

Eat less meat, save the planet

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Credit: USDA.

To conserve the planet's ecosystems and their diverse plant and animal species, human populations should consume less meat, according to Florida International University researchers.

Producing livestock, including cattle, goats and sheep, for [human consumption](#) is the single largest driver of habitat loss and deforestation worldwide. It accounts for 75 percent of agricultural land and is a leading cause of climate change, soil loss, water pollution, and the loss of

wild carnivores and herbivores.

In a [recent study](#) published in *Science of the Total Environment*, FIU biologists Brian Machovina and Kenneth J. Feeley argue in order to decrease the land demands and ecological footprint of agriculture people should reduce [animal products](#) in their diets to a daily average of 10 percent or less of calories. That is a tall order when trying to balance the availability of food for people, their desire to eat meat, and the need to increase nutritional health. The recommended reduction is equivalent to a daily serving of meat that is about the size of a deck of playing cards.

"Reducing animal-based product consumption is realistic if we can offer delicious, convenient, plant-based foods that people want to eat," Machovina said. "The power of the market is what drives [meat consumption](#), and the power of the market can equally drive its reduction. Awareness about the damage of meat consumption to personal and [environmental health](#) can help change these trends through market-driven conservation."

By analyzing data sets of the Food and Agriculture Organization of the United Nations, Machovina found the production of meat in the most biodiverse countries in the world—including those in Asia, Africa and South America—is increasing rapidly. Some countries may require 30 to 50 percent more land beyond their current agricultural areas just to meet their [meat production](#) needs by 2050. China is of particular concern because of its very rapid rise in human population and meat consumption, as well as the hunting and consumption of wild animal meat in Africa and Asia.

But there is hope, according to Machovina. Growing crops, including fruits, vegetables, legumes and soy protein would increase the number of food calories available for people by as much as 70 percent on the agricultural lands currently in use. Soybeans contain twice the protein of

beef, pork or chicken, and 10 times more protein than whole milk. Cultivating them requires less land area than what is needed to raise livestock. This could allow an additional 4 billion people to be fed, surpassing the estimated [global population growth](#) of 2-3 billion people.

In addition to helping the planet, the researchers say decreasing the intake of animal products can benefit health. Heart disease is the leading cause of human death and is strongly associated with consuming meat and other animal products.

"I had no idea livestock production was the number one use of land by mankind, the largest driver of deforestation, or that animal product consumption is the underlying cause of most deaths via circulatory disease," Machovina said. "But when I started reading on the subject and focusing my work on how animal consumption is affecting biodiversity, the results have been profound. When people experience the positive changes plant-based foods can have on their health and the health of their loved ones, the opportunity for widespread change is powerful."

Machovina's research on ecology and food security, including the effects of meat consumption by humans on the environment, has been featured in various journals, including [PNAS](#), [Nature](#) and [Science](#). He has also presented his work at [TEDxFIU in 2014](#).

Provided by Florida International University

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