



ELSEVIER

Contents lists available at SciVerse ScienceDirect

Journal of Forest Economics

journal homepage: www.elsevier.de/jfe



Do farmers or governments make better land conservation choices? Evidence from China's Sloping Land Conversion Program

Peter Kelly^{a,*}, Xuexi Huo^b

^a School of Economics, Renmin University of China, 59 Zhongguancun Street, Haidian, Beijing 100872, China

^b College of Economics and Management, Northwest A&F University, 3 Taicheng St. Yangling, Shaanxi 712100, China

ARTICLE INFO

Article history:

Received 6 March 2012

Accepted 19 August 2012

JEL classification:

O13

Q23

R52

Keywords:

Reforestation

Payments for environmental services

Sloping Land Conversion Program

China

ABSTRACT

In developing countries with small holdings, targeting payments-for-environmental-services prices to site-specific environmental benefits becomes administratively impractical. Instead, governments fix price and either dictate parcel enrollment or let farmers decide, which might be expected to maximize environmental benefits and minimize opportunity costs, respectively. No paper has actually tested such hypotheses in a developing-country setting. This paper examines China's Sloping Land Conversion Program, with 32 million planting forests, using a unique dataset on 3397 parcels, including farmer-choice and government-choice parcels. Farmers consider similar criteria to local governments but weight land characteristics within the farm (not the landscape) and household characteristics.

© 2012 Department of Forest Economics, Swedish University of Agricultural Sciences, Umeå. Published by Elsevier GmbH. All rights reserved.

Introduction

Payments for environmental service schemes, such as the Conservation Reserve Program (CRP) in the United States, Sloping Land Conversion Program (SLCP) in China, and various policies in Latin America, aim to provide market incentives for land conservation. While such programs have the potential to both provide environmental amenities and support farm income, the extent to which they

* Corresponding author. Tel.: +86 10 82500203; fax: +86 10 62511091.

E-mail addresses: peter.kelly@yahoo.com (P. Kelly), xuexihuo@nwsuaf.edu.cn (X. Huo).

actually supply environmental amenities depends on the degree to which they are targeted towards cost-effective conservation measures in environmentally sensitive areas. An untargeted conservation program could become merely a supply management program, not a conservation program at all.

In principle, targeting could be based on either administratively selecting land, allowing farmers to select land, or a combination, which is the case for SLCP. This paper addresses the following related questions: What factors determine the decisions of local governments of whether to give farmers a choice about enrollment? What factors determine enrollment decisions by farmers when they do have a choice? And how do enrollment decisions made by farmers compare to those made by the local government?

Whether farmer, local government, or a combination of decision-makers is socially optimal in payments for environmental services is not self-evident from theory. Wu et al. (2001) find that a strategy that targets land with the highest benefit-cost ratio provides the largest environmental benefits for a fixed budget if output demand is perfectly elastic. If output demand is not perfectly elastic, output effects must be considered. However, SLCP probably has small output effects. Xu et al. (2006) and Feng et al. (2005), using different data sources and methodologies, both find that because of the low quality of land enrolled in SLCP both production and price impacts are small. Thus an optimally targeted SLCP program, with no administrative costs, would simply target the land with the highest benefit-cost ratio.

The CRP, which solicits competitive bids for points calculated according to an environmental benefits index, uses such benefit-cost targeting (Classen et al., 2008). Both bidding and the use of an environmental benefits index can increase cost-effectiveness, but the administrative costs of both approaches would probably be prohibitive for a program such as SLCP, and the current program is far from using such a finely targeted enrollment procedure. There are only two subsidy payment levels for SLCP, one for the northern half of the country (and of the sample used in this paper), and another, 50% higher, for the southern half. In SLCP, steeper and less productive land is more likely to be enrolled, but exactly what criteria are most important, and even whether farmers or local government officials are making the decisions, can vary from one location to another and can be less transparent than the process used in the United States.

This paper derives criteria that farmers are expected to use in their decision-making, and criteria that local governments are expected to use. The resulting hypotheses are tested using a Heckman selection model, in which in the first stage the local government decides whether to make enrollment mandatory on a particular piece of land, and in the second stage the farmer decides whether to enroll where enrollment is voluntary.

Studies of enrollment decisions for payments-for-environmental-services

A number of studies of both the CRP and SLCP have attempted to quantify the factors that go into making enrollment decisions. Brimlow (2009) notes that in various studies land quality, land productivity, and landowner characteristics all affect the probability of enrollment in the CRP, but that the effects are not consistent across studies. In the United States, the effects of different factors can be difficult to identify because payment rates are highly correlated with, and determined by, land characteristics. Chang and Boisvert (2009) take a different approach, modeling whole-farm and partial-farm enrollment as separate binary decisions. This approach is probably not applicable to SLCP because few farmers enroll their entire farm in SLCP (in principle, none are supposed to), and because many decisions are made by local officials based on contiguous areas rather than the scattered parcels of individual households.

Uchida et al. (2005) provides the most detailed discussion of factors that go into making enrollment decisions in SLCP. They find that slope is the most statistically significant predictor of SLCP enrollment, significant at the 1% level, and that yields and distance from the farmer's house are also significant at the 5 or 10% level, depending on the specification. Proximity to a road may increase the likelihood of enrollment, because of the ease of monitoring, but the effect is not statistically significant. (This paper does not consider the distance to the nearest road because of the insignificant effects in other studies and difficulty in defining what constitutes the nearest dirt road.) They find that the quality of targeting

Download English Version:

<https://daneshyari.com/en/article/91985>

Download Persian Version:

<https://daneshyari.com/article/91985>

[Daneshyari.com](https://daneshyari.com)