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DEPARTMENT OF ECONOMICS

Working Paper

Farmer Perspectives on Livelihoods Within Community Supported Agriculture

by

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Working Paper 2016-13



**UNIVERSITY OF MASSACHUSETTS
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Farmer Perspectives on Livelihoods Within Community Supported Agriculture

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Abstract

In the United States there is a tremendous amount of interest in Community Supported Agriculture (CSA) among farmers, consumers, activists, and policymakers. Despite the attention garnered by CSA farms and the resurgence of local agriculture, relatively few studies have examined the livelihood opportunities for farmers within local agriculture. This paper takes a step in this direction, evaluating livelihoods for CSA farmers through in-depth interviews conducted in the Pioneer Valley of Massachusetts. Based on the principles early advocates set forth as goals of the CSA movement, the paper evaluates how CSA farmers are doing from the farmers' perspective. The paper finds that while CSA farmers are faring better than other farms across the United States and in the study region in terms of earned farm income, they still earn far less than the median national income of all households. Despite these income challenges, CSA provides broader social, ecological, and economic benefits to farming communities as a whole, with its focus on providing food for the community rather than producing mass commodities for the market. These non-market benefits are a significant source of well-being from the CSA farmers' perspective.

Keywords: Community Supported Agriculture; Local Food; Sustainability; Economic Inequality; Ecological Economics

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1. Introduction

Today's consumers are seeking fresh, local, and healthy produce generated in an environmentally responsible way, yet the providers of these products, the farmers, are struggling to make a living. Community Supported Agriculture (CSA) may provide a solution to this dilemma (Bennett 2009; McFadden 2008; Oberholtzer 2004). Advocates claim CSA provides a viable model of production and distribution of food by local, highly diversified farms, while creating conditions for the community and farm to join together in a "symbiotic relationship" that adequately supports the farmer(s) (DeLind 2003). This is achieved through linking consumers, or members, directly to local farms in their community.

The basic economic arrangement of CSA relies on members paying the farmer prior to the start of the season, thus providing working capital for the farm. In return the farmer provides the consumer with weekly produce during the farming season. In theory, the consumer is buying a 'share' of the farm's annual harvest, lasting an average of 24 weeks² across the country (Lass et al. 2003). In its simplest form, the relationship entered into by CSA farmers and members provides fresh local produce to consumers, and working capital, plus a guaranteed market, for farmers; however, boiling down CSA to a producer-consumer relationship that describes market-based economic exchanges disregards many critical aspects of the arrangement. Going beyond simply providing produce for a given price, CSA may be understood as selling a lifestyle that re-connects people to their food and the land (Lamb 1994). At their best, CSA enables participants to engage actively in key decisions regarding the farm, such as the farm's growing practices, and the farm's relationship with the community (McFadden 2008). However, some CSA farms may

² The duration of the share may vary significantly by farm and location.

represent little more than a marketing opportunity for diverse farms seeking to sell directly to consumers.

Since the introduction of the CSA model in the United States in 1986 the number of farms offering CSA has grown rapidly, although still representing less than 1 percent of farms across the United States. While numbers on national membership in CSA farms are not available, CSA continues to grow in popularity (Local Harvest 2014). As CSA has proliferated, the CSA structure has evolved to encompass a wide variety of ways for farmers to organize their 'version' of CSA. Farms offering CSA range from very small family farms providing produce for a handful of families in their community and adhering closely to the original principles laid out by early CSA participants, to large-scale farms using CSA as one of many marketing strategies to sell produce, and everything in-between (Galt et al. 2012). While advocates discuss the benefits and transformative potential of CSA, there is a lack of systematic evaluation to understand exactly what CSA is and is not delivering; where progress needs be achieved; and to what extent CSA represents a viable alternative to the industrial food system. Most important, is the CSA providing a viable farm livelihood for the farmer(s)?

Few studies have examined if CSA farms are delivering on their key principles, including providing viable farm livelihoods. This paper takes a step in evaluating the farm livelihoods that CSA is providing from a farmer's perspective, and on the basis of principles set forth by early advocates of the CSA model. The paper is organized as follows: the second section describes the origins and development of the CSA model and elaborates the initial principles that guided CSA; the third section sets the scene for an analysis of farm livelihoods, identifying the shortcomings of current models of agricultural production; section four describes the methods utilized to conduct this study; section five contains an evaluation of CSA farms in the study; section six

discusses key findings of the work; and section seven concludes by explaining the implications of the findings and suggesting areas of future work.

2. Origins and Development of CSA

In 1986 the first two documented CSA farms were founded in the United States, Temple-Wilton Community Farm in southern New Hampshire and Indian Line Farm in western Massachusetts (Henderson and Van En 2007). They both became aware of CSA from examples in Germany and Switzerland, where small farmers had asked their local community members to pay an upfront sum in order to cover the farms' annual production expenses. In return, the members of the communities would receive a weekly portion of the farms' bounty, including vegetables, meat, and dairy. The movement initially began with a group of women in Japanese who were frustrated by the quality of produce and milk available to them through the conventional food system. Consumers and producers alike were concerned about the health, social, and environmental impacts of the extensive pesticide use, farm concentration, and the depletion of rural livelihoods that the 'modernization' of agriculture brought, and they banded together to form member-farmer partnerships (JOAA 1993). Thus, the movement was born out of the rejection of conventional agriculture on grounds of social, environmental, and economic justice, in addition to the desire for fresh, quality food.

The early CSA farms had promising membership expansion, which early advocates attributed to empowered consumers choosing to "vote with their dollars" for local sustainable agricultural practices (Groh and McFadden 1997). To continue attracting members of the community and provide them with a full understanding of this alternative model of acquiring one's food, the founders of the Indian Line Farm explained the CSA as follows:

The concept of these new cooperatives is simple: divide the costs of the farm or garden among shareholders before the growing season begins. Instead of an agriculture that is supported by government subsidies, private profits, or martyrs for the cause, they create an organizational form that provides direct support for farmers from people who eat their food (ibid).

To understand why CSA advocates are working to build an alternative-farming model, background on current challenges faced by farmers will be reviewed. Under the pressure of rising land prices, competition for land use, and low farm-gate prices, small and midsize farms are struggling to make a living (O'Donoghue 2011). The USDA found land access and farm startup costs to be the largest obstacle for beginning farmers (Ahearn and Newton 2009). Farmers have responded to increases in land prices by continuing on the path of consolidation, attempting to reap any rewards from economies of scale. Yet these supposed economies of scale - that is, the claim that large farms are more productive - have come under much critical scrutiny (Deininger and Byerlee 2012). From 1987 to 2007 the midpoint acreage for U.S. farms increased in all but five states, and doubled in sixteen states (Ahearn and Newton 2009). Through consolidation, large farms are able to survive by earning small net profits per acre and extracting rents through government programs (Ramey 2014), thus embarking upon a *land-extensive* strategy.

Land is a vital input for farmers – without land, there is no soil to till. As all farmers struggle for access to land, through either ownership or rental, CSA may offer an alternative path forward. CSA farms are highly diversified and use land *intensively*, as opposed to extensively, focusing on high-value, labor-intensive crops to provide farm viability on relatively small parcels of land (Tubene and Hanson 2002). By using the land intensively, farmers are able to generate high levels of revenue per acre, thus relaxing the land constraint.

Benefits from land-intensive farming practices are not exclusive to CSA farms (Schnell 2007). While CSA may not directly provide farms with access to land, the community ties, coupled with agro-ecological growing practices, may improve CSA farms' access to land through mechanisms such as land trusts and community assistance (DeMuth 1993; Curtin and Bocarsly 2008). CSA farms do, however, face additional challenges associated with procuring affordable land. Since CSA farms tend to be located in urban and suburban regions in order to be close to their members, they often face land prices that reflect competing non-agricultural uses (Nehring et al. 2006), which may result in significantly higher land costs per acre than for non-CSA farms.

Additionally, CSA advocates were responding to challenges for farmers associated with financing farm operations. Operating loans, money borrowed to finance farming operations during the season, are of particular concern for farmers. The recent USDA census found that the interest on operating loans alone accounted for roughly 5% of *total* farm expenses over the past decade (NASS 2007; USDA NASS 2014). These interest payments on farm loans have been a primary driver of the demise of the family farm (Dudley 2000). Many farms face credit constraints, resulting in a significantly lower value of total farm production (Briggeman et al. 2009). Other arrangements to finance farm inputs exist, such as contract farming arrangements, where in some instances most of the necessary inputs are provided to minimize the capital requirements for the farmer (Adamopoulos and Restuccia 2014). Whether the financing comes from the bank or the firm, however, the farmer pays a price to borrow, resulting in a reduction of net farm income that can have major economic consequences for the farm and farmer.

Borrowing costs aside, farmers historically have struggled in the United States to make a living comparable to their urban counterparts. In response, the government has provided major financial support to U.S. farmers via farm bill legislation for more than 80 years (Peterson 2009).

The justification for this income redistribution, that farm households tended to be less well-off than non-farm households, held true until recently. In 2012 average farm household income (\$108,844) was 53% greater than the average U.S. household income; however, 80% of farm household income was earned *off* the farm. From 1990, when growth in the number of CSA farms accelerated, to 2012, earned income from farming represented only 12%, on average, of *total household income* for all farm households (USDA NASS 2014). With on-farm income averaging a meager \$8,210 during this time period, well below the poverty line, farming households are generally relying on off-farm income for their livelihoods (Weber 2012).

Previous studies have found mixed results on CSA farmer income. Lass et al. found CSA farmers are almost twice as likely to have gross *farm* incomes exceeding \$20,000 compared to non-CSA farms in the USDA census (Lass et al. 2003). Although CSA farmers relied less on off-farm income in Lass's study, 48% of those farmers surveyed reported a lack of satisfaction with their level of compensation (ibid). On average, small and mid-sized farms engaged in local food sales, farmed more hours and were more likely to forgo off-farm employment than farms that did not engage in the local market (Low and Vogel 2011). Previous studies have indicated that insufficient CSA farm income is the main challenge for farm survival (Oberholzer 2004), though these income challenges are not exclusive to CSA farms.

In theory, the CSA model allows for the farmer's income to be priced into the cost of the share, which is determined prior to production, thus ensuring the farmer a living wage; however, previous studies found the share price often does not include the cost of the farmer's labor (Lass et al. 2005). These findings are fueling concerns amongst researchers and advocates that the CSA model may fail to adequately compensate farmers (Tegtmeier and Duffy 2005).

Beyond farmer compensation in terms of wages, interventions from the government to support rural households included addressing the inherently risky nature of farming through the introduction of the Agricultural Adjustment Act (AAA) of 1933 (Rasmussen et al. 1976). This legislation, part of the New Deal, represented the start of large-scale government support for agriculture, initially through activities to raise food prices, and therefore farm income, and only later transitioning to focus on risk hedging strategies. The AAA was instrumental in support to farmers, helping to raise farm incomes by 50% from 1932-1935 (Rasmussen 1976). Despite the progressive beginnings of the AAA, farm legislation after the depression has primarily supported large commodity farmers while actively pushing small and mid-sized family farmers out of the market and off the land (Ritchie and Ristau 1986).

Government payments to hedge risk for farmers are directly linked to increases in farm sizes, due to their disproportionate allocation to large-scale farms (Williams-Derry and Cook 2000; Key and Roberts 2006). A great deal of the disproportionate support to large-scale monocultures comes in the form of crop insurance and other government supported risk-hedging strategies. The structure of these programs effectively eliminates support to small and mid-sized highly diversified farms.³ Farms engaging in CSA do not have the ability to hedge risk through traditional mechanisms due to their adherence to agro-ecological growing practices, and therefore must seek alternative avenues to hedge their risk and support long-term farm livelihoods.

³ Government insurance and subsidy programs primarily apply to monocultures growing commodity crops. For non-commodity growers, such as CSA farms, the government offers a program called the non-insured assistance program (NAP). This program is not appropriate for CSA farms due to its structure. The program is for individual crops, so a farmer with 30 crops may need 30 different insurance policies. Additionally, payments are only considered after 50% of the crop is lost. Once 50% is lost, NAP covers 55% of the market price for the second 50% of the crop. The USDA is only starting to cover organic prices, though this currently applies to only a handful of crops.

Rather than relying on government support to provide insurance and risk-hedging strategies, CSA farmers rely on crop diversification and their membership base. Most studies of CSA recognize “an important aspect of CSA is that both the farmer and the CSA member share the risks associated with farming” (Cooley and Lass 1998). According to the USDA, CSA farms share, or sell off, a portion of their risk to their members through the CSA contract, therefore the farm is provided with a risk-hedging strategy for the season (USDA 2014). Contrary to this view, DeLind (2011) argues that the idea of shared risk has been all but eliminated from CSA – due to erosion of the early principles – and that CSA has transformed into a simple form of commerce rather than a true social movement.

To evaluate how CSA farms are doing, we first need to understand what exactly CSA sets out to do in the first place. A review of the literature was used to generate the following list of the founding CSA principles and goals:

1. A CSA share constitutes a portion of the farm’s harvest, thus providing the farmer with a guaranteed market (Cone and Myhre 2000).
2. The price of a share is determined by the cost of production on the farm, including a living wage for the farmer(s). The wage should take into account the average wage of members to minimize inequality and ensure affordability (DeMuth 2008).
3. Members support the farm by providing working capital for farming operations prior to the planting season through pre-payment, thereby reducing or eliminating the reliance of farmers on financial institutions (Lass et al. 2003).
4. Farmers are supported in their endeavor to grow in an agro-ecological manner. This leads to diversification of agricultural production, growing regionally appropriate crops, engaging in sustainable land management, minimizing off-farm inputs, promoting biodiversity, and an array of other ecosystem services (Groh and McFadden 1997).
5. Risk and reward of the farm is shared. Since the members are purchasing a portion of the harvest, they benefit from a particularly good year and share the risks of crop failure (Lamb 1994; Cone and Myhre 2000).
6. CSA promotes vibrant and diverse local food systems where growers are accountable to consumers (DeMuth 2008).
7. CSA rejects the industrialization of farming, challenging members to re-evaluate their community, their food system, and their role (Kelvin 1994).

With these principles at its heart, the CSA model has grown substantially over the past three decades. Starting with two farms in 1986, the CSA model experienced a first significant stage of growth in the 1990s (McFadden 2008). By 1999 there were 1,019 farms participating in CSA across the United States. While the early 2000s saw a lull in expansion, (Adam 2006) by 2009 a second boom of CSA growth was underway. In 2009 there were more than 2,250 registered CSA farms and by 2014 this number had jumped to 6,200, with at least one in each state (Local Harvest 2014). While CSA had its beginnings in the U.S. by producing vegetables, today many farms have diversified and offer a wide variety of share types. This paper will focus solely on main season vegetable shares.

3. Setting the scene

In the United States small and midsized family farms, once the backbone of the country, have been disappearing since the turn of the 20th century. According to the USDA, ‘family farms’ still account for 97% of all farms and produce 82% of the total value in U.S. agriculture. Farms with small and midsize sales constitute 89.7% of all farms, yet contributed only 16.6% of the total value in agriculture production during 2010 (O'Donoghue 2011). The number of farms in the United States continues to dwindle; farms that do survive often are growing to gargantuan sizes to survive, with the majority of cropland now located on farms of 1,100 acres or larger (MacDonald et al. 2013). The destruction and concentration of farms resulting from the domination of industrial agriculture has come with unsustainable economic, social, environmental, and health consequences (Horrigan et al. 2002; Donham et al. 2007b).

While production and crop revenue across the United States are thriving, farm livelihoods and opportunities are not. Growth in agricultural yields and the expansion of acreage does not automatically translate into improved livelihoods. The social and economic well-being of

communities does not benefit directly from the total production or sales of local farms; rather community benefits come from increasing the number of individual *farms* and *farmers* (Donham et al. 2007a). There is a clear negative relationship between farm concentration and economic growth and prosperity in surrounding communities (Gómez and Zhang 2000). There are significant social and economic benefits from large numbers of farms and farmers as opposed to farm concentration and research supports that communities with fewer total farms experience lower average family incomes, higher rates of poverty, and persistent low wages for farm workers (Pew Commission 2008). With median net farm income a meager \$1,453, according to the 2012 USDA Census of Agriculture, and hence heavy reliance on off-farm income, many farmers have been forced to re-think how they can earn their living on the land.

CSA represents one alternative to the trend of farm concentration that encompasses broad environmental, economic, health, and social justice initiatives in an attempt to provide farmers with improved livelihoods and opportunities. Key aspects of these opportunities include affordable and accessible land and capital, a reliable and adequate income, risk management strategies, and educational opportunities for the next generation of sustainable farmers. The paper goes beyond simple notions of income, based on household or net farm income of the operation, and includes a robust discussion of the above aspects of farmer livelihoods. Stepping away from a focus on household income allows for an analysis of the livelihood that the farming operation itself can provide for a farmer or farm family. Focusing on just farm income misses key aspects of livelihoods, such as economic security, equity, and potential non-market value gained through work.

4. Methods

The study area consisted of three counties in western Massachusetts - Franklin, Hampshire, and Hampden counties - which have experienced robust increases in farms offering CSA shares (Schnell 2007). This region is of particular interest because of its long-standing tradition of support for local agriculture and robust farming networks (Donahue et al. 2014). Western Massachusetts is home to the Connecticut River Valley, a region with deep agrarian roots (Clark 1992). The area has historically been used for farming due to its relatively rich and easily tilled soil (Cronon 2011). Today, Massachusetts has a vibrant local food economy, with direct-to-consumer sales accounting for 8.6% of total agricultural sales in 2007, compared to a national average of 0.3%, and second only to Rhode Island at 9.5% (Low and Vogel 2011). The robust local food economy in the study area, coupled with the fact that it is the birthplace of CSA, make the study area of particular interest. If anywhere were to provide a robust enough local food economy to provide livelihoods to CSA farmers, it may be in the study area.

To evaluate farmer livelihoods and challenges for CSA farms, qualitative interviews, a quantitative survey, and secondary data sources were utilized. Using local and national level CSA databases, including those of Community Involved in Sustaining Agriculture (CISA 2015), Local Harvest (2014), and the Robyn Van En Center (2015), 47 CSA farms offering a main season vegetable share in the study region were identified. The study focused on main season vegetable shares since these are the primary form of CSA offerings, and allowed for comparison across farms (Lass et al. 2003). Eight farms were excluded from the study for reasons including that the operation had been discontinued, the operation was a learning institution (school), the share offered was not produce-based, or the operation was not the producer of the food it distributed. Thus 39 farms in the study region met the selection criteria for the study.

Farmers from the 39 farms in the region, which met the criteria, were contacted by telephone and invited to participate in the study. From May to October 2014, 16 in-person semi-structured interviews with CSA farmers were conducted, followed by a brief written survey to gather general statistics on the farm and farmer(s). While the response rate for the sample is below 50%, the interviewees covered a breadth of farm sizes and included significant variation across farmer gender, farmer experience, and the duration of the farm's existence. The official role of the interviewees varied. When possible, the interview was conducted with the owner-operated of the farm. Fourteen of the sixteen interviews were conducted with the owner-operator (head farmer), while two of the interviews were conducted with the farm manager. Fourteen of the sixteen interviewees successfully filled out the survey. The surveys included questions on the farming operation, including production methods, sales and income, farm size, and other general statistics. The survey also included questions pertaining to the owner-operator, and up to two farm managers⁴ – allowing for the collection of data on farmer characteristics on up to three farmers per farm, providing details on 28 total farmers.

The interviews ranged from thirty minutes to approximately two hours, and were all conducted on the farms. The interviews followed the mental models approach (Morgan 2002), involving open-ended questions followed by probes on specific issues not mentioned in the responses. This method was selected for the exploratory character of this study and by the ability of in-depth interviews to reveal a more nuanced understanding of CSA farmers. All interviews were recorded and transcribed verbatim. NVivo qualitative analysis software was used to code and analyze the data. Data coding was iterative. Contextual information about the interviewees and transcriptions were initially coded using preliminary themes (a priori codes). Emerging

⁴ This follows the methodology used by the United States Department of Agriculture Census.

patterns and secondary coding were then applied to further identify recurring themes and theoretically important concepts (inductive codes). The survey consisted of 24 quantitative questions about the farm, CSA program, and farmer(s).

5. Are CSA Farms Delivering in Terms of Farmer Livelihoods?

To assess farmer livelihoods, four categories are examined: affordable and accessible land, working capital, reliable and adequate income, and risk hedging strategies. Farmer livelihoods are complex, as they entails far more than monetary compensation. For instance, equity in the farm can account for a significant part of general compensation, as well as things such as the provisioning of food, transportation (trucks), housing, and other necessities, which the farm may cover. Analyzing and comparing farmer responses on farmer livelihoods lead to the focus on these categories.

5.1 Affordable and accessible land

Without land, there is no farm. Gone are the days of the Homestead Act where one merely needed to work the land in order to acquire property. Today, access to affordable land is a major hindrance to farmers, stopping many young farmers from entering in farming. As one interviewee explained his vision:

I want farming to be something [the future generations] can do without making a tremendous amount of sacrifices compared to other Americans in terms of how much they work and how much they get paid for doing the work. A big part of that is land access and land affordability. (Farmer #9)

The study aimed to evaluate challenges for farmers in the study region, and understand if the CSA operation had any impact on the affordability or accessibility of land for farmers. In the study area, 79% of CSA farmers owned some or all the land they farmed, while 21% owned none. These findings are consistent with earlier studies of CSA farms, reporting 73% and 79%

ownership rates, respectively, and are in line with USDA averages for all farms (Lass et al. 2003; Strohlic and Shelley 2004). Farmers who were interviewed expressed concern in regards to access to affordable land, with one noting: “The land is very expensive around here. It is not attainable. Even with the programs that help farmers acquire land it is way, way out of our budget” (Farmer #2).

Only 25% of farmers claimed that CSA improved their access to land, yet some farmers expressed:

[CSA] makes it possible for us to grow organically on this land. It makes it so that we can continue to afford leasing land and the landlords can have crops grown on it and are not forced to sell it. (Farmer #14)

While land ownership rates for CSA farms in this study did not differ from USDA averages, interviewees stressed significant concerns over secure long-term tenure rights to the land. Even with limited land needs due the farm’s land intensive strategies, 42% of the CSA farmers, including all of the interviewees who leased-in land, were concerned the farm’s insecure land tenure status may affect the farm's long-term viability. The farmers discussed how ownership, often financially unattainable for them, is not the only path forward. Rather, farm security relies on “long-term reliable tenure. Other than that, I don’t really care if we own it or lease it” (Farmer #9).

To ensure secure tenure rights, two farms in the study area worked with local land trusts. One farm was able to

reconfigure the ownership arrangement of a lot of the farmland. [The] land trust did a capital campaign and raised a bunch of money so they will buy the real estate and we can pay off our mortgage... in the end we will be paying \$20,000 less per year to the bank than we are currently with the mortgage. Over the years that’s a very significant amount of money. To do that capital campaign, we appealed to our CSA membership particularly. (Farmer #9)

The other farm working with a land trust, Simple Gifts Farm, had the following statement on their website:

We are the stewards of the North Amherst Community Farm (NACF), community-owned land preserved in perpetuity for farming. The non-profit NACF brought us in as farmers to ensure that the land remains an organic community farm, a wildlife corridor, and a place for local residents to enjoy nature and walking trails. We run the farm as an ecological unit, integrating vegetable crops and livestock, and connecting our members with their food supply (Simple Gifts Farm 2015).

These two accounts of mutual support between environmental advocates in the community and CSA farms highlight the potential role for functional partnerships amongst stakeholders moving forward.

5.2 Working capital

According to principle number three outlined above, CSA is intended to provide a viable alternative to traditional debt financing in agriculture. Traditionally, farmers purchase inputs in the winter, and need access to financial resources to secure their seed, fertilizer, tractors, employees, etc. The time lag between input purchases and harvest sales entails a high degree of dependency on the availability of credit. To purchase inputs up-front, farmers generally take out operating loans (Harris and Dillard 2009) which leave the farmer indebted to the bank. Once the harvest is sold, farmers must repay the initial principle borrowed plus interest and fees accumulated.

CSA addresses the need for financing seasonal costs by providing the farmer with a source of non-farm equity capital. By receiving cash up-front through the sale of shares of the harvest months prior to planting, the costs of inputs are covered and interest costs on operating capital can be eliminated. Thus, CSA may improve farmer livelihoods through increased profitability and reduction in the risk associated with carrying large debt loads.

To minimize this financial burden, CSA is structured to provide farmers with access to working capital without debt. Rather than the farmer seeking loans from a bank, members provide the necessary working capital for the season *interest-free*. CSA farmers also gain a great deal of financial security “by selling directly to members who have provided the farmer with working capital in advance” (Farmer #1), and therefore the farm knows what their income is prior to the season.

One farmer explained how significant this was for their operation:

one of the big things about CSA is that it redistributes the timing of that income from the end of the season to the beginning so we get by without loans. It’s better for the farm (Farmer #2).

By being in debt to their members rather than to a financial institution, the farmer can experience a difficult growing season and remain debt-free, though member retention could be compromised. This working relationship with members relieves the farmer from dependence on financial markets and government programs, providing the farmer with the opportunity to gain greater autonomy.

Evidence from the interviews and surveys strived to understand if the CSA model provided farms with the necessary working capital for the season, thus reducing the reliance of the farm on financial institutions. The results overwhelmingly revealed the important role of CSA in providing farms with the necessary working capital. Farmers discussed how the up-front payments are “a big help” (Farmer #6), while others noted, “the cash flow makes it possible for us to be viable” (Farmer #8).

The vast majority of farmers in the study, 94%, said CSA helped in financing the farming operation. A younger farmer explained “I’d have to take out a large loan to pay for everything” (Farmer #7) without CSA. Despite the financial support from members prior to the growing

season, two farmers continued to take out operating loans. One of these farmers mentioned, “since we started the CSA we haven’t had to do that [take out loans] as much” (Farmer #15). Overall in the study area CSA greatly reduced farm reliance on loans, which may bolster financial security and peace of mind. Additionally, this initial support by the community makes “CSA seem like a great model for people who are just getting started and don't have much capital yet” (Farmer #15) and therefore may reduce barriers to entry into farming.

5.3 Reliable and adequate income

According to principle number two above, CSA aims to provide farmers with a living wage. The model does not rely on the charity of the farmer, providing food to the community for mere pennies, but posits that all CSA farmers deserve dignity through being paid a living wage for their work. This is a clear rejection of the cheap food policies championed in the United States. In addition to a living wage, the nature of CSA provides farmers with vital information about the magnitude and timing of their income in advance of the season, thus reducing much of the uncertainty that is inherent to farming.

Contrary to the founding principles, the study largely found that CSA farmers were not earning an adequate income. Eight-one percent of farmers responded that their full-time farming activities were not securing them a living wage. One of the few farmers who perceived their compensation as adequate (19%) stressed that this was only because of “this great place that my father had started. It was such an amazing opportunity to have all the tools, and the land” (Farmer #6). For the majority of farmers struggling to make ends meet, one interviewee summarized it well in response to the question of earning a living wage, stating, “*Farming is labor of love. You never ever make the amount of hours that you put into it*” (Farmer #15).

A summary of key findings from the survey is presented in table one below. These summary statistics provide insight into how the farm and farmer(s) are fairing.

[Insert Table 1]

While gross farm income averaged \$85,346 in the study area, net farm income was only \$12,044. Certainly that can't provide a living wage, but it is vital to understand CSA statistics through comparisons with other farms. We observe that the CSA farmers in the study region earned an average of 377.5% more *on the farm* than the national average. Additionally, median farm income of CSA farms interviewed was \$1,280 above that reported by the USDA⁵ (2014).

[Insert Table 2]

In the above table, I compare farms in the study area to the only National CSA study, conducted by Lass et al. (2003). These findings indicate that the farms in the study area are similar to CSA farms across the country. The farms in Lass et al. are slightly larger, have slightly higher share price, and have higher gross and net farm sales. While there is variation in the size of the farm, farm operators have many similarities. For instance, farmers in both of these CSA studies are about fifteen years younger than the average for all farmers across the country, and have about fifteen years less experience. Farms across both studies also grew a similar number of different crops, and tended to report growing with organic methods, but opting out of the

⁵ For the above results, farms in the study area are compared to farms in the 2012 USDA Census whom are classified as principal farm operator – intermediate farms. This means the farmer's primary job is farming and the farm earns less than \$350,000 in gross cash farm income. All farms in the study area meet these criteria as well.

certification process. The data from this and previous studies indicate that operating a CSA may indeed assist farmers in earning a higher farm income. However, average income earned on the farm is far from providing a living wage and may result in farm exit regardless of the existence of CSA.

Despite the significant income challenges they face, CSA farms continue to crop up across the nation, with no clear slowdown in sight. Income, although vital to farm survival, is only one aspect of the compensation and overall lifestyle that comes with operating a CSA. One farmer shook off the low monetary compensation, mentioning that people “wouldn’t be in this business if you just wanted to make money” (Farmer 8). Another explained, “My wage is my health insurance, my truck, the gas, clothes, and food. That’s my wage.” (Farmer #7) Another farmer stated,

Money is not very motivating to me. I do it because I want to be outside and work with people...As long as that’s there and I can eat and live here, I don’t care what I get paid. (Farmer #1)

Other non-monetary rewards included autonomy on the farm, seeing their labor come to fruition, the opportunity to work the land, the unlimited supply of healthy food during the season, joy received from feeding the community and loved ones, and the rewards of educating future farmers. The non-monetary aspect of farmer compensation may be a critical reason for entry and continuation for CSA farmers.

Beyond the non-monetary compensation, farmers also received a guaranteed market for their produce, and thus a guaranteed income stream. CSA farmers noted that they had a fair idea of what their income would be for the season ahead, providing them with some degree of security and the ability to plan accordingly. This was only true for the CSA portion of the farm,

and since 88% of farms in the study area sold produce outside the CSA, significant income uncertainty remained.

5.4 Risk hedging

Within the study area, questions about sharing the risk of the *season*, in other words, what was harvested that year, with members produced a wide range of responses, indicating significant variation exists between CSA farms. One farmer explained, “The way we work, we [farmers] bear the risk.” (Farmer #5) This farmer was not comfortable with putting all the risk on the members, and felt obliged to provide for their members. Another explained, “When people sign up, we tell them that they are assuming the risk” (Farmer #13), which provides essential support to the farm for the duration of the season.

In the study area, over two-thirds of farmers believed they shared risk with members, but none viewed the members as taking on all the risk. Different forms of risk sharing with members were exhibited. One farmer explained: “the original idea is that the customer is sharing the risk...But in our case, the customers [are] sharing the risk in terms of what they are going to get.” (Farmer #16) Another explained, “we split it [the risk] about 50-50 and they are told up front that if there is a crop failure that they take the risk as well as the farmer.” (Farmer #10)

Sharing the risk of the season with farmers may provide members with a sense of satisfaction through supporting their community farm with a needed form of insurance. One farmer provided a vivid example of risk sharing:

It's easy for people to agree to it [risk-sharing] in theory...but it was really put to the test three years ago now. Hurricane Irene came through and pretty much obliterated everything we had. I mean our entire crop field was under water. (Farmer #10)

The farmer, aware of an impending storm, discussed how they “put the word out to members and tons of people showed up and helped us do this mass harvest of everything we

could possibly get out of the field.” Once the storm hit, the fields were lost for the season, putting the member-farmer relationship to the test. In response to the disaster, the farm “accepted donations from other farms,” showing the strength of the local farm community during crisis.

The true challenge lay ahead as the farmer was unsure if members would stick by the farm and understand that disasters such as these were part of farming. “It was interesting...absolutely everyone was very understanding.” However, the flood certainly stirred some angst amongst members, as evidenced by the fact that “next year we actually had our biggest drop in membership.” But, “that said, there are so many people that have really been steadfast.” Despite the disaster the farm quickly recovered and was back to full membership within one year. Although this provided a good example of how CSA supports farmers who do not have other risk-hedging mechanisms, the farmer expressed some frustration, stating, “I mean it is great on the one hand, and on the other I do not always want to have our hand out to the community.” (Farmer #10)

While 73% of farmers thought spreading the risk of the season was achieved, no farmers believed the risk of *the farm* itself was shared with the members. That lies squarely on the farmers' shoulders. While principle five clearly outlines the risk of the farm is shared, implying a long-term relationship between the community and farm, the results strongly reject this claim. Instead, short-term risk hedging strategies were achieved through sharing the risk burden with members during the season, but members were not tied to the long run well-being of the farm or farmer(s) as strongly implied by the literature.

Other forms of risk management are also crucial to CSA farm viability. Rather than relying on a small handful of crops, farmers rely on crop diversity to minimize the risk of the farm. This high level of diversification also facilitates long-term crop rotation, which reduces the

risk of crop failure. Crop rotation reduces the risk of competition from weeds and diseases vectored and compounded by plant pathogens, nematodes, fungi and insects. (Magdoff and Van Es 2000). While this high level of diversity is by no means unique to CSA, the structure of CSA can greatly reduce the transaction cost associated with the harvesting and sale of produce for farmers that engage in high-diversity agriculture.

The interviews demonstrated that farmers in the study area indeed used crop diversification as a risk-hedging strategy. Farmers grew an average of 38 different crops and an astonishing 115 varieties. As one farmer explained, “We hedge our bets by diversifying.” (Farmer #6) This diversification not only reduces the impact, for instance, of blight, but also has tremendous environmental benefits according to the farmers. Farmers discussed how the biodiversity improved organic matter in the soil, reduced pest infestations, allowing for a reduction in applied external inputs, improved water retention, and sustained the soil. Crop diversity allows farmers to give members “a general list of crops” they may receive during the season. But the farmers make it clear that “there’s no guarantee that you’re going to get any one of those crops because they [members] have to account for crop failure” (Farmer #3).

6. Discussion

A key element of civic agriculture and models such as CSA is to ensure fair and adequate livelihoods for farmers. Understanding farmer livelihoods is challenging, but the paper provides first hand accounts from farmers discussing how they manage their challenges in accessing land, handling low wages, and managing the inherently risky aspects of farming. CSA farms cannot be expected to overcome all the challenges that face the modern U.S. farmer. CSA cannot be expected to fix the gross inequalities that are inherent to our current system – ones that lead

among other things to problems of inadequate food access. But in this paper, CSA farmers have discussed how the structure of the CSA arrangement is helping to improve their livelihoods.

CSA is incrementally improving farmer livelihoods through the provision of working capital to the farmer. This cash flow, supported by their community members, made it possible for many of the farmers in the study to keep working the land and promoted access to farming by reducing financial barriers to entry. While the number of farms and farmers across the U.S. continues to decline (USDA NASS 2014), CSA farms and farmers are booming. More empirical work is needed to understand what aspects of CSA are attracting new and young farm entrants, but farmers in the study area were clear that the reduction, and in some cases elimination, of farmer reliance on financial institutions directly enhanced their profitability, ability to farm, and livelihoods.

In the interviews, farmers focused on the adequacy of income to meet their basic needs and reliability of the income CSA provided. In general, non-CSA farmers grow one, or at most a handful of commodity crops, which they typically sell all at once post-harvest. Since CSA farmers sell shares of the harvest in advance, they know what their income will be (at least the portion generated by the CSA portion of their farm). This guaranteed income seemed to put much of the farmer's worries to rest.

But were the incomes adequate? As discussed above, incomes fall far short of median wages in the U.S., although mean and median CSA farmer income substantially exceed those for all U.S. farms. These findings are promising, especially in light of the fact that non-CSA farmers rely on agricultural subsidies for a significant portion of their income (Peterson 2009), yet these subsidies were virtually non-existent for CSA farmers. Two primary concerns farmers raised pertaining to income were market concentration and falling prices. While limited data on both

issues exist, some farmers discussed how they struggled to sell all of their CSA shares, and thus had to rely on farmers' markets or wholesale. Farmers in the study stated that share prices today are on average less than half what early CSA were able to charge. Building on synergistic relationships between CSA farms and regional consumers through government support (Beckie et al. 2012) could have a modest, yet positive impact on farmers bottom line.

CSA appears to be helping farmers achieve improved livelihoods, providing them with higher incomes and a viable path to hedge risk. CSA and other forms of civic agriculture promote economic development in ways commodity agriculture cannot (Lyson and Guptill 2004). Both the financial and non-market forms of compensation to CSA farmers are vital to their livelihoods. They are opting into farming, not being forced into it. The CSA model is opening doors by offering a structure where farmers can obtain a livelihood, though financially meager, on small, diversified farms.

7. Conclusion

Many hopes are being placed on CSA farms in the journey to develop a more sustainable agriculture system. In this paper I explore the potential of CSA farms to provide viable livelihoods for farmers – in their own words. To summarize, I found that CSA farmers in the study area had higher gross and net farm incomes than non-CSA farms across the country and in the study region. While this was far below median income in the United States, farmers themselves described the added benefits that come with CSA farming, and AFNs in general, including: community building, ecosystem services, food provision and education.

This paper has made a first attempt at analyzing CSA farmer livelihoods in the farmers' own words through analyzing interviews and questionnaires in the Pioneer Valley of Massachusetts. Much future work is needed to understand better the ability of CSA and other

AFNs to provide opportunities for fair and equitable farmer livelihoods. Since this study was relatively small in size, and located in a hub of local food and CSA activity, it may offer a better-than-average case scenario. To expand the study, a CSA farmer survey, similar to what Lass et al. conducted over a decade ago is needed. While the USDA Census of Agriculture provides some statistics on CSA farms, the data cannot get at questions of farmer livelihoods beyond net farm income. A national study to observe regional variation in net farm income and CSA viability would be beneficial to policymakers and farmers. Given that this paper was trying to unpack farmer income in the farmers' own views, the in-depth interviews in a single geographical location was in order. Moving forward, if CSA farms are to play a role in a transition to a more sustainable food economy, improving farmer livelihoods needs to be central to the discussion.

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Table 1: Key Farm Variables From Sample

	Mean Value	Min	Max
Gross Farm Income	\$85,346.15	\$8,500.00	\$300,000.00
Net Farm Income	\$12,044.00	(\$1,800)	\$27,000.00
Total Farm Acres	28.20	2.0	135
Acres of Cropland in Operation	8.84	0.75	30
Acres Devoted to CSA	7.00	0.75	17
Main Season Shares Sold	71.96	7.0	215
Ideal Number of Shares Sold	106.14	10	400
Price per Share	461.21	200	675
Duration of Share (in weeks)	21.07	18	24
Farms with Crop Insurance	0.00	0.00	0.00
Land Tenure is a Concern for Farmer (percent)	40.00%	0.00	1
Risk of the Farm was Shared with Members	73.00%	0.00	1
Observations	16		

Author's Note: Authors calculations using results from the survey and interviews.

Table 2: Farm Comparisons

Variable	CSA Study Region, Median	CSA Lass et al. Median
Gross Farm Income	\$23,500.00	\$32,081.67
Net Farm Income	\$12,000.00	\$21,117.76
Total Farm Acres	11.00	15.00
Acres of Cropland in Operation	3.75	7.00
Acres Devoted to CSA	3.00	3.00
Main Season Shares Sold	31.00	56.20
Price per Share	\$462.50	\$573.46
Duration of Share (in weeks)	21.0	24.0
Years Farm in Operation	5.0	5.0
Principal Operator Age	46.5	44.0
Principal Operator Years Exp	13.0	10.0

Author's Note: Dollar figures from Lass et al. were converted into 2014 dollars for comparison with the figures from the author's study.
