

**Consortium on Law and Values (CLV) in Health, Environment & the Life Sciences
2013-2014 Research Awards Final Report**

**What is the Optimal Price of Carbon to Compensate Farmers' Profit Loss from
Conservation?**

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1. Introduction

The main purpose of this project was to construct the first globally consistent production cost data set and use it to analyze the relative welfare loss of farmers from conservation decisions globally. The globally consistent production cost is critical information that is necessary for efficient land use decisions, but such data set does not exist in the literature. The production cost data set can be used to estimate farmers' lost agricultural profits that result from conservation planning. In addition, the cost data can be linked to biophysical data sets such as global carbon sequestration to estimate the price of carbon that would incentivize farmers not to produce agricultural crops on their land. The generous funding support from CLV was mainly used to construct and validate the globally consistent agricultural production cost data set.

2. Financial summary

Most of the awarded fund was used to pay for my stipend during June and July, 2014, and to support my travel to professional meetings. The funding during the summer enabled me to focus my entire time on this project. Having undivided time was important given that the job required extensive data management and thinking through issues that arose during the process of making globally consistent agricultural production data. I also used the funding to support my trips to two professional meetings: American Economic Association (AEA) in Boston in January 2015 and American Agricultural Economics Association (AAEA) in San Francisco in July 2015. I interacted with other scholars about my project at the meetings, and had a chance to present a poster at the AAEA meeting.

3. Results

Working Paper

Jung, S., S. Polasky. 2015. A Missing Component in Calculating the Economic Rent for Land-Use Decisions.

Presentations

Jung, S., S. Polasky. 2015. Global Tradeoff between Carbon and Agricultural Return: Construction of Global Agricultural Production Cost Dataset. Environmental and Resource Economics Seminar. Department of Applied Economics. November 10, 2014.

Jung, S. 2015. How Much Should We Compensate Farmers in Global South to Mitigate Climate Change While Meeting Increasing Food Demand? Selected Poster Presentation. AAEA annual meeting. San Francisco, CA. July 26-28, 2015.

4. Future project plans

This project became a part of my last dissertation chapter, which I defended in August, 2015. My PhD advisor and I are currently revising the draft to publish it in an academic journal. The current draft does not involve the application of the data with other available biophysical data sets, which will be developed further in the near future. I expect to use this constructed data set in other projects to answer interesting research questions related to, but not limited to, food security, development, and environment issues.

The constructed data will eventually be available to the public through the Natural Capital Project (www.naturalcapitalproject.org), which originally started to support the project.