

A Sustainable Finance Solution? Agricultural Lending to Reward Environmental Performance in the Salinas Valley

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California's agricultural industry simultaneously contributes to and is threatened by decreasing water quantity and quality. Farmers' resource-intensive agricultural practices combined with climate change increase production risk. In the face of mounting industry and environmental compliance costs, farmers need additional support to improve environmental performance and achieve regulatory compliance. Agrifinance institutions may play a role in supporting farmers with these efforts, subsequently lowering their production risk. However, information regarding how agricultural lenders incorporate natural resource issues into their client risk assessments and lending decisions is limited. **In this project, we coupled industry member interviews with an online questionnaire, followed by financial modeling to achieve two objectives. Our first objective was to understand how the agrifinance industry accounts for environmental risk, and identify unrealized opportunities for improvement. Second, we aimed to determine the most profitable loan-incentive product(s) for both borrowers and lenders.** Ultimately, a range of potential impacts of these loan products to the groundwater quantity and quality of the Salinas Valley's 180/400-Foot Aquifer Subbasin were calculated.

To better understand how the agrifinance industry accounts for environmental risk and identify unrealized improvement opportunities, we conducted a survey of agrifinance industry representatives. We worked with our client to create an advisory committee of agrifinance professionals, who provided guidance and feedback in developing the design and research methodology of our survey targeting finance

professionals who lend to farmers in California. Survey participants were asked to share their personal attitudes and opinions regarding the types of natural resource issues considered in their lending credit risk assessments and loan development procedures, as well as the agrifinance industry's willingness to consider inclusion of client environmental performance in their lending practices.

A financial model was developed to determine the most profitable loan-incentive product(s) for both borrowers and lenders. The design of our financial model was guided by survey responses and industry research. We modeled two different financial incentives based on environmental performance: a partial rebate on loan interest paid and a variable interest rate. Each incentive was paired with three loan types - an annual operating loan, an equipment loan, and a mortgage loan - to create 6 loan-incentive products. After designing these products, borrower savings were calculated for each using an amortization table. Lender profit was then calculated in terms of customer lifetime value. Estimates for water and nitrogen savings as a result of program participation were calculated using parameters established from literature review, case studies, and personal communication with agricultural researchers and farm conservation professionals.

In pursuing these objectives, we contribute to existing knowledge of the agrifinance industry's incorporation of environmental-based risk considerations in their business decisions and loan offerings. Our client, Sustainable Conservation, will use our findings to better understand the feasibility of scaling up

Industry Willingness to Consider Loan Types that Incorporate Environmental Performance

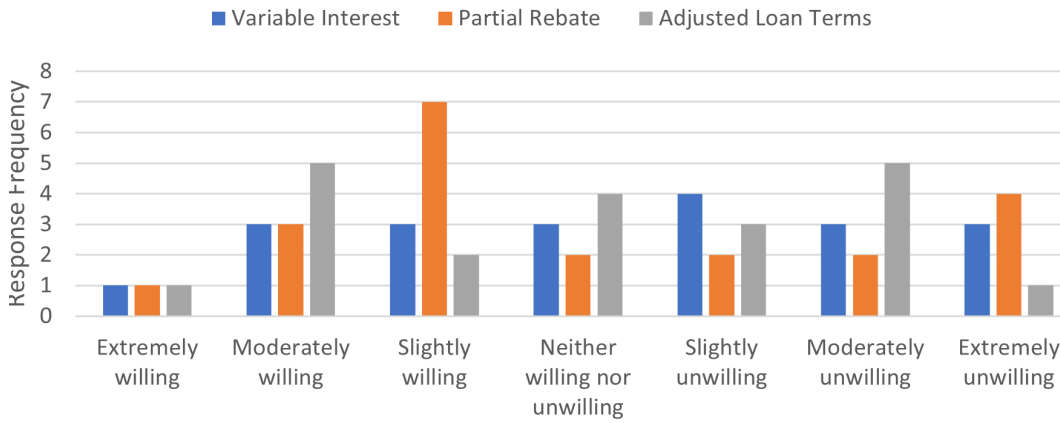


Figure 1. Questionnaire responses rating 3 types of loans' structures on a Likert scale of industry willingness to incorporate agricultural clients' environmental performance.

environmental incentive-based lending programs. Should they decide to move forward, our findings will serve to inform their approach to designing these programs. Additionally, the results of our financial analysis of loan-incentive products will support future communications with agrifinance industry players.

Our water-savings estimates show that under the best of circumstances, romaine and strawberry farmers in the Salinas Valley have the potential to reduce groundwater overdraft in the 180/400 ft. Aquifer Subbasin by ~4,400 acre-feet per year, equivalent to ~6.7 percent of estimated annual overdraft. However, considering the results of our financial model and survey, achieving this significant number seems unlikely. Survey results suggest that the majority of commercial agricultural lenders are indifferent at best regarding willingness to incorporate financial incentives based on environmental performance into loan structures. Further, calculations of lender benefits from these loan products through customer lifetime value comparisons do not present a convincing argument for new product takeup by commercial banks.

In general, commercial banks do not see themselves as the drivers of change, and therefore are neutral toward these loan-incentive products. While it is clear that the value of sustainable water resources is not accurately priced into the lending process, there exists a disconnect between lender recognition and motivation to act. Although many in the industry do acknowledge the need for change, a policy-driven approach which forces lenders to act is likely a more realistic scenario than expecting the industry to lead the way on its own. Nonetheless, industry-wide adoption is not necessary in order to spur farmer buy-in. A lender who is able to bring these unique products to market may be able to capitalize on the eagerness of potential borrowers to take advantage of more favorable loan terms and take steps toward lower-impact farming. Moving forward, a pilot project with a commercial lender partner can help to elucidate the efficacy of this approach. Increased data collection efforts combined with survey dissemination to a broader audience, including farmers, can offer insight into improved loan product design and program implementation.