

## THE EFFECT OF OXEN ON AGRICULTURAL PRODUCTIVITY AND FARM INCOME IN NICARAGUA.

Summary of research done by Dr. Garcia-Fuentes, Dr. Yoshi Fukasawa, Connie Vargas and Rodrigo Mireles

Imagine being a farmer and being too poor to afford a tractor. That's true for many farmers in Nicaragua, the second poorest country in Latin America, where 42% of the population lives on less than US \$1 a day. Two MSU professors (Dr. Pablo Garcia-Fuentes and the late Dr. Yoshi Fukasawa) and two MSU students (Connie Vargas and Rodrigo Mireles) coauthored the research. Dr. Garcia-Fuentes, Dr. Fukasawa, and Mr. Mireles traveled to Nicaragua to examine how oxen could help alleviate the poverty among farmers.

You may be surprised to learn that oxen still play a vital role in the agriculture of developing countries. Draft animals have been an essential part of farming for thousands of years, with archaeological evidence of draft animal use dating from around 3,000 BC. Even though oxen are far cheaper than tractors, many Nicaraguan farmers still can't afford to own oxen.

The research team found that draft animals could play a key role in reducing poverty for Nicaraguan farmers if used more extensively. Their study showed that farmers who used oxen had significantly higher gross incomes than those that did not. Those that hired oxen had a 25.5% higher gross income than those who did not, while those that owned their oxen had an 18.13% higher gross income than those who used no oxen at all.

Nicaragua is in critical need of an agricultural program designed to finance oxen for farmers. If Nicaraguan farmers had greater access to financing and could use oxen, they would be much more likely to increase their income and reduce poverty in rural areas.

Garcia-Fuentes, P., Fukasawa, Y., Martinez-Rodriguez, E. A., Vargas, C., & Mireless, R. (2018). [The Effect of Oxen on Agricultural Productivity and Farm Income in Nicaragua](#). *International Journal of Food and Agricultural Economics*, 6 (4), 21-33.