payment that would entice them to flood their fields for a given four- to eight-week period.

This auction system adjusts payments to farmers’ costs. For example, flooding during the end of the spring migration season is trickier to fit into an annual rice-growing schedule, so bids — and payments — are higher then. The auction model is also flexible when the weather fluctuates. The early years of the program occurred during California’s prolonged drought, but abundant rainfall in 2017 meant that BirdReturns could dial back the amount of pop-up wetland it procured this year.

Climate change and society’s expanding footprint are making this dynamic approach to conservation increasingly useful.

"We think this is a big idea," Mr. Reynolds said, adding that it "could really help us with adapting to change."

Climate change might alter natural wetlands and when and where birds migrate. BirdReturns can more nimbly adjust to those changes. The team predicts the birds' migratory paths using crowdsourced data from amateur bird-watchers and combines that data with satellite images of surface water, enabling the establishment of temporary wetlands at the right times and places.

Short-lived nature preserves fulfill the needs of migratory birds, but long-lasting conservation efforts using private land are urgently needed, too. Many such efforts are underway. For example, the United States already enters into 30-year and permanent easement contracts with landowners to protect wetlands or to retire land from farming.

In other parts of the world, governments and nonprofits are compensating people for preserving forests. My research looked at a conservation group's program in Uganda that made annual payments to farmers if they refrained from chopping down forestland that they owned. The approach turned out to be a remarkably inexpensive way both to protect forests and to reduce carbon emissions.

The farmers continued to own the land, live on it and grow crops in already-cleared areas. In essence, the conservation outfit rented the trees from the landowner, while the owner held on to other land-use rights. Buying up the forest outright and turning it into traditional reserves not only would have cost more money, but it would have displaced thousands of people from their homes.

Offering payment in exchange for conservation efforts and letting people choose whether to participate also has advantages over simply banning deforestation. In the Ugandan setting, a ban would deprive poor people of much-needed income generated by selling timber or using newly cleared land for agriculture.

Moreover, a market-based approach can balance conservation goals with critical needs like growing food. If a certain landowner is outstanding at farming — producing a lot of food for the community — it could very well make sense for her to continue to farm her land, even if doing so means clearing some forest.

Ideally, less productive farmers will participate in the program because food production — and profit — sacrificed by keeping their forest intact is small.

That's why proper pricing is important. If you offer an appropriate payment for conservation, the best farmers will decline it because they can earn more by expanding their farms, while the mediocre ones will sign up. Markets can help us find those opportunities.

As a host of political and demographic factors make it impractical to meet conservation goals solely through dedicated nature reserves, we are fortunate to have some alternatives. Innovative programs are demonstrating how land can do double duty and competing needs can coexist. With the help of market-based approaches, we can often enlist private land to serve nature's needs.

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