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**Modern Market Channels and Strawberry Farmers in Michoacán, México.**

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## Introduction



Supermarkets have been rising rapidly in Latin America, from a steep take-off in the early to mid 1990s. The penetration of the supermarket sector has been wide and deep in processed products, and beginning to emerge only very recently in fresh produce, following the the pattern observed in the US and Europe in the 20th Century. This supermarket revolution was hypothesized to affect the segments upstream of retail.

Participation of smallholders in supermarket market channels present the opportunity, relative to just selling to traditional markets, of increasing incomes, or decreasing risk or both. The emerging but scant survey-based evidence of participation of smallholders in modern market channels have shown that modern markets can challenge farmers with greater requirements of land and/or non-land assets compared to traditional markets. The empirical evidence then, might be signaling exclusion of smallholders from these new, presumably more profitable market opportunities.

## Objective

We analyze the following questions:

- Identify the determinants of participation in the supermarket and food processing market channels by small strawberry farmers in Michoacan. To what extent are smallholders excluded based on their little land?
- What are the effects, on technologies and incomes, of participation in modern (vs traditional) market channels?



## Methods



The present study uses an empirical approach that consists of a two-stage estimation procedure. The data used was obtained from a survey carried out between September and October

2006, on a stratified random sample of small strawberry producers in the State of Michoacán, Mexico.

## Implementation

In the first stage, we estimate a parametric hazard function with a Weibull distribution

$$h(t) = \lambda(x)^{\rho} \rho t^{\rho-1}$$

using the Accelerated Failure Time (AFT) model transformation for its simplicity to interpret results.

$$\log(t) = \beta'X + \sigma\epsilon$$

In the second stage, using control function methods, we use the estimated "tenure" time as supermarket suppliers and the first stage residuals as explanatory variables on a system of equations.

## Results & Discussion

As little as ten years ago, the small scale strawberry producers of Michoacán were, by far, the leading suppliers of strawberries to all the market segments in Mexico, including the fresh and processed export market. This study confirms that a large majority of the small scale family farmers of Michoacán, are nowadays excluded from the most modern and profitable strawberry markets. We have documented two different dimensions of exclusion.

First, all strawberry producers in the Maravatío valley face great difficulties in accessing these modern markets because in their region the leading firms linking to these market segments, simply are not present. All of their marketing options lead to the central wholesale market in Mexico City or to the processing sector in Irapuato, less competitive than that one of Zamora. This is a similar story to what Berdegué et al. (2006) concluded for guava producers in the Central region of Michoacán.

Second, within the Zamora and Panindícuaro valleys, most small scale family farmers lack the land and non-land assets which our study confirms as direct determinants of access to the more modern, dynamic and profitable markets. A very small group of large farmers, capable of financing and managing highly capital intensive production and of entering into contracts with leading global berries traders like Driscoll's, in a very short period of time (certainly less than one decade) have established a dominant position in these markets and displaced smaller producers. No more than 10% of the small scale family farmers have been able of implementing the technological and managerial innovations needed to stay in these more modern, dynamic and profitable market segments.

We have also found that participation in the more modern and dynamic strawberry market segments, drives important technological innovations. One such change is a greater use of labor. This is an important and welcome trend in a region with very high levels of emigration (most of it illegal) to the USA. It is also good news for the rural landless.

Another technological change is probably less welcome. We refer to the significantly higher use of chemical inputs that we have found to be associated with participation in more modern markets. We have found that a very large percentage of farmers are using of illegal inputs, and only a handful of traders and processors seem to be outing in place meaningful inspection systems.

In third place, we have found that participation by small scale farmers in more modern markets has a positive effect in their income, even when

## Results & Discussion

considering the opportunity cost of family labor. Moreover, we have found that there is a negative relationship between farm size and net income from strawberry production, suggesting that perhaps those small scale farmers that can access these markets, do have a competitive advantage. This may be due to their being able to better control agronomic operations in a smaller plot, and to being able to mobilize and supervise family labor in better conditions than a larger producer who relies more on hired workers, most of them seasonal.



## Policy Recommendations

First, state and federal public authorities interested in supporting small scale family farming in Michoacán, face a dilemma of allocating funds and other resources to 'capacitating' the lagging production regions, like Maravatío, or of prioritizing building the capacities of those family farmers that are located in regions already linked to more modern and dynamic markets. The decision is surely not purely technical. If it is desired to develop Maravatío, then priority number 1 appears to be attracting a new set of traders and processors who have the capacity to link this region to more dynamic markets. A territorial development approach may be recommended.

To support family farmers in Zamora and Panindícuaro with the objective of expanding the number of those who can access the more modern and dynamic markets, the priorities suggested by our results are three: substantially expanding drip irrigation and plastic mulching beyond the current 10% of small scale farmers who have these assets today, putting in place an extension or advisory services system that responds to the farmers' interests and needs and not to the commercial objectives of agrochemical supply firms, and supporting the development and strengthening of functional, effective and sustainable producers' organizations.

Time is very scarce to put in place policies and programs to support inclusion of Michoacán small scale family farmers in more modern, dynamic and profitable strawberry markets.

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