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FOR SUSTAINABLE AGRICULTURE

Determining the methods for measuring the economic and fiscal impacts associated with organic crop conversion in Iowa

Abstract: This study examines the economic benefits and risks that increased organic crop production can bring to a community or region.

Question & Answer

Q: How does growing organic crops affect the bottom line for farmers and the public?

A: This research reiterates existing ISU research that the potential returns to organic farmers utilizing a corn, bean, oats, and alfalfa rotation exceed those of conventional corn and bean rotations as practiced so widely in Iowa. As a consequence, this study demonstrated that there are higher regional economic impacts mostly due to greater levels of household-level spending by farm families and their workers. This research also concluded that local tax abatements are not an efficient public policy alternative for inducing organic conversion as the fiscal costs are likely to exceed the net gains to public accounts over a reasonable period of time.

Background

The purpose of this research was to specify and demonstrate methods for comparing the potential region-wide economic value of organic versus conventional crop practices. The impetus was the passage of an ordinance in Woodbury County (Iowa), allowing property tax abatements for qualifying conventional to organic production conversions. This research is intended to fill a gap in applied economics research on the differential economic impact values of organic crop production and their linkages to area economies when compared to the profits from traditional farming practices.

The goals of this research are to produce a:

- Clear and replicable articulation of the methods of analysis,
- Clear and understandable measurement of the regional economic value of the two approaches to farming, and
- Foundation for debating the utility of using tax-based incentives to stimulate organic production.

Approach and methods

The study compares two sets of crop production practices to determine the different levels of economic output of each in two hypothetical Woodbury County farming situations. The first assessment was the baseline situation that uses at a conventional corn-soybean rotation. The second assessment was the organic alternative, which considers a four-crop rotation of corn, soybeans, oats, and alfalfa. The study employed a stylized representative farm approach rather than a measurement of actual operations. The production budget information came from 2006 crop production enterprise budgets prepared by Iowa State University researchers.

The information was translated into a format for inclusion into an input-output model of the Woodbury County economy. That modeling system accounts for how industries buy labor and inputs for production, and shows what the consequences are to the regional economy when labor and other input demands change.

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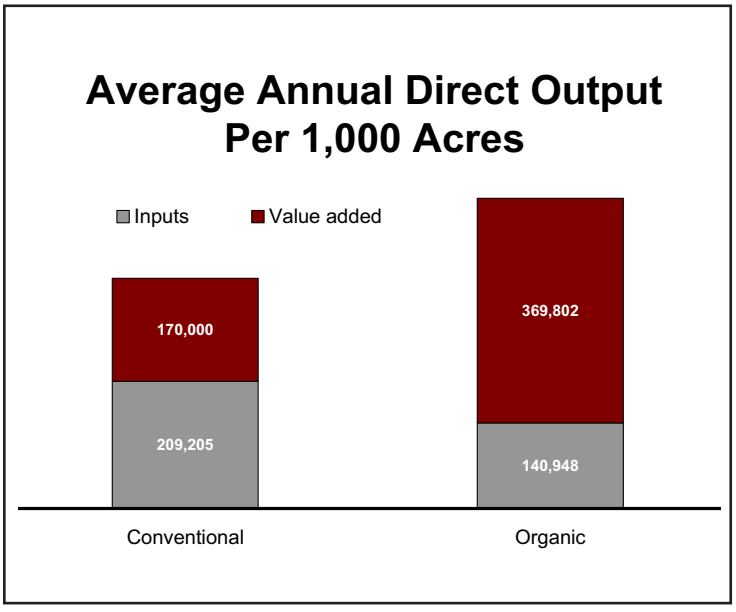
$15,000 for year one

Results and discussion

The research demonstrated that there are very strong differences not only in the superior average returns to organic farming operators when compared to conventional corn-soybean operations, but also in the overall economic impacts. Comparing the two scenarios and supposing 1,000 acres in each, the investigators found that the organic rotation produced 52 percent more industrial economic impact (gross sales) than the conventional option, 110 percent more value added, 182 percent more labor income, and 56 percent more jobs from the same 1,000 acres of production than from conventional corn and soybean rotations.

The research next evaluated the overall economic efficiency of the county property tax abatement program. Economic efficiency means that the county engaged in an activity designed to promote a desirable community income, and in the course of doing so, recovered its forgone tax dollars.

The research showed that the five-year abatement program would be worth $14,119 a year for 1,000 acres of converted organic land and that the county could therefore support 3,541 acres of conversion with its $50,000 property tax abatement program. The research further found that because the region was generating more laborers paying those property taxes, their households would require additional county services, leaving the net increase in property taxes after paying for county services very close to zero.



Conclusions

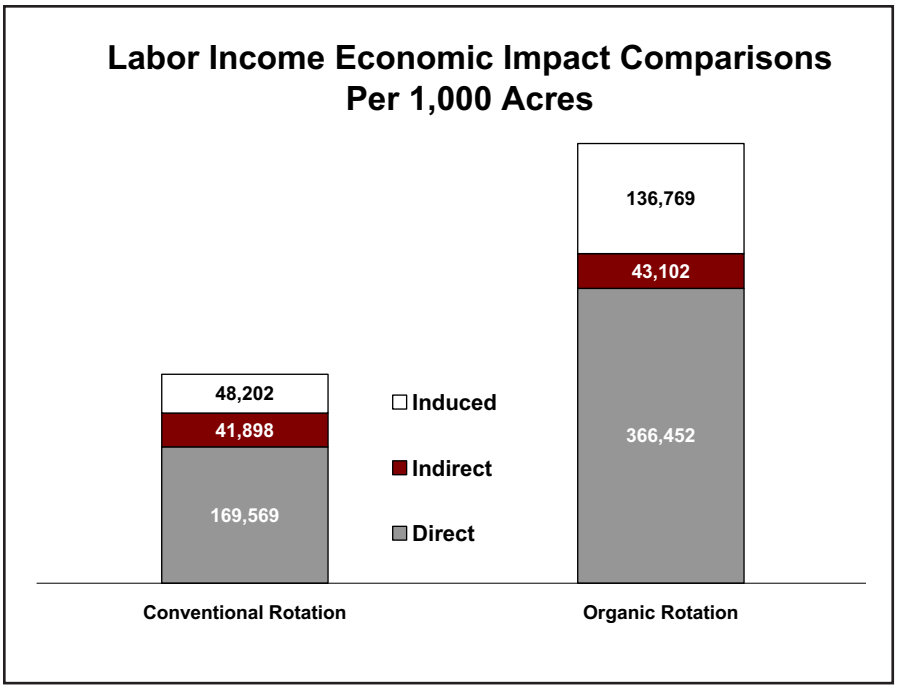
As measured in the study, an organic production alternative initially generates higher returns per acre, or potentially per operation, than conventional corn and soybean farming. When the differences in the components of production inputs are entered into a modeling system and allowed to interact with the regional economy, when compared on a standard basis, the organic production alternative generated significantly greater levels of regional products (value added), payments to workers, and area jobs.

However, if organic returns per acre or similar-sized farm are demonstrably superior, why are there not more organic farmers (despite the existing public subsidy structure)? There are several possible reasons. One might be that conventional operators may be able to tap into other earnings opportunities, given the lower labor and time needs and higher use of mechanical and chemical inputs. Another is that there are substantial physical labor and time commitments necessary for organic operations, and this may be a deterrent that is not reflected in the returns to operations statistics. Third, organic operations may entail greater actual or perceived risks, either on the crop production side because of the lack of chemical remedies to manage pest problems, or in terms of the average prices paid for organic products.

The use of public resources to promote one kind of enterprise over another (such as with these tax abatements for conversion in agricultural practices) requires either a strong economic justification or a strong social agenda deemed legitimate by the public. Based on the results of this study, the use of property tax abatements for this purpose cannot be justified by using traditional economic efficiency measures.

Impact of results

The findings of this research affirm that returns to the operators who choose organic methods are greater than



returns to operators who use conventional means. On an economic basis, the project demonstrated that higher returns to operators under an organic scenario have demonstrable economic effects in the region that are superior to the conventional farming alternative. These findings can be used to help make the case for the positive promotion of organic conversion in Iowa as a clear and convincing component of rural and regional economic development.

The findings also demonstrate that the use of property tax abatements regarding this promotion are likely to be inefficient; it is unlikely that the county will recover the forgone property taxes used to support this program over a reasonable period of time. Accordingly, the public costs (county property tax burdens) are shifted to people who do not directly or indirectly benefit from the program.

To date, two Iowa counties have passed similar ordinances. This research indicates that the overall justification for an organics conversion program relying upon property taxes as a partial inducement has to be made using other criteria (such as environmental benefits) rather than economics.

Education and outreach

The researchers made several presentations on the findings of the project in Woodbury and Warren counties and in Ames. Media coverage included interviews with the Minneapolis *Monitor*, Sioux City *Journal*, Cedar Rapids *Gazette*, WHO-Radio, WMT- Radio, and Agricultural Radio News Service.

Leveraged funds

No additional funds were leveraged by this project.

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