

Professional Paper
Agricultural Extension Education

FARMERS' MARKET VOUCHER PROGRAMS IN THE UNITED STATES
AND CANADA: BENEFITS AND OPPORTUNITIES

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ABSTRACT

Farmers' Market Nutrition Programs (FMNPs) in the United States and Canada are designed to provide nutrition assistance and nutrition education to low-income families, while supporting and promoting domestic agriculture. This paper examined the current scientific literature on the benefits of the programs to coupon recipients and farmers, as well as the influence of education interventions on nutrition knowledge. Coupon recipients were found to increase their fruit and vegetable consumption through the use of the programs, as well as their nutrition knowledge, and farmers were found to increase their income. FMNPs were determined to be effective at achieving their goals and worthy of continued funding. Suggestions are included to improve coupon redemption rates to maximize the benefits of the programs to all participants, and system infrastructure is suggested for Canadian markets to facilitate the reception of provincial funding, in order to create program growth to benefit more individuals, families, and farmers.

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CHAPTER 1 - INTRODUCTION

Background

The United States established its first farmers' market voucher program in 1992 to improve the health of low-income women, infants, and children by providing access to fresh, nutritious, locally grown fruits and vegetables. The program also aimed to raise awareness, increase the use, and improve sales at farmers' markets. The program was developed in association with the Special Supplemental Nutrition Program for Women, Infants, and Children, known as WIC, and is known as the WIC Farmers' Market Nutrition Program (FMNP). The U.S. established its second voucher program in 2001 for seniors; the Senior Farmers' Market Nutrition Program (SFMNP). These programs are funded by the federal government and administered through state agencies, territories, and federally-recognized Indian tribal governments (United States Department of Agriculture, Food and Nutrition Service [USDA], 2014b). The purpose is to provide nutrition assistance and nutrition education to low-income families, while supporting and promoting domestic agriculture. The farmers' market vouchers can be redeemed at authorized local farmers' markets, roadside stands, community supported agriculture programs (CSAP), or through individual farmers. Eligible foods include unprepared, unprocessed fruits, vegetables, honey, and herbs. Producers can then submit the vouchers at the bank or State agency for reimbursement. Both of these programs provide vouchers during the harvest season to low-income individuals or families who qualify for the programs. According to the federal benefit level, participants in the WIC FMNP must receive no less than \$10 and no more than \$30 of vouchers per year (USDA, 2014a), and participants in SFMNP must receive no less than \$20 and no more than \$50 of voucher

per year, though State agencies may supplement this amount with local or private funds (USDA, 2014b). Amount of vouchers, voucher booklets, and the number of times per season they are distributed is determined by individual agencies. These programs are not operated in all states and not in all areas of the state where they are available. Currently WIC FMNP is available in 46 states and territories (USDA, 2014a), and SFMNP is operated in 52 states and territories (USDA, 2014b).

In the 2012 fiscal year, 1.7 million participants in WIC received farmers' market vouchers. There were 18,246 farmers, 3,392 farmers' markets, and 2,969 roadside stands authorized to accept FMNP vouchers. Table 1 presents this information from 1994 consecutively to 2012. Figures 1 to 3 also depict this information graphically to display the changes in participation from 1994 to 2012. Vouchers redeemed in 2012 through the FMNP resulted in over \$14.3 million in revenue to farmers (USDA, 2014a). Vouchers were also available to 885,116 low-income seniors through SFMNP. There were 19,882 farmers, 3,988 farmers' markets, 3,075 roadside stands, and 154 community supported agriculture programs authorized to accept SFMNP vouchers (USDA, 2014b). Table 2 displays this information from 2001 consecutively to 2012 and Figures 4 to 7 show the growth of the program graphically.

Comparatively, in Canada, farmers' market voucher or coupon programs are only beginning to surface and are generally funded by charitable organizations, which are obtained through the hard work and dedication of volunteers and community organizations. British Columbia is currently the only province that supports any such program with provincial funding. This program is called the Farmers' Market Nutrition Coupon Program (FMNCP) and has been operating since 2007 through the

administration of the BC Association of Farmers' Markets (BCAFM). The pilot project started out in five communities in British Columbia and ran for 15 weeks. The following year it expanded to 10 communities for 17 weeks and in 2009, 16 communities were part of the FMNCP. During this time 3,000 local low-income families received coupons (Public Health Association of BC, n.d.). In 2009, the redemption rate for coupons was at 94% (BC Association of Farmers' Markets [BCAFM], 2010). However, in 2010, the program was cancelled for lack of funding, though some communities sought funding from charitable organizations and municipalities to keep the programs going. In 2012, the province reinstated its funding and provided \$2 million towards the program. It also provided another \$2 million in 2013 to extend the program through to 2016 (British Columbia, n.d.).

In 2013, the British Columbia FMNCP expanded to include 34 communities and support 2292 households, including 1991 mothers, 347 pregnant women, 754 seniors and 2962 children. Participants use the coupons at farmers' markets between July and October and receive \$15 per week, in \$3 increments for products such as fruit, vegetables, meat, fish, eggs, nuts, dairy, and herbs (Context, 2014). In order to participate, farmers' markets must partner with a local non-profit that distributes the coupons. The coupons have an equal cash value at the markets and can be redeemed by the vendor at the end of the event by the farmers' market organizers.

In contrast to the U.S. programs, FMNCP coupons are only offered to low-income families with young children, pregnant mothers, and seniors who are enrolled in cooking and skill-building programs associated with the FMNCP to improve nutrition education. Participants can choose programs such as community kitchens, gardening, canning, and

the Canadian Diabetes Association's Food Skills for Families workshops (British Columbia, n.d.). During the cooking and skill-building sessions, participants learn to cook healthy, nutritious meals using locally acquired farm produce. Organizers of farmers' markets also underscore the educational component of the farmers' market voucher, highlighting it as the most important aspect of the program. They often offer classes on how to use various fruit and vegetables to increase a person's meal possibilities, which is especially important for participants who are new to Canada and are unfamiliar with locally grown fruits and vegetables (McKenna, 2013).

Statement of the Research Problem

Farmers' market voucher programs have existed in the United States for over two decades and are beginning to surface in Canada, but are these voucher systems successful at achieving their goals?

Research Questions

- a) Do farmers' market vouchers improve fruit and vegetable intake for low-income families?
- b) Does nutrition education provided with vouchers help improve nutrition knowledge for consumers?
- c) Does issuing farmers' market vouchers to low-income families benefit or create opportunities for farmers?
- d) Is there opportunity for farmers' market voucher programs in Canada?

Definition of Terms

BCAFM British Columbia Association of Farmers' Markets

EBT Electronic Benefits Transfer (an electronic system that uses magnetically encoded payment cards to deliver state welfare benefits)

FMNCP Farmers' Market Nutrition Coupon Program

FMNP(s) Farmers' Market Nutrition Program(s)

FMC Farmers' Markets Canada

FMO Farmers' Markets Ontario

PHAC Public Health Agency of Canada

SFMRNP Senior Farmers' Market Nutrition Program

SNAP Supplemental, Nutrition Assistance Program, formerly food stamps (a federal program in the U.S. which provides food-purchasing assistance for low-income persons)

Vouchers/Coupons – used interchangeably

WIC Special Supplemental Nutrition Program for Women, Infants, and Children (a program focusing on the health and nutrition of women, infants, and children in association with SNAP)

WIC FMNP Women, Infant, and Children Farmers' Market Nutrition Program

Significance of the Study

Previous research on the success of Farmers' Market Nutrition Programs (FMNPs) has focused on singular markets or specific states. There has not been a study on the overall success of these programs and whether they are reaching their goals. This study illustrates that farmers' market voucher programs in the United States and Canada a) increase fruit and vegetable intake for low-income families, b) improve nutrition education for these families, and also c) promotes and supports domestic agriculture. The success of these programs should 1) encourage the continuation of farmers' market

voucher programs in both the U.S. and Canada, 2) encourage the U.S. to improve redemption rates, and 3) encourage the Canadian government to fund farmers' market voucher programs across the country to benefit low-income families and support farmers.

Researcher's Perspective

If farmers' market voucher programs are achieving their goals, then these programs are undoubtedly a win-win. Families in need are provided with coupons, essentially free money, to spend at farmers' markets on fresh produce. In most cases they are provided with educational material to learn about nutrition, as well as opportunities to improve their health through increased fruit and vegetable consumption. Farmers at market are gaining access to a demographic they often would not be able to reach without the coupons, and are able to share their knowledge with participants through educational interventions. They often gain reason to increase or produce new crops, and ultimately increase their income.

However, not all markets involved with FMNPs are witnessing the maximization of these benefits. Many participants are lacking enthusiasm for the program. This study examines, through literature, if FMNPs are achieving their goals and are indeed beneficial for all participants. It then gathers information from studies that highlight the success of FMNPs at certain markets after implementing various strategies. This is done in order to provide suggestions and recommendations for all parties involved in administering FMNPs, so as to maximize the benefits of the program. Specific suggestions are also provided for Canadian FMNPs that are newly evolving, with the intension of increasing funding, creating program growth, and increasing the number of families and farmers able to benefit from farmers' market vouchers.

Contacts have been made with the United States Department of Agriculture, Food and Nutrition Services, the National Association of Farmers' Market Nutrition Programs, the BC FMNCP, the British Columbia Ministry of Health, Farmers' Markets Ontario, Toronto Public Health, Food Strategy, and with Ontario market organizers and supporters. Many of which have expressed interest in reviewing the findings of this study. Several local organizations have been identified in Kingston, Ontario as well, (which is a very strong supporter of local food systems), that would benefit from the data presented here. It is this researcher's intension that positive changes can be made to FMNPs in the U.S. and Canada by sharing this study with these organizations and agencies.

CHAPTER 2 - REVIEW OF THE LITERATURE

The literary search strategy of this chapter was done primarily through Scholars Portal, Science Direct, and PubMed. The articles reviewed included research conducted between 1991 and 2013. Searches included the following keywords in numerous combinations: farmers' market, nutrition programs, low-income, neighborhoods, fruit and vegetable consumption, and education. Article titles, abstracts, and results were examined, and pertinent articles were retrieved. References cited in these articles were examined, with relevant articles identified, retrieved, and reviewed. Articles and reports were included in this review if they qualitatively or quantitatively examined fruit and vegetable consumption, education programs, or benefits to farmers in association with FMNPs. It should be noted that this paper focused on the two official Farmers' Market Nutrition Programs (WIC FMNP and SFMNP) in the U.S. and grass root voucher programs in Canada. Grass roots voucher programs and other farmers' market incentive programs in the U.S., although mentioned, are not the focus of this paper.

In addition to peer-reviewed articles, on-line newspaper articles were retrieved and used to provide information on volunteer-run farmers' market programs across Canada. Websites dedicated to farmers' markets operating coupon programs were also examined. Email interviews were conducted with U.S. government and non-profit agencies, as well as Canadian government agencies and organizations for statistical and background information on the programs. A webinar with central members of Canadian farmers' market programs was also reviewed as part of the literary search strategy.

Effect of Farmers' Market Vouchers on Fruit and Vegetable Intake for Low-income Families

A U.S. national study was conducted in 1991 to determine consumption patterns for fruits and vegetables of the American population. Results indicated the mean consumption of fruits and vegetables was 3.4 servings, with only 23% of Americans consuming five or more servings on any given day. The survey also showed that consumption patterns for low-income women were amongst the lowest (Subar et al., 1992). According to Feldman et al. (2000), there is a strong association between the consumption level of fruits and vegetables and various cancers. With cancer causing 23% of deaths in the U.S., having a national program aimed at increasing fruit and vegetable consumption for low-income families is critical to help America achieve a higher consumption level of fruits and vegetables for its population. The WIC FMNP and SFMNP are two programs that aim to achieve this goal. Studies have been conducted across the U.S. since the inception of the programs to recent years, to determine if farmers' market voucher programs are helping to improve consumption.

The Connecticut WIC farmers' market voucher program was evaluated in 1992 by Anliker, Winne, and Drake (1992) during the months of July and August, in the pilot year of the program. A total of nine WIC programs participated in the study, six which gave out coupons, and three that didn't (these three were used as a control group). There were 489 participants in the study. Twenty-four percent of respondents said they tried a new food they have never bought before. Nearly half (44.2%) of the coupon users said the program caused them to make changes in their diet, with the most frequent answer reported as eating more fresh foods (39.3%), eating more vegetables (32.1%), and eating

more fruits (25.0%). All of the respondents, who answered the question of whether the coupons were helpful, said yes. Anliker et al. (1992) also noted that individuals who had received coupons before or who had been to farmers' markets before participating in the study were more likely to go back and/or use their coupons, which represents a long-term effect on the use of farmers' markets and nutritional habits.

However, Anliker et al. (1992) determined that there was not a significant difference in consumption of fresh fruits and vegetables between those in the WIC program who received coupons for the Connecticut farmers' market and those who didn't, as well as those who used their coupons and those who did not. There was a notable difference in frequency of consumption of fresh fruits and vegetables though, between those who used the coupons, and those who used their own money or food stamps in addition to the coupons. Those who used their own money or foods stamps in addition to the coupons showed "significantly greater increases in the consumption of fresh fruits and vegetables" than those who only used the vouchers (Anliker et al., 1992, p. 185). A study of the Massachusetts SFMNP by Balsam, Webber, and Oehlke (as cited in Anderson et al., 2001), came to a similar conclusion, stating there was a possible consumption increase of fruits and vegetables for participants who received vouchers, though this conclusion was based solely on the purchase behavior of participants, and food intake was not measured directly. Anliker et al. (1992) also noted that those who returned to the farmers' market had significantly higher consumption rates of fresh and frozen vegetables. This led the authors to conclude that farmers' market voucher programs can increase consumption of fruits and vegetables for low-income consumers

and concurrently help to promote the use of farmers' markets by making participants more aware of the resource.

Similarly in California in 1997, a survey, which spanned 16 counties, 51 farmers' markets, and included 2,000 WIC respondents, showed the voucher program spurred much interest in farmers' markets for the low-income women who received vouchers. Many of them had not been to a farmers market before (85% of survey respondents) but were enthusiastic about shopping at the markets again. Fifty-six percent of the participants said they tried a new fruit or vegetable and 84.5% reported their consumption of fruits and vegetables increased (Joy, Bunch, Davis, & Fukii, 2001). Joy et al. (2001) deemed the farmers' market voucher programs a success because of the increase in fruit and vegetable consumption in relation to the well-known benefits of consuming fresh fruits and vegetables. Success of the program was also contributed to offering families with young children fresh fruits and vegetables due to the introduction of a positive dietary influence at an early age, which they may carry on throughout their lives, lowering their risk for chronic diseases and some cancers.

It was also reported in the California study that those who used their farmers' market vouchers increased their average servings of fruits by 4.2% per day and increased their average servings of vegetables 14.7% per day. The increase in fruit from baseline was 0.1 servings and 0.9 servings for vegetables, which the authors found as statistically significant (Joy et al., 2001). The total intake of fruits and vegetables was 4.50 servings per day in the group that used coupons, and 3.56 in the group that did not use coupons, an increase of almost 1 serving. For survey groups that did not use their coupon, fruit and vegetable intake actually decreased by 1.0% and 7.6% respectfully. These results

coordinate with data from the Michigan FMNP 2001 study that indicate low-income populations are more likely to increase their fruit and vegetable consumption when there are incentives, like vouchers, that make produce more affordable (Anderson et al., 2001).

In Anderson's et al. (2001) review of the WIC FMNP in Genesee County, Michigan, for 208 participants, the redemption rate was 87% (181 participants), with 58% (120 participants) redeeming all of their coupons, 21% (45 participants) redeeming some of their coupons, and 8% (16 participants) redeeming less than half. Twenty dollars in vouchers were provided to the women, which could be used anytime during the June 1 to October 31 farmers' market season. It was found that simply receiving the coupon changed the perception that fruit and vegetables are more expensive than other foods. Participants also reported that their consumption rate of fruits and vegetables increased more over the several months of the market season. The authors suggest that lifting perceived barriers, such as cost, availability, personal and family preference, and convenience, can help low-income women increase their intake of fruits and vegetables.

In Los Angeles, California, between February and August 2001, Herman, Harrison, Abdelmonem, and Jenks (2008) tested the effectiveness of redeemable food vouchers for WIC participants. Interventions were carried out at three WIC centers for six months, and diets were followed for an additional six months. Two of the WIC sites provided vouchers for farmers' markets or supermarkets, and the third was used as a control group, which did not receive a food voucher. Results showed that farmers' market participants showed an increase of 1.4 servings of produce from baseline to the end of the intervention, while supermarket participants showed an increase of 0.8 servings.

Kunkel, Luccia, and Moore (2003) evaluated the South Carolina SFMNP in 2001, during its pilot year, concluding that seniors participating in the program increased their fruit and vegetable consumption. This conclusion was based on purchasing behaviors and self-reports of behavior change of 658 survey participants. Eighty-nine percent of the survey participants reported the intention to eat more fruit and vegetables year round because of the program, however, 83% of the survey participants said they did not purchase foods they have never tried before. Ninety-eight percent of the respondents used one or more voucher, but many complained that the vouchers, worth \$10 each, needed to be issued in smaller increments since farmers are not permitted to make change. Many seniors found it difficult to spend the full \$10 at a single vendor stand.

Also in its pilot year, the Seattle Senior Farmers' Market Nutrition Program delivered bi-weekly baskets of a variety of fresh, locally grown produce to 480 low-income Meals on Wheels participants from June through October 2001. Johnson, Beaudoin, Smith, Beresford, and LoGergo (2004) conducted a study to determine if the program increased fruit and vegetable intake in individuals who received the baskets. One hundred recipients completed a telephone survey before and after the farmers' market season. Fifty-two homebound seniors who lived outside the project service area served as the control group. A self-assessment of consumption patterns was used to determine changes in fruit and vegetable intake. It was concluded by the authors that those who received the baskets increased their fruit and vegetable consumption by 1.04 servings. At baseline, 22% of the basket recipients reported consuming five or more, but by the end of the farmers' market season, that percentage increased to 39%. Johnson et al.

(2004) suggest home delivery of farmers' market produce as an efficient way to increase fruit and vegetable consumption for homebound seniors.

The National Association of Farmers' Market Nutrition Programs (NAFMNP) shared results of a survey in the Program Impact Report for the 2002 WIC Farmers' Market Nutrition Program. The survey was conducted among 24, 800 recipients in 30 different programs across the U.S. More than 40% of the survey participants reported never having been to a farmers' market prior to participating in the FMNP. The NAFMNP felt this exposure to farmers' markets was instilling new awareness to participants regarding the benefits of fresh fruits and vegetables. Seventy-three percent of the respondents said they ate more fresh produce than usual because of the program, and almost 80% said they planned to eat more fruits and vegetables throughout the year (NAFMNP, 2003). In concurrence with these results, Wholesome Wave conducted a survey in 2010 spanning 20 states, for their Double Voucher Coupon Program, and found their vouchers significantly increased the consumption of fresh fruits and vegetables among food stamp participants (nearly 90%). Although, not an official part of the FMNP, the coupons still serve the same purpose and have the same agenda as WIC FMNP and SFMNP vouchers. Wholesome Wave also found the vouchers provided an economic boost to local farmers, farmers' market operators, and surrounding businesses (Close-Up Media Inc., 2011).

Another non-official farmers' market voucher program, Philly Food Bucks, a bonus incentive program at farmers' markets in Philadelphia, Pennsylvania, was evaluated in 2011 to determine if there was an increase in fruit and vegetable consumption for participants of the Supplemental Nutrition Assistance Program (SNAP).

A sample of 662 customers at 22 farmers' markets in low-income communities, were surveyed through face-to-face interviews. Questions focused on changes in fruit and vegetable consumption and whether participants tried new fruits and vegetables. Market-level redemption data was also collected and reviewed (Young et al., 2013). Authors noted Philly Food Bucks users were significantly more likely than non-users to report an increase in fruit and vegetable consumption as well as trying new produce. At market-level, SNAP sales more than doubled at farmers' markets in low-income areas in the first two years of the program from \$1036 to \$2382. A 5-fold increase in annual SNAP sales from baseline resulted at the city's largest farmers' market. According to Young et al. (2013), "markets participating in the Philly Food Bucks program demonstrated larger sales per market than were observed before the bonus incentive program."

Effects of Education on Nutrition Knowledge for Program Participants

In the 1992 Connecticut WIC FMNP study, more than three-quarters of survey respondents said they wanted to learn more about nutrition (Anliker et al., 1992). This indicates that an educational component of FMNPs has the ability to make a significant impact on the health knowledge of low-income families, and in turn help them make lifelong healthy changes in their nutritional habits.

Just and Weninger (1997) agree that an educational component can have a significant impact on FMNP participants. They determine in their study across six states, that a state's effectiveness at providing information with coupons is the single most determinant of social efficiency, because FMNPs are much more effective when supplemented with information. In support of this conclusion, the authors compared Vermont's 14% net benefit of FMNP coupon redemption to the 30% net benefit of

Iowa's program. They explained this variation by noting 80% of Iowa's coupon redemption came from recipients who received information with their vouchers, compared to only 40% of Vermont's coupon redemption coming from recipients who received information (Just & Weninger, 1997).

Havas et al. (1998) strengthen this argument through their 1998 study of the WIC program in Maryland. Although this study wasn't directly tied to farmer's market vouchers, it focused on evaluating and improving the fruit and vegetable consumption of participants through the presence of an educational intervention.

Despite the presence of a national program promoting increased consumption of fruits and vegetables, we demonstrated greater increases in consumption in our intervention participants than in control participants, and these differences persisted one year beyond the end of our intervention. These increases were almost certainly causally related to the peer-led nutrition education sessions and other aspects of the intervention. (Havas et al., 1998, p. 1165)

In Feldman et al.'s (2000) study of the Maryland WIC 5-A-Day Promotion Program, the effects of a multifaceted nutrition intervention on the fruit and vegetable consumption of low-income women were examined. The intervention consisted of nutrition sessions conducted by peer educators, printed materials and visual reminders, and personalized direct mail. Although the intervention had almost equal influence across all demographic groups, the factor that showed significant difference in education attainment was the completion of high school. Participants with greater than a high school education were significantly more impacted by the intervention than those with

less than a high school education. Despite this factor, the intervention was proven successful across all demographic groups for improving fruit and vegetable consumption.

Changes in participants' attitude from pre-test to post-test also held some positive changes. Self-efficacy had the strongest positive relationship with the intervention, followed by attitudes, perceived barriers, and knowledge. Feldman et al. (2000), concluded the intervention was indeed successful at improving fruit and vegetable intake for low-income women across all demographic groups, however, encouraging participants to consume a specific number (in this case, five servings) was not as successful. The authors believe a multifaceted nutrition intervention is highly influential for improving self-efficacy, knowledge, and fruit and vegetable consumption for low-income earners.

Participants in Anderson's et al. (2001) evaluation of the Michigan FMNP, who received an educational component as part of the evaluation, were more likely to have heard of fruit and vegetable intervention slogans and programs. Anderson et al. (2001) also observed that participants who received an educational component with their farmers' market vouchers had a significant improvement in attitude and beliefs about fruits and vegetables, along with improved behaviors concerning fruit and vegetable consumption. Authors noted the educational component alone (with no coupon offered) improved attitudes about fruits and vegetables concerning preparation, a healthy consumption level, perceived cost, and availability. However, participants receiving coupons, with no educational component, improved their consumption behavior but not their beliefs about fruits and vegetables. Due to the effect education had on the attitudes of the participants concerning fruits and vegetables, the authors have determined that

education indirectly affects consumption behavior. It is concluded by the authors that an education-based intervention, combined with the farmers' markets vouchers can increase the fruit and vegetable intake in a low-income population.

Conrey, Frongillo, Dollahite, and Griffin (2003) cited accessibility to farmers' markets and nutrition education as the leading barriers to using FMNP vouchers, so a State-wide initiative in New York in 2001 was established to improve the consumption rate of fruits and vegetables for those involved in FMNPs. Three state-wide agencies, the NYS Department of Agriculture and Markets, the NYS Department of Health, and the Division of Nutritional Sciences/Cornell Cooperative Extension at Cornell University, decided to improve the effectiveness of the FMNP, increase the number of families who benefit, and maximize benefits for participants and farmers. Their method of doing so was by improving the voucher redemption rate by decreasing barriers to the purchase and preparation of fresh produce, such as accessibility to markets (transportation, location, and hours), perceptions about produce, and lack of information about markets. In addition to the collaboration of these three agencies, a full time Extension officer was hired to focus solely on the FMNP initiative, and local organizations' agreed to help make markets more accessible through operation times and locations, but it was the dissemination of nutritional education resources that was essential. Specific FMNP nutrition education resources were developed and sent to 38 local Cooperative Extension associations and 89 WIC agencies. This included videos, recipe cards, and activity books for children. Ninety percent of the agencies utilized the resources in 2001 (Conrey et al., 2003).

In review of their efforts, Conrey et al. (2003) found the redemption rate in New York State (59.67%) to be higher than predicted, even with the loss of six markets due to the September 11th disaster, and despite the strong decline in redemption rates from 1996 to 2000. The redemption rates of 34 other states were also examined, and they all fell below the predicted rates, indicating the efforts of the New York intervention were successful. The authors also conclude that the FMNP is more effective, and consumption of fruits and vegetables are increased, when coupons are combined with nutrition education.

In 2001, Fox, Kirks, and Neyman evaluated the effectiveness of a WIC FMNP nutrition class in Butte County, California, focusing on “improving knowledge regarding the importance of fruits and vegetables and how to use FMNP coupons” (Fox et al., 2001, pA51). Forty-nine participants were asked to complete a pre- and post-test questionnaire. Thirty three percent of the participants were assigned to attend a one half-hour class on nutrition. Sixteen were part of the control group and did not receive the class. It was determined that the scores on the post-test for knowledge of fruits and vegetables were significantly higher for those who participated in the FMNP class than those who did not. Fox et al. (2001) found that attitudes towards fruits and vegetables were favorable to begin with and did not notice a significant difference in attitudes between the two groups. During a telephone interview with 24 of the participants, as a follow-up to the tests, 54% said they ate more fruits and vegetables, 100% said they would continue to shop at farmers markets, and 96% plan to eat more fruits and vegetables throughout the year. The authors conclude that “WIC participants who attend a FMNP class do improve their knowledge and skills regarding fruits and vegetables” and recommend the

implementation of educational programs which target low-income families, to promote behavior change to improve health and nutrition status (Fox et al., 2001, p. A51). Havas et al. (2003), who studied the Maryland WIC food for life program, add that several dietary improvements can be achieved in a low-income population with an effective community-based educational intervention program.

Kunkel et al. (2003) also recommend the further development of nutrition education materials and programs that target low-income families and seniors, in order to improve health and nutrition status, as well as to help familiarize participants with produce they may be overlooking. However, the senior participants of the South Carolina farmers' market listed several barriers to attending nutrition classes, which included lack of available transportation and poor health. In the 2001 study of the South Carolina SFMNP, brochures with nutritional information and a list containing the types of produce available at the market were handed out with the farmers' market vouchers. Nearly all of the participants reported that the nutritional information given with the vouchers was helpful. However, the authors note that some of the survey respondents may not have distinguished between the nutritional information and the program information.

A study conducted by Kropf, Holben, Holcomb, and Anderson (2007) looked at the difference in food security in Ohio, between women participating in WIC, and those in WIC FMNP. It was found that participation in the FMNP was positively associated with increased fruits and vegetable intake, as well as higher levels of formal education. It was also found that vegetable intake servings were greater among participants in the FMNP compared to WIC, although there was no significant difference with fruit intake. Seventy-eight percent of FMNP participants were actively trying to improve fruit intake,

compared to 59% for WIC members. Eighty-three percent of FMNP participants intended to improve vegetable intake compared to 73% of WIC participants. Overall, the FMNP participants exhibited greater psychosocial indicators of a healthful diet such as perceived benefit and diet quality from fruits and vegetables, and were actively attempting to increase their consumption. Kropf et al. (2007) recommend nutrition education for all food assistant programs in order to improve fruit and vegetable consumption, as well as to improve attitudes towards the availability and affordability of fresh produce.

The Pacific Coast Farmers' Market Association also conducted a study to determine if interactive education in combination with the WIC FMNP could improve nutritional knowledge amongst its participants. A live cooking demonstration was implemented as part of an educational program with several WIC FMNPs across California in 2009. The objective was to "increase fruit and vegetable consumption among low-income populations, increase the number of farmers' market transactions conducted with Electronic Benefit Transfer (EBT) cards, and increase the redemption rate of WIC Farmers' Market Nutrition Program (FMNP) coupons" (Nelson, 2009, S27). The demonstrations lasted 45 minutes, focusing on simple, healthy recipes, and were operated at farmers' markets, WIC offices, and FMNP coupon and food stamp offices. Fifty survey respondents documented increased knowledge of types of fruits and vegetables along with increased knowledge of cooking techniques. One hundred percent of respondents said they were willing to try to prepare the same meal at home. Nelson (2009) concluded that cooking demonstrations were a successful, interactive way of educating low-income individuals about nutrition, fresh produce, and cooking techniques.

Another report focusing on EBT programs at farmers' markets found the education information in their brochures that consumers thought was most useful was a chart describing when certain produce is in season (24% of survey respondents). Safe handling of fruits and vegetables, and storage information for different types of fruits and vegetables were also found to be the most useful by 22% and 20% respectively, of survey respondents, which is displayed in Figure 8, providing some insight into the types of nutritional education information that FMNP participants may find beneficial (Bunning, Yeh, & Hoffman, 2009).

Neuenschwander, Abbott, and Mobley (2013) researched training methods for nutritional education for low-income adults from April to December 2010, in particular, the differences in web-based training methods and traditional in-person training methods. One hundred and twenty three adults were part of the study with 66 participating in web-based education and 57 participating in community settings across 14 counties in Indiana. Nutrition classes focused on the importance of fruits and vegetables as snacks and side dishes, Nutrition Facts label reading skills, and whole grains as breakfast foods. Behavior towards these three nutrition areas, as well as breakfast and meal-planning, improved significantly from pre-to post-classes. There was not a significant difference between web-based classes and in-person classes except for the class covering the Nutrition Facts label, where the web-based class was more favorable. Eighty-three percent of the web-based participants also reported a willingness to use the website again, leading authors to conclude that nutritional education improves nutrition knowledge, and that potential exists for incorporating web-based education into programs dedicated to low-income individuals (Neuenschwander et al., 2013).

Effects of Vouchers on Farmers

During the evaluation of the Connecticut Farmers' Market coupon program by Anliker et al. (1992), 216 subjects participated in a post-assessment survey. One hundred seventy-two subjects received coupons and 44 were in a control group. One hundred thirty-nine of the 172 participants attended a farmers' market (80%) during the summer of the study, but only 13 from the control group attended a farmers' market (30%). Of the 172 WIC subjects who received coupons, 99 participants (57.6%) used all of their coupons, 37 used some (21.5%), and 36 used none (20.9%). A little over one-third (36%), of the respondents spent either their own money, food stamps, or both in addition to their coupons at farmers' markets (Anliker et al., 1992). Approximately one-third (31%) of the coupon users returned to the farmers' market after using their coupons, with the median number of times being three. Those with convenient modes of transportation (who did not need to use buses or public transportation) were twice as likely to return. Due to the number of individuals who visited a farmers' market because they received a voucher, spent additional money, and returned to the market more than once, Anliker et al. (1992) conclude that farmers' market programs increase knowledge about farmers' markets and help promote the use of the markets. Joy et al. (2001) also note that farmers benefit from the fact their fresh produce reaches a larger audience, since only 15% of FMNP families had previously visited a farmers' market.

Further data gathered, through their survey amongst 2,000 WIC participants in California, by Joy et al. (2001) confirms that voucher programs benefit farmers. Fifty-one percent of survey respondents said they spent their own cash at farmers' markets, 11.7% used food stamps, and 10.7% used both in addition to coupons. In review of the Conrey

et al. (2003) survey of the 2001 New York farmers' market, it was noted that WIC families purchased \$122,931 to \$316,754 worth of fruits and vegetables above the predicted rate for that year, demonstrating that FMNPs create income for farmers.

The 2002 WIC FMNP Impact report showed that 90% of the 2,561 farmers surveyed that year reported that the FMNP increased their farmers' market sales. This is a significant percentage since 19,000 farmers across the nation reported selling produce only at farmers' markets (National Association of Farmers' Market Nutrition Programs, 2003). By 2006, according to the USDA's National Farmers' Market Survey, the WIC FMNP had the largest effect on vendor sales nationwide and regionally of all government programs, with average monthly sales of \$1,744 nationwide and 61% participation by markets, up from 58% in 2000. SFMNP average sales were \$1,004 per month and 45% of markets reported they accepted SFMNP vouchers. This results in a sizable contribution to farmers' market sales, especially for farmers' markets located in low-income neighborhoods. SNAP and EBT programs have average monthly sales of \$279 and are accepted at 7% of markets (United States Department of Agriculture, Agriculture Marketing Service, 2009).

Just and Weninger (1997) concur that FMNPs result in a net economic gain when its costs and benefits are compared. They calculated the net gain in economic welfare of the WIC FMNP to be 20 to 30% of the coupon redemption value through increased fruit and vegetable consumption, and also found that farmers gain 7 to 9% more than the coupon redemption value through additional purchases, clearly indicating FMNP vouchers economically benefit farmers.

Kunkel et al. (2003), in review of the 2001 South Carolina SFMNP evaluation, concluded that farmers benefit substantially from farmers' markets, and noted that farmers reported specifically benefiting from the voucher program. During the pilot year of the program, 102 farmers participating in the South Carolina SFMP were sent surveys about the effectiveness of the program. Slightly more than half (53%) of the surveys were returned. Forty-one percent of the respondents did not have enough fruits and vegetables to last through the end of the program, and as a result 42% reported they would plant additional crops for the 2002 harvest season (Kunkel et al., 2003). Seventy-six percent of the farmer respondents said they would set up or drive to another location to make produce more accessible to seniors, and 27% would expand hours of operation. Supporting the claim that the SFMNP is beneficial to farmers, 100% of the respondents said they would participate in the program again. Kunkel et al. (2003) conclude the SFMP in South Carolina is an "effective method for increasing consumption of agriculture commodities from farmers' markets by low-income seniors and is worthy of continued funding" (p. 880).

In a 2003 report prepared by Project for Public Spaces, Inc. for the Kellogg Foundation, three farmers' markets located in low-income neighborhoods throughout the country were evaluated for their vendor impact. The Adams and Vermont farmers' market in Los Angeles, California sees around 2,000 customers per day during the growing season and around 700 to 800 per day in the winters. According to the report, these numbers are largely dependent on FMNP coupons (Project for Public Spaces, Inc., 2003). More than half of the customers use either WIC FMNP or SFMNP coupons and about one quarter use food stamps. The Fondy's farmers' market in Milwaukee

Wisconsin, receives 89% of all the FMNP coupons issued in all of Milwaukee. This steady flow of FMNP coupons ensures a steady income for most farmers and creates a high demand for stalls at the market. Fondy's has to repeatedly turn away vendors from Iowa and Michigan who are looking to benefit from the FMNP vouchers (Project for Public Spaces, Inc., 2003). The Broad Street Market in Harrisburg, Pennsylvania, which is located more than five miles from the nearest grocery store, attributes 60% of the market's customers to FMNP coupons. It is noted in the report that the redemption rate for FMNP coupons is much higher than food stamps or EBT redemption. Overall, farmers selling produce and products at these three markets benefit from FMNP vouchers.

Project for Public Spaces, Inc. also produced a report in 2008 that noted the importance of FMNPs to markets in underserved areas. Without FMNP coupons, many of these markets would not be sustainable and vendors would not make a viable amount of sales, so some markets have based their season's opening and closing months around the state's coupon calendar, showing the importance of the programs for farmers (Project for Public Spaces, Inc., 2008). The Lynn Farmers' Market in Massachusetts derives 50% of its vendor's gross sales from WIC FMNP coupons, and the High Springs market in Florida obtains 35% of its revenue from SFMNP vouchers. At the East New York Farmers' Market in Brooklyn, WIC FMNP and SFMNP coupons amounted to \$58,000 in sales in 2007 for its 14 vendors (Project for Public Spaces, Inc., 2008).

Wholesome Wave is an organization that created the Double Value Coupon Program, a non-profit program similar to the official FMNPs. The program matches the amount of food stamps used at participating farmers' markets. According to their 2010

survey, food stamp redemption at farmers' markets doubled after the implementation of the program. Nearly 60% of farmers reported increased sales as a result of the program as well, and in response to this increase, reported making operational changes, such as increased acreage, production, product diversity, or adding additional greenhouses to their farms. Wholesome Wave also reported 40% of coupon recipients planned on spending an average of \$21 at nearby business on market day, contributing to the local economy (Close-Up Media Inc., 2013).

Is There Opportunity for Farmers' Market Voucher Programs in Canada?

Due to the fact farmers' market voucher programs have only been operating in Canada since 2007 and most are organized by volunteers and funded through charitable organizations, literature and statistical analysis is lacking. Two reports were published on the benefits of farmers' markets in general; Baker (2005) and Farmers' Market Canada (2009). The rest of the available information is printed on farmers' market associations' websites, recorded in newspaper articles, or extracted from personal communications. An overview of each market and program will be presented, concluding with a summary that addresses all four research questions.

Benefits of Farmers' Markets in Canada

In a research paper conducted by York University faculty, it was stated that farmers' markets "stimulate local economic opportunity, benefiting local entrepreneurs, customers and the broader community" (Baker, 2005, p. 4). Baker notes these benefits are particularly important for groups who find it challenging to access resources from conventional institutions, such as capital. According to Baker (2005), "women, recent immigrants, and minorities tend to benefit most from the economic opportunities

available at markets” and are able to test their products while limiting their risk (Baker, 2005, p. 4).

Several other benefits of farmers’ markets for farmers are mentioned by Baker (2005). Farmers’ markets are key to preserving local farmland and providing direct marketing opportunities that keep small farmers in business. These direct marketing opportunities provide several benefits. Farmers can market products in ways that are most advantageous to them, like marketing excess produce. Being in close contact with consumers can allow farmers to adjust to needs quickly, like altering packaging, marketing strategies, and production. A greater share of the consumers’ dollar can be kept by farmers as well.

According to a national study released in February 2009 from Farmers’ Markets Canada (FMC), the farmers’ market industry of all 10 provinces “produces \$1.03 billion in annual sales, for a total economic impact of up to \$3.09 billion” (Farmers’ Market Canada [FMC], 2009, p.2). The study also identified being able to buy food directly from the farmer who produced it as an important criteria for consumers. Ninety-two percent of shoppers rated this aspect as important, while 62% rated it as extremely important. FMC (2009) declared “it makes sense to support farmers’ markets at a time when consumer demand for locally grown food is on the rise” (p.2). Some of the other key economic findings of the study include: 28 million shopper visits in 2008, \$32 average purchase per shopper visit, \$100 to \$999 average sales per day per vendor, and one to five jobs created per vendor, which further validates the benefits of farmers’ markets in Canada.

The Grimsby, Ontario Market Bucks Program

The Grimsby, Ontario Farmers' Market voucher program is a volunteer initiative to make fruits and vegetables more accessible to low-income families. The program is called the Market Bucks Program and is funded partially by the Grimsby Benevolent Fund, fees set aside from vendors, and community support through fundraisers. The Grimsby farmers' market was established in 2008 but outgrew its space in three years and moved to a new location downtown. It has 40 full time vendors and serves around 1100 people on Thursday afternoons (Sustain Ontario, 2012). The Market Bucks vouchers are distributed to families who use the food bank, however, each market day, coupons are randomly handed out to shoppers so the identity of individuals who use the food bank is kept confidential. The first year of the Market Bucks program saw \$1200 in community donations with a match from the Grimsby Benevolent Fund. Eighteen hundred dollars worth of coupons was donated to families in need and \$600 worth of coupons was handed out to shoppers on market days. Customers can use the Market Bucks like cash at any market booth, for any product; however, 77% of what they buy is spent on fruits and vegetables (Sustain Ontario, 2013). Vendors are reimbursed 100% at the end of the month.

The Grimsby farmers' market organizer, Michelle Seaborn, sees the program as a win-win situation. Vendors receive higher sales than they would without the coupons being distributed, low-income families are able to purchase products of their choice, and the community benefits by being able to donate to a good cause and also through the random distribution of Market Bucks to shoppers on market days. Seaborn explained that because of the program, farmers expanded what they bring to the market to sell, and that

the food bank is going directly to farmers to receive more of the products they want that they are unable to get on market days (Sustain Ontario, 2012). This relationship with farmers, which has been created through the community supported voucher program, is increasing the availability and consumption of fresh fruits and vegetables for low-income families who use the Grimsby Food Bank, and creating new opportunities for farmers.

The Stonegate Farmers' Market in Etobicoke, Ontario Market Money Program

Porter (2010) describes the Stonegate Farmers' Market in Etobicoke, Ontario, as exquisite, with fresh herbs, fresh produce, and fresh baked goods at premium prices. However, Market Money helps consumers, who normally cannot afford to shop at the market, buy fresh, local products. The Market Money program was initiated in 2009, with a small grant from the organic food foundation Carrot Cache, providing 240 families with a \$15 voucher. With a slightly larger grant from the McLean foundation, the program will expand and families will receive \$15 twice a season (Porter, 2010). The vouchers are issued through the health centre and food bank, allowing families to buy items they really want from the farmers' markets instead of settling for what is available at food banks and half-off sales at grocery stores when the produce is no longer fresh.

Organizers are happy with the success of the program but would like to see the program expand in order to help more families. Eighty percent of the vouchers were redeemed, with 80% of those used on fruits and vegetables, indicating an increase in fruit and vegetable consumption for participants. Porter (2010) suggests the Ontario government invest some of the \$24 million designated to expand the market for farmers into institutions like schools, into these volunteer run farmers' market voucher programs. Porter (2010) also suggests doing so might help the Ontario health ministry with its

agenda to reform the special diet allowance since the benefits of consuming fruits and vegetables are well known, and a farmers' market is a great place to purchase fresh produce.

The Downtown Farmers' Market in Windsor-Essex County, Ontario Market Dollar Program

The Downtown Farmers' Market in Windsor-Essex County partnered with Pathway to Potential, Food Matters, and the United Way to pilot a voucher program in 2012 for more than 500 low-income families. Twenty dollars was provided to families and individuals through the Market Dollar program, who normally do not have access to healthy nutritious food. Lorraine Goddard, interim CEO for the United Way, said they committed \$10,000 to fund the program when food security was identified in 2010 as one of its strategic investment priorities. Goddard noted that the program not only helped families eat healthier but that it helped the local vendors as well. "It's a win-win because we're promoting local businesses, the farmers, and the other food suppliers, as well as the most vulnerable in our community are benefiting, and it's helping to create a healthier Windsor and Essex County" (Wright, 2013, para. 6).

At the end of the summer, 307 (slightly over 60%) of the coupons were redeemed, which market organizers felt was very high for a pilot project (Hall, 2013). "For Ontario Works recipients [unemployment recipients] specifically, it's a really difficult situation where you're trying to survive on, in the case of an individual, about \$600 a month," said Adam Vasey, Pathway to Potential director. "Often, there's very little money, or no money, left over. So to have a program like this...to supplement some of those challenges, it goes a long way" (Wright, 2013, para. 8). Organizers want to make sure

families are empowered to buy what they really want, whether nutritious food or personal care items like soap. Vasey also said a lot of people avoid using the food bank, so the market coupon program allows them access to healthy, local food in a public space where there is a diverse atmosphere and a mix of income levels (Wright, 2013).

According to Vasey, part of the Market Dollar program focuses on educating participants about the benefits of shopping for local food at the farmers' market. He said health food in stores is traditionally expensive, but consumers learn it can be reasonably priced at the farmers' market. He hopes once individuals see what is available at the market, they may begin to see it as one-stop shopping (Wright, 2013). According to a survey given to recipients of the Market Dollars, 86% said it was their first time at the market, and 90% said they would return (Hall, 2013). This has made a significant impact on farmers' as well, as vendors have seen an increase in sales since the inception of the program (Wright, 2013).

The BC Nutrition Coupon Program

The province of British Columbia is currently the only province in Canada supporting farmers' market voucher programs financially, although Manitoba is in the planning stages of creating a three-year pilot nutritional coupon project through the Manitoba Intergovernmental Affairs, a branch of the Department of Conservation (Farmers' Markets Association of Manitoba Co-op Inc., n.d.). The BC program is sponsored by the Ministry of Health, which provides the funding, the Ministry of Social Development, which is committing to the long term exiting of poverty of four specific communities; the Ministry of Agriculture, which aims to support low-income families and farming; and the Canadian Diabetes Association, which receives government funding

to deliver food skills to pregnant women, young families, seniors, and families in need (Sustain Ontario, 2012). There are 34 participating farmers' markets and 49 community skill-building groups involved in this province wide program (Context, 2014).

In order to participate in the BC Nutrition Coupon Program, low-income individuals and families must enroll with a community partner and sign up for a skill-building class (BC Association of Farmers' Markets, 2013). The skill-building component of the program is critical, because it helps participants become familiar with the types of fruits and vegetable grown locally, and they learn to cook healthy (McKenna, 2013). The classes also help consumers learn to be frugal, and it helps them make personal healthy choices from that point on (Sustain Ontario, 2012). However, according to an evaluation of the skill-building programs offered in 2013, a vast majority of seniors in Victoria and Vancouver felt they shouldn't be required to attend the cooking class offered in their communities, and that they didn't learn anything new. Many of the young mothers in the Victoria focus group could not recall what they learned or if it was helpful. In contrast, young mothers in the Vancouver focus groups felt the cooking class was very beneficial, taught them to cook, provided them with recipes, and introduced them to new foods (Context, 2014). Suggestions were provided by participants on improvements to skill-building classes, such as having classes designated for seniors only or parents with small children, learning smaller sized recipes, learning to read labels, learning about chemicals and preservatives in food, receiving information about seasonal foods, as well as receiving recipes and demonstration directly from vendors. Participants also suggested offering classes at more convenient locations, and suggested improving the administration of the classes (Context, 2013).

Once participants are a part of the program, they receive \$15 per week for 14 weeks to spend on fresh fruits and vegetables, herbs, nuts, cheese, eggs, fish, and meat. Coupons are handed out with booklets containing tips for shopping, and are printed in eight different languages. In review of the first year of the program, organizers saw an imbalance of purchases by their participants. Participants would save up their coupons and use them on more expensive items, like meat, meaning they weren't improving their consumption of fresh fruits and vegetables. The program now distributes different colored coupons in their packets to be used for specific products. Blue coupons can be used for fruits, vegetables, herbs, nuts, dairy, eggs, fish, and meat. Green coupons can be used to purchase fruits, vegetables, herbs, nuts, dairy, and eggs, but not for fish or meat (Sustain Ontario, 2012).

The BC Nutrition Coupon program has a very high redemption rate, with 85% of the coupons spent (Sustain Ontario, 2012). According to a New York study by Conrey et al. (2003), a high redemption rate of coupons is a successful way of increasing the fruit and vegetable consumption of participants. Participants are appreciative of the program and its affect on their fresh produce intake and overall health. The Caribou Family Enrichment Centre shared a story of two mothers in the pregnancy outreach program who started crying because they were so happy to be able to feed their kids fresh fruit and vegetables. The Centre also encountered a participant who had never seen or eaten Swiss chard, and they were able to give her a recipe so she would know how to prepare it (BCAFM, 2010). Parents at the Powell River Family Place expressed surprise when their children enthusiastically consumed unfamiliar greens like kale, arugula, and endive they had picked from the Family Place garden.

According to a non-profit organization, seniors find the program useful on their budgets from being able to buy items to freeze, can, or pickle. They also find the program beneficial to their health simply from being able to buy fresh fruits and vegetables that provide essential vitamins that they need (BCAFM, 2010). Participants also enjoy interacting with vendors, asking questions, and learning about the products. One participant even described the vendors as “the Google of fruits and veggies” (Context, 2014, p 14). Vendors see a benefit from the coupons too, especially at smaller markets, through the increased sales created by the coupons (Sustain Ontario, 2012).

According to Context (2014), all focus group participants agreed the FMNCP improved their access to local food and increased their ability to purchase it. The program also had some longer-term effects, as participants attempted to locate and purchase local foods after the farmers’ market season. Participants also noted that they learned about healthy eating, local foods, and farming primarily from the vendors at the market, and second from the skill-building classes. Other benefits from the FMNCP that were highlighted by participants include a connection to their communities, to other families in the program, and to market vendors.

Summary

Regardless of the state, program, or design of the study, studies conducted from the inception of the FMNPs to recent years consistently show an increase in fruit and vegetable consumption for participants, whether recorded in consumption percentage, serving amount, or reflected in an attitude change towards fresh produce. Results were also synonymous concerning educational classes associated with farmers’ market vouchers. Education, whether multi-faceted, interactive, a formal class, or a simple hand-

out, changed perceptions about fruits and vegetables, broadened knowledge about nutrition, encouraged participants to try new produce, improved redemption rate of coupons, and ultimately increased the consumption of fruits and vegetables. Farmers also clearly benefit from the programs. Not only do they benefit from the direct sales created from the vouchers, but consumers often spend their own money at the markets as well. Farmers' willingness to expand their business, relocate the market, and extend hours in order to harvest the financial and economic benefits is another clear example of the opportunities created by FMNPs for farmers. Opportunities also appear to exist for the expansion of farmers' market programs in Canada due to the benefits for participants and farmers. Consumption of fruits and vegetables is improved for participants, knowledge about produce and how to prepare foods is improved, and farmers are seeing an increase in sales, as well as gaining access to a new demographic of customers. Overall, FMNPs are achieving their goals and making a positive difference in the health and livelihoods of members.

CHAPTER 3 – FINDINGS, DISCUSSION, AND RECOMMENDATIONS

Findings

Farmers' Market Vouchers Increase Consumption of Fruits and Vegetables

It is clear from studies conducted between 1992 and 2011 that farmers' market vouchers positively influence the fruit and vegetable consumption of low-income individuals participating in the WIC FMNP, SFMNP, or similar programs. Table 3 lists the studies, examined in this paper, that record a change in either serving size or consumption percentage for study participants, to clearly demonstrate that regardless of the amount of change in fruit and vegetable intake, there is indeed an increase observed in each study.

Studies also concur that attitudes towards fruits and vegetables are greatly improved after receiving farmers' market vouchers, along with a willingness to try new fruits and vegetables. Five studies documented the percentage of participants who planned to incorporate more fruits and vegetables into their diets throughout the year because of the influence the program had on their attitudes towards fresh produce and nutrition. Table 4 shows that over 80% of participants across studies, planned to increase their fresh produce intake beyond the farmers' market season. This indicates that a potential long-term influence on eating habits may occur because of farmers' market vouchers.

Anliker et al. (1992) found in their study of the Connecticut WIC FMNP that if participants had been to a farmers' market before, or returned after their initial visit, they were more likely to increase fruit and vegetable consumption. Several studies cited the percentage of participants who had never been to a farmers' market before and those who

planned to return to farmers markets after their initial experience. Table 5 displays this information. In most instances, FMNPs introduced over 80% of their participants to farmers' markets, and a very high percentage of customers planned to return.

Nutrition Education Improves Nutrition Knowledge for Participants

Between 1992 and 2009 several studies were also conducted to review the effect of nutrition education on nutrition knowledge of WIC FMNP and SFMNP recipients. A study in 2010 by Neuenschwander et al. (2013) on nutritional education training methods for low-income adults saw the same results. Literature suggests that nutrition education positively affects fruit and vegetable consumption for FMNP participants. Several studies demonstrated a consumption increase, as well as an improvement in attitude towards fruits and vegetables concerning preparation, a healthy consumption level, perceived cost, and availability. Behaviors towards fruits and vegetables were also improved, leading to dietary improvements, and improved health and nutrition status. Behaviors can be changed by education simply through familiarizing participants with produce they may be overlooking (Kunkel et al., 2001).

Feldman et al. (2000) found that participants with a high school education were more significantly impacted by the nutrition education intervention than those without; however, fruit and vegetable consumption was still improved for both groups. Many different learning materials, tools, and presentation were used as part of the studies' educational interventions, resulting in a conclusion that using several different types or combinations of educational methods and materials can effectively impact different demographic groups and meet the needs of different learning styles. Neuenschwander et al. (2013) found that web-based lessons have the potential for a greater impact on

participants than in-person lessons, and should be considered an effective tool for education for food assistance programs; however, any form of education can positively influence nutrition habits, especially in combination with incentives, like coupons. Kropf et al. (2007) recommend nutrition education for all food assistance programs because of its benefits and influence on health, which Just and Weninger (1997) support by concluding that FMNPs are much more effective when nutritional information is provided with coupons.

Participants in FMNPs showed interest in wanting to learn about nutrition. Three-quarters of the participants in the Anliker et al. (1992) study wanted to learn about nutrition. Nelson (2009) found participants enjoyed live cooking demonstrations at markets and that they were effective for educating participants about nutrition, produce, and cooking techniques. Demonstrations at markets, tips for shopping, and classes about how produce is grown, storage of fruits and vegetables, safe handling, and in-season produce were all topics participants were interested in learning about. FMNPs administrators should consider consumer interests when creating educational materials to successfully construct an effective and impactful nutrition education program.

Farmers' Market Vouchers Benefit Farmers

Literature clearly demonstrates that FMNP vouchers benefit farmers. Farmers' market coupons bring new customers to markets and create an opportunity for these individuals to become repeat customers, as observed in Table 5. Once participants become repeat customers, they not only redeem vouchers but spend their own money at the markets, providing increased profit for vendors. Just and Weninger's (1997) study calculates a net gain in economic welfare of the WIC FMNP to be 20 to 30% of the

coupon redemption value. They also describe a 7 to 9% additional gain through purchases from customers' own funds. Anliker et al. (1992) found that 36% of participants in Connecticut used their own money or food stamps in addition to vouchers, and Joy et al. (2001) found that 73% of program participants in California spent their own money, food stamps, or both at the markets in addition to vouchers. The national average of additional spending by WIC FMNP participants is 51% (Joy et al., 2001).

This increase in sales is clearly presented in the 2002 WIC FMNP Impact report, where 90% of the farmers surveyed reported an increase in sales (NAFMNP, 2003). Due to the increase in sales from FMNP vouchers, some farmers plant more crops, expand their produce selection, are willing to drive to and set-up at a more convenient location for customers, and some are even willing to extend their hours at the market. In general, farmers participating in the FMNPs are enthusiastic about participating in the program year after year. The motivation for farmers to be a part of these programs, expand their business, and put in additional time and work, comes from the financial and economic benefits they receive.

Opportunities Exist for Farmers' Market Voucher Programs in Canada

Opportunity appears to exist for the expansion of farmers' market voucher programs in Canada. The benefits of these programs are clearly presented in the research of U.S. market programs, and seen through the pilot programs currently operating in Canada: vouchers increase fruit and vegetable consumption for participants and support local farmers. Regardless of the size of the market, or the number of families benefiting from the program, Canada's farmers' market voucher programs are making a difference in their communities. Farmers are seeing an increase in sales and gaining access to a new

demographic of customers. Consumers are able to purchase products they normally couldn't afford, and try products to which they have never been exposed. They are also increasing their consumption of fresh fruits and vegetables and gaining from the well-known benefits of fresh produce. Skill-building and nutrition classes are helping participants learn to cook new foods, educating them about the nutrition, and helping them with shopping tips, including how to be frugal. There is great potential for Canada's farmers' market voucher programs, and strong reason to support them, based on their benefits to participants, farmers, and communities.

Discussion

FMNPs Are Worth Continued Investment

FMNPs are accomplishing what they set out to do: improve the health of low-income families through increasing fruit and vegetable consumption, while supporting and promoting domestic agriculture. It makes sense to support and continue to fund programs that have a successful track record, successfully meet targets, and benefit a wide variety of people, yet, there are even more reasons to support FMNPs.

Programs are cost effective and have far-reaching benefits. The breadth of the programs' benefits, and the low cost of funding are two other reasons to continue investment. In 2012, the WIC FMNP and SFMNP provided coupons for a combined total of 2,602,784 recipients throughout the farmers' market season, and helped create income for over 19,000 farmers. In 1997, the cost per consumer including tax burden, for WIC FMNP was less than \$0.02 annually (Just & Weninger, 1997). After scaling coupon distribution and redemption rates observed in Massachusetts to a national level, Just and Weninger (1997) concluded the net effect considering taxpayer expense of coupon

redemption was a gain of \$2,937,660, meaning society gained about 20.8% of the program outlay. Since most government programs that aid the disadvantaged cause economic inefficiency, the payoff for the FMNP is very high (Just & Weninger, 1997).

Programs can decrease future health care costs. FMNPs are a worthy investment because of the improved long-term effects from healthy habit formations. Several studies suggested the incentive to purchase fresh produce, especially in combination with nutrition education, has great potential to positively influence the attitudes and behaviors of participants toward fruits and vegetables. The early introduction of a positive dietary influence on children involved in the program may also create healthy lifelong habits (Joy et al., 2001). The health benefits of eating fruits and vegetables are well known, and include lowering risk to many chronic diseases and cancers. According to the World Health Organization (2002), low intake of fruits and vegetables is estimated to cause about 19% of gastrointestinal cancer, 31% of ischaemic heart disease, and 11% of stroke worldwide. Improving health through the consumption of fruits and vegetables would reduce future health care costs.

Although some studies show preventative measures are not always cost-effective in comparison to future health care costs, improved diet is one of the exceptions, especially when promoted through societal interventions. For example, diabetes affects approximately 1.9 million Canadians (Public Health Agency of Canada [PHAC], 2008) and is one of the preventable chronic illnesses that consume 75% of health care spending in the U.S. (Centers for Disease Control and Prevention, 2009). A lifestyle intervention to prevent diabetes involving a healthy diet and moderate physical activity has substantially lower associated costs than popular pharmaceutical interventions, even when considering

costs such as time, exercise classes, exercise equipment, food, food preparation items, and transportation (PHAC, 2010).

Cancer is another condition that can, in certain situations, be prevented through positive life-style habits. According to PHAC (2010) “the World Cancer Research Fund, in collaboration with the American Institute for Cancer Research, has conservatively estimated that 25% of all cancers could be prevented solely through healthier diets and more physical activity” (para. 11). In a study that evaluated the economic performance of ten nutrition interventions, including several interventions focused on increasing fruit and vegetable consumption, Dalziel and Segal (2007) found that all appeared to be cost-effective “to reduce the growing disease burden linked to poor nutrition (p 271).”

FMNPs are effective, low-cost, community delivered programs that help educate consumers about nutrition and provide a way for low-income families to improve their fruit and vegetable intake. The results of increased fruit and vegetable consumption are improved health and reduced future health care costs. FMNPs are also successful at providing income for farmers. However, there are several ways in which these programs can be improved and have an even greater and more significant impact on members, communities, and the overall health of the nation.

Implications for Practice

Redemption Rates

The most important factor concerning the overall benefits of FMNP vouchers is the redemption rate. If recipients are not using their coupons, they receive no benefit and farmers at markets see no increase in sales. Redemption rates at Canadian markets are fairly high, but currently the number of families receiving vouchers is low, especially in

comparison to the decades-old federal programs operating in the U.S. In the U.S. redemption rates vary by market, some as low as 45% and some as high as 98% as displayed in Table 6. Throughout the years and across the country, there appears to be no consistency when it comes to voucher redemption. Some studies implemented several different strategies to improve redemption rate, such as, reducing barriers, providing nutrition education, collaborating with local agencies, advertising, and making markets more attractive to consumers, which resulted in significant redemption rate increases. The following are suggestions that may help improve redemption rates at markets and thus increase the benefits to participants and farmers.

Reduce barriers. Receiving money towards fruits and vegetables is good incentive for recipients to attend a farmers' market and bring home fresh produce; however, there are several barriers that often keep participants from redeeming their coupons. Market location is one of those barriers. If the market is relatively far away from a participant's residence, it may be difficult to find the time and means of transportation to get there. This is especially true if participants rely on public transportation, which is yet another barrier. Anliker et al. (1992) discovered that those with convenient modes of transportation (do not rely on public transportation) are twice as likely to return to a farmers' market after their initial visit, so it is possible to conclude that those with convenient modes of transportation are more likely to attend a farmers' market and redeem vouchers in the first place, than those who use public transportation. The times in which the market operates can also be a barrier. If the times do not compliment work schedules or bus schedules, it may be difficult for participants to attend.

Seventy-six percent of farmers surveyed at a farmers' market in South Carolina said they would set up at a more convenient location for consumers (Kunkel et al., 2003), so relocating a market is not an unreasonable solution to improve redemption rates. Relocating markets was one of the strategies implemented in New York State, which saw improved redemption rates by the end of their study (Conrey et al., 2003). New York also altered operating times of markets that suited the needs of participants. Communities can work with their transit systems as well, in order to provide direct routes from low-income neighborhoods to current market locations, which would operate at times coinciding with the market. Setting up shuttle buses from a central location to the market is also a way to address these barriers and make attending a market more convenient for consumers (Context, 2014). As another way to address barriers, including poor health for seniors, Johnson et al. (2004) suggest home delivery of farmers' market produce. Fruit and vegetable consumption was increased by 1.04 servings for the homebound seniors participating in their survey, indicating that by reducing or eliminating barriers, participants can receive the benefits intended by the program.

Other types of barriers that exist can be associated with shame. Disguising coupons is one way to alleviate embarrassment for some recipients, and thus improve redemption rate of vouchers. The Grimsby Farmer's Market in Ontario, randomly hands out free coupons to market consumers on the day of the market to conceal the identity of low-income voucher recipients (Sustain Ontario, 2012).

Provide more coupons at once. Some consumers have suggested that receiving more coupons at once would make a trip to the market more worthwhile (though coupons should still remain in small increments since vendors are not permitted to make change).

If participants have attended a class about storage, cooking, canning, or freezing of produce, so as to ensure that additional produce purchased is not wasted, this may be a good option to improve redemption rates. For Canadian markets that don't limit what can be purchased or ones that allow purchases of dairy products and meat, which are significantly more expensive than fruits and vegetables, this would certainly create more motivation to overcome any existing barriers in order to redeem coupons.

Ensure participants receive educational materials. Some FMNP voucher recipients may not redeem their coupons because they don't recognize the value of fresh produce or its affect on health. Fruits and vegetable are often viewed as being more expensive than other foods, and produce at farmers' markets are thought to be more expensive than grocery stores. Educational interventions have proved to change participants' attitudes and behaviors towards fruits and vegetables, helping them see the benefits of fresh produce and helping them become more familiar with actual quality and pricing of fruits and vegetables at markets.

Nevertheless, it is important to provide information that participants are interested in knowing and in ways that motivate participants to redeem their coupons. Some senior participants of the BC FMNCP found it difficult to attend a skill-building course and were not happy that it was a required component of receiving the coupons. Suggestions were made by participants to offer different types of skill-building classes by community partners in their area, hold education sessions at the market, have vendors provide information about their crops and farming, and to offer classes as part of a shuttle service to the market in order to be more convenient (Context, 2014).

It is important to also address the delivery of the educational interventions. Teachers, instructors, trainers, and even those simply handing out educational information should “buy in” to the program and show enthusiasm about sharing nutritional information. Teacher enthusiasm has the potential to contribute to a student’s appreciation of the subject and of the value of the material (Taehee & Schallert, 2014). If those delivering the educational information show interest in the subject, they can encourage participants’ own appreciation for the information, resulting in newly acquired nutritional knowledge and the desire to improve health through fruit and vegetable consumption, thus creating motivation to attend a market and redeem vouchers.

To influence teacher enthusiasm, training is suggested. As a result of training, attendees participating in the Conrey et al. (2003) study reported an increase in knowledge about the FMNP and an increase in motivation to use the educational resources made available to them to share with FMNP participants. An excellent way to provide adequate training is through the collaboration of local organizations that are in support of FMNPs. The sharing of information, resources, and best practices can produce the most efficient and desirable outcomes. Collaborating with local agencies is also another way to increase redemption rates.

Collaborate with local agencies. The benefits of collaborating with local organizations are many. Partnering with community and rural development groups, health organizations, agriculture departments, public transit, schools, churches, and other local agencies provides opportunities that would not exist, or at least be limited, for a single WIC agency or farmers’ market. Partnerships can provide opportunities for co-promotion, shared responsibilities, training for vendors, educators, and administration,

dispersal of information, leveraging for financial support, and even the overall improvement of health for the community.

A farmers' market in Camden, New Jersey, arranged to have health screening checks done at the market each week. The market soon became a place for patrons to access fresh produce and look after their health and the health of their families. The blood pressure and diabetes screening became so popular that neighboring health organizations were added to waiting lists to share their health education, information, and screenings at four other nearby markets (Project for Public Spaces, Inc., 2008). It was also interagency collaboration that increased the capacity of New York State to administer and promote the WIC FMNP, provide educational training, and reduce barriers to the purchase and preparation of fresh produce, ultimately resulting in improved redemption rates (Conrey et al., 2003).

Hire a designated FMNP manager. In order to improve FMNPs redemption rates, it's beneficial to have a designated person to identify opportunities for improvements and lead the efforts. Any market, office, or government agency, at any level of involvement in the program (WIC offices, cooperative extension offices, health agencies, agriculture agencies, farmers' market associations, or individual markets) can decide to hire a manager in order to increase the benefits of FMNP vouchers to low-income families and farmers through improved redemption rates. Having a designated manager is also a good way to pursue relationships with local organizations, coordinate efforts between agencies, ensure the goals and messages are unified, and track the results of strategies implemented to improve coupon redemption.

Many farmers' markets have invested in a market manager to instigate efforts to improve market appeal to the community, increase sales, and add more patrons, which includes finding ways to boost FMNP voucher redemption to help achieve these goals. Having a paid manager has substantially increased the income of market vendors, despite their initial skepticism, and resulted in greater economic success for a number of markets (Projects for Public Spaces, Inc., 2008). Cornell Cooperative Extension hired a part-time statewide manager to initiate and coordinate redemption rate improvement efforts across New York, which included the development of nutrition education resources, interagency collaboration, and administration of the distribution of resources (Conrey et al., 2003). The manager was an integral part of the success of the project to increase FMNP voucher redemption, participant fruit and vegetable intake, and market sales.

Create repeat customers. It is smart business to focus marketing efforts on repeat customers rather than spend the time, energy, and money it takes to attract new customers. Potential customers will also only be interested in marketing efforts if they are ready to buy or looking for a change, which is all a matter of timing (Wuorio, 2011). Dan Madigan, Project Leader at the Toledo, Ohio farmers' market, directs the majority of advertising and marketing efforts at the market's core shoppers. "Why spend so much money on mass advertising, when you can dedicate your resources to people you know will patronize the market?" (Project for Public Spaces, Inc., 2008, p. 13).

FMNP voucher recipients are the perfect repeat customers because the coupons are of no cost to them. They essentially receive "free money" to use on fresh produce at farmers' markets, and in most cases are provided with coupons more than once per season. Anliker et al. (1992) illustrated that FMNP participants who returned to a

farmer's market showed an increase in fruit and vegetable consumption, so turning FMNP voucher recipients into repeat customers is truly beneficial to the program. However, if recipients don't redeem their coupon, neither the recipient nor the farmer, benefits. Fortunately, there are several ways to entice FMNP coupon recipients to attend a farmers' market and to keep them coming back.

Make markets more appealing. Turning a farmers' market into a community gathering place is a great way to attract and maintain a core customer base. A farmers' market in Webb City, Missouri, added cultural festivals and tours to "increase the market's visibility and transform its function in people's minds from merely a place to buy and sell fruits and vegetables, into a vibrant community destination" (Project for Public Spaces, Inc., 2008, p.14).

Many other markets that were part of the Project for Public Spaces, Inc. (2008) study, worked to transform markets into socially diverse public places that celebrated the different demographics of the community through music, shopping, food, and entertainment. Market organizers also tried to increase the variety of products to reflect what patrons wanted, and held cooking demonstrations as a way to share cultural-specific recipes. The Toledo, Ohio, market was one which incorporated these changes, as well as making a few structural changes like a shaded seating area, to create a repeat customer base. The result was increased market sales of \$100,000, the addition of six market days, four new vendors, and an increase of \$1000 in FMNP sales (Project for Public Spaces, Inc., 2008).

Advertise FMNP at markets and participating vendor stalls. It makes sense that voucher recipients would be provided with information about which markets accept coupons, but there is much more information that participants want to know. Having simple, easy access to this information helps make the market experience more enjoyable and leads to the potential of repeat customers. Participants of the BC FMNCP showed interest in receiving information about what each vendor was selling, prices, which vendors were accepting coupons, and where the vendors were located at the markets. Some participants found it hard to determine what they could purchase and where to locate vendors selling products they wanted because participating vendors were placed randomly throughout the markets. Suggestions were made to place participating vendors close together and to have program information available at the markets (Context, 2014).

The Athens, Ohio, farmers' market promoted its acceptance of FMNP vouchers through posters and promotion packages at 30 different community organizations like food pantries, libraries, rural post offices, and child and family services. They also worked to get more vendors to participate in FMNPs and held vendor meetings to explain the season's WIC, SFMNP and EBT initiatives. The market even hired staff members to set up a stall at the market in order to answer questions and provide information about FMNP voucher programs. These efforts resulted in a 99% redemption rate for the SFMNP and a very successful season for EBT sales, especially during its first year of EBT acceptance (Project for Public Spaces, Inc., 2008).

Provide coupons more often. If barriers like location and transportation have been eliminated or reduced, offering FMNP vouchers several times a season could be an impactful way of creating repeat customers. If \$21 worth of coupons is offered once per season (\$21 was the average amount of WIC FMNP coupons offered in the 2012 season, see Table 1), a participant may not find the trip to market worthwhile or find any existing barriers too inconvenient to redeem the coupons. If FMNP participants enjoy the market experience, feel a part of the community, and learn about unfamiliar produce, they are likely to return to the market to redeem vouchers, and also because they've become loyal customers, which means they may return to the market to use their own money to purchase fresh produce. Thirty-four percent of WIC FMNP participants at a market in Connecticut spent their own money in addition to coupons (Anliker et al., 1992), and 51% of participants in a California study spent additional money (Joy et al., 2001). Wholesome Wave found that 40% of their Double Value Coupon Program recipients even intended to spend an average \$21 at businesses nearby the market (Close-Up Media, Inc., 2011). Having FMNP recipients become repeat/loyal customers can improve fruit and vegetable intake for participants and create additional revenue for farmers and the community in general.

Improving redemption rates of farmers' market vouchers is a good way to ensure the intended benefits of FMNPs are reaching low-income families and farmers. There are many ways to accomplish this through market initiatives, WIC offices, or other government organizations and by collaborating with each other. Many markets across the U.S. have been successful at this and should be used as models for markets or WIC offices trying to improve their nutrition programs and redemption rates. Improving

redemption rates may also be an important factor to ensure continued funding for the programs. Table 1 shows that WIC FMNP grant amounts have been steadily decreasing since 2005, as well as the number of recipients, and SFMNP grant amounts started to decrease in 2010, as observed in Table 2. If budgets for the programs are not met, then it appears less money is needed, when in fact the program should be expanded to help more families in need, support local agriculture, and help improve the health of the nation through increased fruit and vegetable consumption. Using the grant money provided, by redeeming vouchers, is a good way to show the effectiveness of the program and a way to secure future program funding.

Additional Recommendations for Canadian Programs

British Columbia has a growing farmers' market voucher program operated by the BC Association of Farmers' Market and funded by the provincial government. The program adds new markets every year, along with new community partners willing to help educate participants about nutrition. The number of families receiving vouchers continues to increase. However, the program is not without its challenges. The operational structure is still under construction; getting coupons and funds where they need to go, tracking the distribution and redemption, and preparing support material. Orientation for educational/skill-building community partners is also a major challenge. The FMNCP is flexible to an extent but needs to ensure a high quality program for the experience of participants. Many stakeholders in the program would also like to see the restrictions on what can be purchased at market loosened and the list of eligible items broadened (P. Leblanc, personal communication, June 25, 2014).

In the BC FMNCP, individual markets reimburse their vendors for nutrition coupons redeemed, then the BCAFM reimburses markets from the funding provided by the provincial government (Sustain Ontario, 2012). Since the province fully funds the FMNCP, government officials implement rules, regulations, and standardizations for all markets concerning who can receive coupons and what can be purchased. For example, honey cannot be purchased with FMNCP vouchers, because the BC Ministry of Health has indicated it poses health risks to children under the age of one (Sustain Ontario, 2012).

The volunteer-run voucher programs in Ontario (currently the only other province besides BC with farmers' market voucher programs) show little interest in receiving provincial funding partially because of these types of challenges and restrictions. Bob Chorney, Executive Director of Farmers' Markets Ontario (FMO), said there is not much appetite from FMO to be involved with such programs (B. Chorney, personal communication, April 30, 2014), and other market organizers have hesitated to vie for government funding out of concern that it would result in more rules and uniform programs (C. Young, personal communication, April 22, 2014). Also, because Canada does not have the same social assistance infrastructure that the U.S. has, with its national food stamp and EBT systems, market organizers and local funders question what systemic changes can be created through voucher programs and doubt government interest in supporting them (C. Young, personal communication, April 22, 2014; A. Freeman, personal communication, April 22, 2014).

Nevertheless, involving government in Ontario's farmers' market coupon programs would create opportunity for markets to significantly expand their programs.

Programs would be able to offer coupons to larger numbers of families in need, provide more money for each family participating in the program, and create additional revenue for farmers, as witnessed in the BC program. The consistent supply of funding that a government source could provide would allow the market to grow each year, instead of just being sustained through constant fundraising and by seeking local support. The Grimsby market relies heavily on community support, which is reflected in its budget each year. The first year of the program saw donations of \$1200 that were matched by a community partner, but during the second year only \$900 was raised, which was also matched (Sustain Ontario, 2012). This \$600 difference is quite significant for a community in how many people receive coupons and how often. Government funding could provide the momentum needed to not only keep the program operating at the same level each year but to aid its growth by helping to build market revenue.

Although Ontario market organizers share a common hesitation and concern for seeking government involvement, they should remain confident that a cost-sharing or reimbursement system could work. Canadian social assistance generally operates through block funding called the Canada Social Transfer (CST). The federal government provides a block transfer to provinces and territories, leaving the administration of programs to these entities and their municipal governments (Government of Canada, 2011; Ontario. Ministry of Community and Social Services [MCSS], 2012). Yet some social programs operate independent of federal block funding, as cost-sharing or reimbursement programs (Ontario. MCSS, 2013). The BC FMNCP is essentially a social assistance program that operates on block funding from the province and is administered through the BCAF. Ontario (or other provinces interested in receiving government funding for farmers’

market voucher programs) could seek to model their programs' funding after the federal/provincial cost-sharing system, with the province reimbursing a portion of their expenses, and administration managed by individual markets. A visual comparison of the federal block funding and cost-sharing social assistance systems is provided in Appendix A. Appendix A also depicts how the BC FMNCP is modeled after the block sharing system and how Ontario could model their market programs after the cost-sharing system.

Using a reimbursement system could allow markets to continue to operate according to their own rules and guidelines. They could continue to decide who should receive coupons, the amount of the vouchers, how many vouchers each individual or family receives, what can be purchased, and how often farmers are reimbursed for redeemed coupons. The province could then reimburse the market for redeemed voucher that are within set guidelines. For example, the province may reimburse vouchers redeemed by seniors, pregnant women, nursing mothers, or families receiving a certain level of the Canada child tax benefit (CCTB), which is a tax-free monthly payment made to eligible families to help them with the cost of raising children under age 18 (Government of Canada, 2014). Tracking these specific coupons could be made as simple as making all coupons eligible for reimbursement a specific color. Once redeemed by farmers, market organizers would be able to report redemption amounts to the province for reimbursement. Coupons provided to individuals and families outside of these criteria would need to be funded by the market. If the province decided to implement further restrictions, such as limits on what can be purchased, markets would only need to enforce these restrictions for coupons that are being reimbursed by the province, therefore still

allowing autonomy for the cost-sharing initiatives incurred by the market. Appendix B illustrates how this proposed market system would work.

With this type of reimbursement system, only a few standardizations would be required, such as reporting schedules and requirements, leaving much flexibility within market programs and their operations. Alternatively, implementing a few additional standardizations across the province, such as using a province-wide specific color coupon for eligible reimbursements, could encourage new markets to commence issuing vouchers to qualifying individuals and families by taking some of the toil out of the start-up process. Receiving provincial reimbursement, and thus potentially building market revenue each year, would also encourage and motivate new markets to take part in this worthy initiative.

Government interest in supporting FMNPs can be deducted from its investment into local food systems. The Ontario government has invested \$116 million in Ontario grown food since 2003 (Ontario Ministry of Agriculture, Food and Rural Affairs [OMAFRA], 2014a). In August 2014, the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) announced the 68 farms, bakeries, wineries, and other local businesses that will receive a combined \$10 million from the first and second intakes of the Ontario Local Food Fund. The fund supports innovative, local food projects that create jobs, increase sales and stimulate new investments while celebrating local food (OMAFRA, 2014b). FMNPs could be exceptional candidates for the Local Food Fund, not only because they meet the criteria, but because of their direct positive impact on the health and wellness of families in need.

FMNPs are win-win programs where families, farmers, and communities all profit. Families have the opportunity to improve their nutrition knowledge and health, farmers receive additional income, and communities are strengthened by the coming together of community members. Finding ways to improve U.S. FMNP efficiencies, such as improving redemption rates (summarized in Appendix C) and securing ways to grow FMNPs in Canada, is essential to maximize the benefits for all participants.

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Table 1

WIC FMNP growth from 1994 to 2012

Fiscal Year	Total Grant Amount	Average Weighted Benefit Level	Total FMNP Recipients	Total Number Authorized Farmers	Total Number of Authorized Farmers' Market	Total Number of Authorized Roadside Stands
1994	*	*	78,112	*	*	*
1995	*	*	73,495	*	*	*
1996	*	*	92,697	*	*	*
1997	*	*	86,388	*	*	*
1998	*	*	1,389,630	1,253	9,589	276
1999	*	*	1,579,928	11,475	1,560	236
2000	*	*	2,014,799	12,897	1,622	471
2001	*	*	2,359,336	13,741	1,834	708
2002	*	*	2,162,382	13,176	1,911	913
2003	*	*	2,372,256	16,226	2,345	1,078
2004	\$27,951,989	\$19	2,516,724	14,050	2,548	1,583
2005	\$28,066,989	\$22	2,686,210	14,323	2,715	1,999
2006	\$23,809,901	\$22	2,497,162	14,259	2,896	2,136
2007	\$22,109,323	\$22	2,347,866	15,062	3,217	2,371
2008	\$21,401,908	\$22	2,304,810	16,016	3,367	2,398
2009	\$21,750,214	\$21	2,242,321	17,636	3,645	2,676
2010	\$22,089,143	\$21	2,153,467	18,245	3,647	2,772
2011	\$23,282,876	\$21	1,919,477	18,487	4,079	3,184
2012	\$20,516,928	\$21	1,717,668	18,246	3,392	2,969

Note. Adapted from T. Nixon, personal communication, March 4, 2014.

* Data not available

Table 2

SFMNP growth from 2001 to 2012

Fiscal Year	Total Grant Amount	Average Weighted Benefit Level	Total SFMNP Recipients	Total Number Authorized Farmers	Total Number of Authorized Farmers' Market	Total Number of Authorized Roadside Stands	Total Number of CSAs
2001-Pilot	*	*	419,127	8,508	1,205	866	49
2002	*	*	633,186	11,065	1,613	1,296	218
2003	*	*	800,374	13,919	2,074	1,792	220
2004	\$16,707,579	\$35	802,102	14,518	2,495	1,982	213
2005	\$15,000,000	\$33	771,285	14,668	2,663	2,001	237
2006	\$15,843,618	\$30	825,691	14,528	2,958	2,323	260
2007	\$16,203,649	\$29	697,739	14,128	2,727	2,300	155
2008	\$21,835,982	\$33	963,685	17,156	3,159	2,512	199
2009	\$22,444,551	\$31	809,711	18,714	3,684	3,061	159
2010	\$22,455,007	\$31	844,999	20,106	4,601	3,681	163
2011	\$22,226,755	\$31	863,097	19,069	4,598	3,445	141
2012	\$22,241,184	\$31	885,116	18,992	3,988	3,075	154

Note. Adapted from T. Nixon, personal communication, March 4, 2014.

Table 3

Studies that record a change in either serving size or consumption percentage for participants

Author	Year of Study	Location	Program	Percent of participants who increased consumption of fruits and vegetables	Increase in serving size of fruit and vegetables from baseline
Anliker et al.	1992	Connecticut	WIC FMNP	44.2%	*
Joy et al.	1997	California	WIC FMNP	84.5%	1.0 serving
Herman et al.	2001	Los Angeles	WIC FMNP	*	1.4 servings
Johnson et al.	2001	Seattle	SFMNP	*	1.04 servings
Fox et al.	2001	California	WIC FMNP	54%	*
NAFMNP	2002	Nation Wide	WIC FMNP	73%	*
Kropf et al.	2007	Ohio	WIC FMNP	78%	*
Wholesome Wave	2010	Nation Wide	FM Food Stamp	90%	*

Note. *Data not available

Table 4

Studies that document the number of participants planning to increase their fruit and vegetable consumption throughout the year

Author	Year of Study	Location	Program	Participants planning to increase fruit and vegetable intake throughout the year
Joy et al.	1997	California	WIC SFMNP	94%
Kunkel et al.	2001	South Carolina	SFMNP	89%
Fox et al.	2001	California	WIC FMNP	96%
NAFMNP	2002	Nation Wide	WIC FMNP	80%
Kropf et al.	2007	Ohio	WIC FMNP	83%

Table 5

Studies that show the percentage of participants who had not been to a farmers' market before receiving vouchers and the percentage of participants who plan to return

Author	Year of Study	Location	Program	Had not been to a farmers' market before	Planned to return to a farmers' market
Anliker et al.	1992	Connecticut	WIC FMNP	80%	31% ^a
Joy et al.	1997	California	WIC FMNP	85%	76.4%
NAFMNP	2002	Nation Wide	WIC FMNP	40%	*
Fox et al.	2001	California	WIC FMNP	*	100%
Hall	2013	Windsor	Market Dollars	86%	90%

Note. ^a Participants who did return during study period after using coupons. *Data not available

Table 6

Redemption rates for various markets in the U.S. and Canada

Author	Year of Study	Location	Country	Program	Redemption Rate
Anliker et al.	1992*	Connecticut	U.S.	WIC FMNP	79.1%
Joy et al.	1997	California	U.S.	WIC FMNP	62%
NAFMNP	2000	Nation Wide	U.S.	WIC FMNP	57%
Anderson et al.	2001	Michigan	U.S.	WIC FMNP	87%
Kunkel et al.	2001*	South Carolina	U.S.	SFMNP	98%
Conrey et al.	2001	New York	U.S.	WIC FMNP	59.67%
Project for Public Spaces	2003	Milwaukee	U.S.	WIC FMNP & SFMNP	47% ^a
Project for Public Spaces	2007	Brooklyn	U.S.	WIC FMNP	45%
Project for Public Spaces	2007	Brooklyn	U.S.	SFMNP	90%
Project for Public Spaces	2007	Athens, Ohio	U.S.	WIC FMNP	78%
Project for Public Spaces	2007	Athens, Ohio	U.S.	SFMNP	98%
Porter	2010	Stonegate	Canada	Market Money	80%
Hall	2012*	Windsor	Canada	Market Dollar	60%
Sustain Ontario	2012	British Columbia	Canada	FMNCP	85%

Note. ^a Redemption rate has significantly increased since 2003 through the implementation of several market initiatives.*Pilot year of the program

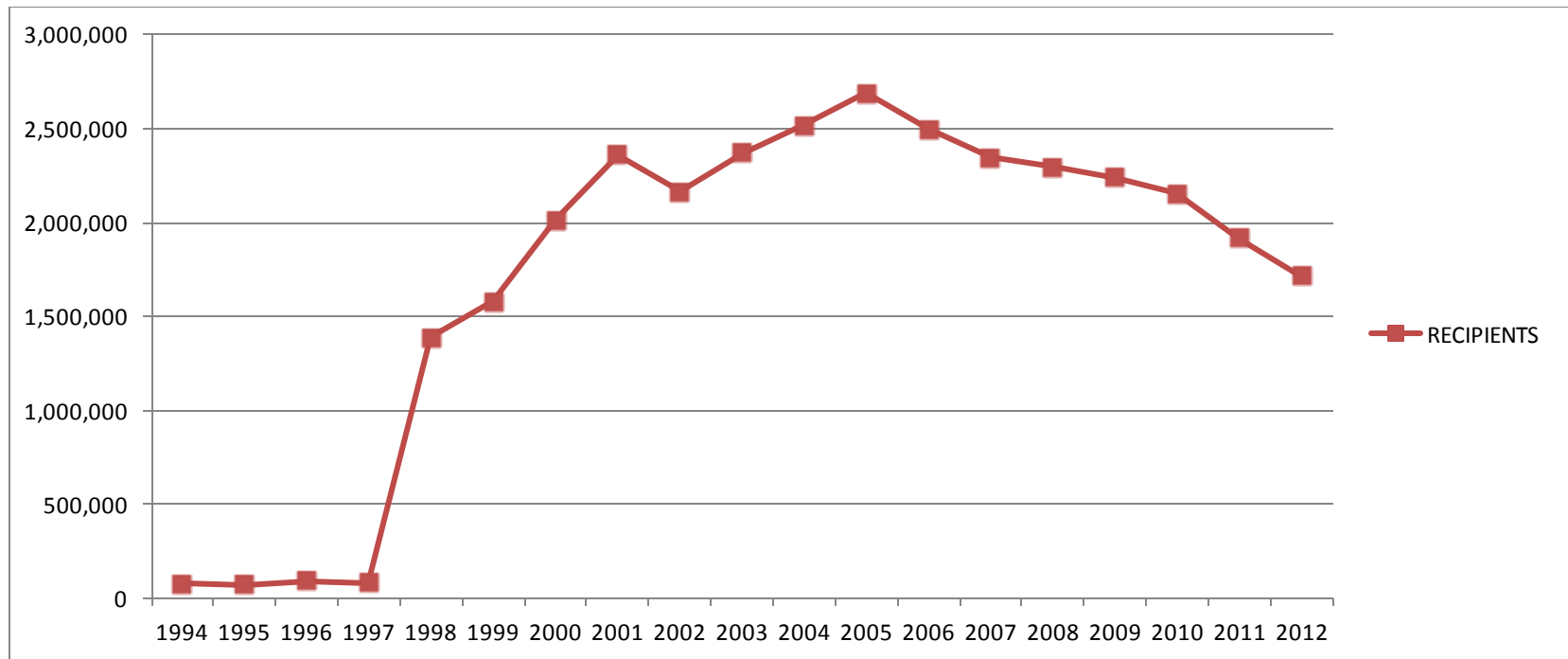


Figure 1. Number of WIC FMNP recipients per year for years 1994 to 2012. Adapted from T. Nixon, personal communication, March 4, 2014.

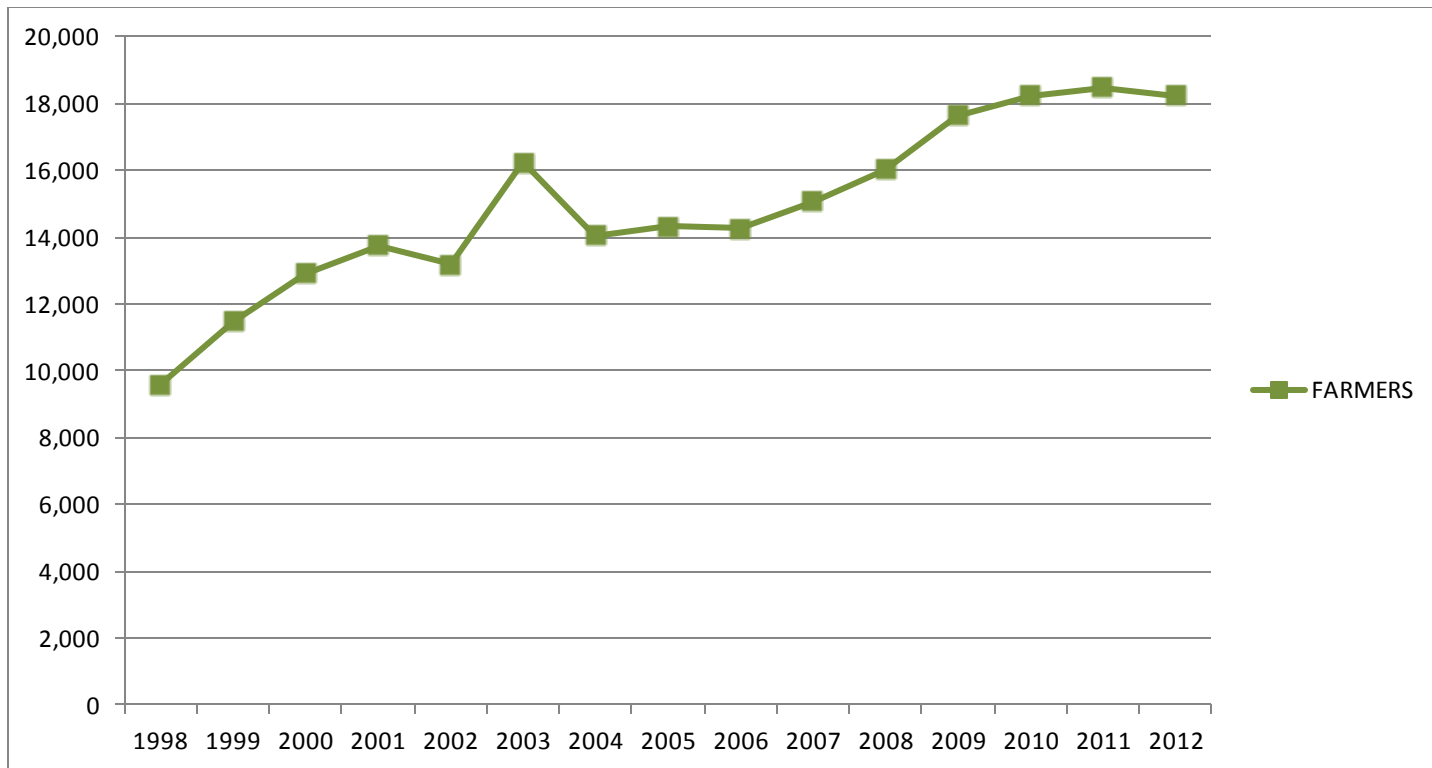


Figure 2. Number of farmers participating in WIC FMNP for years 1998 to 2012. Adapted from T. Nixon, personal communication, March 4, 2014.

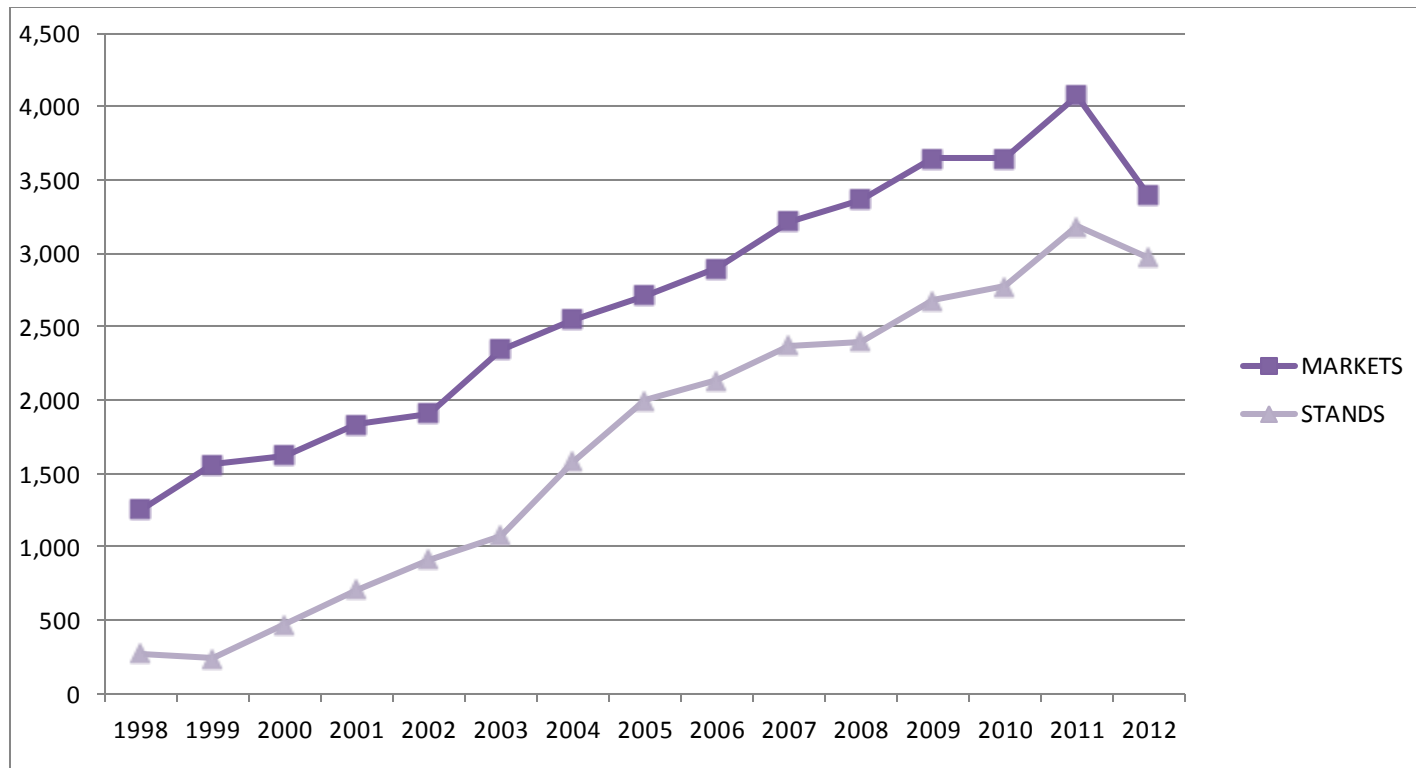


Figure 3. Number of farmers' markets and roadside stands participating in WIC FMNP for years 1998 to 2012. Adapted from T. Nixon, personal communication, March 4, 2014.

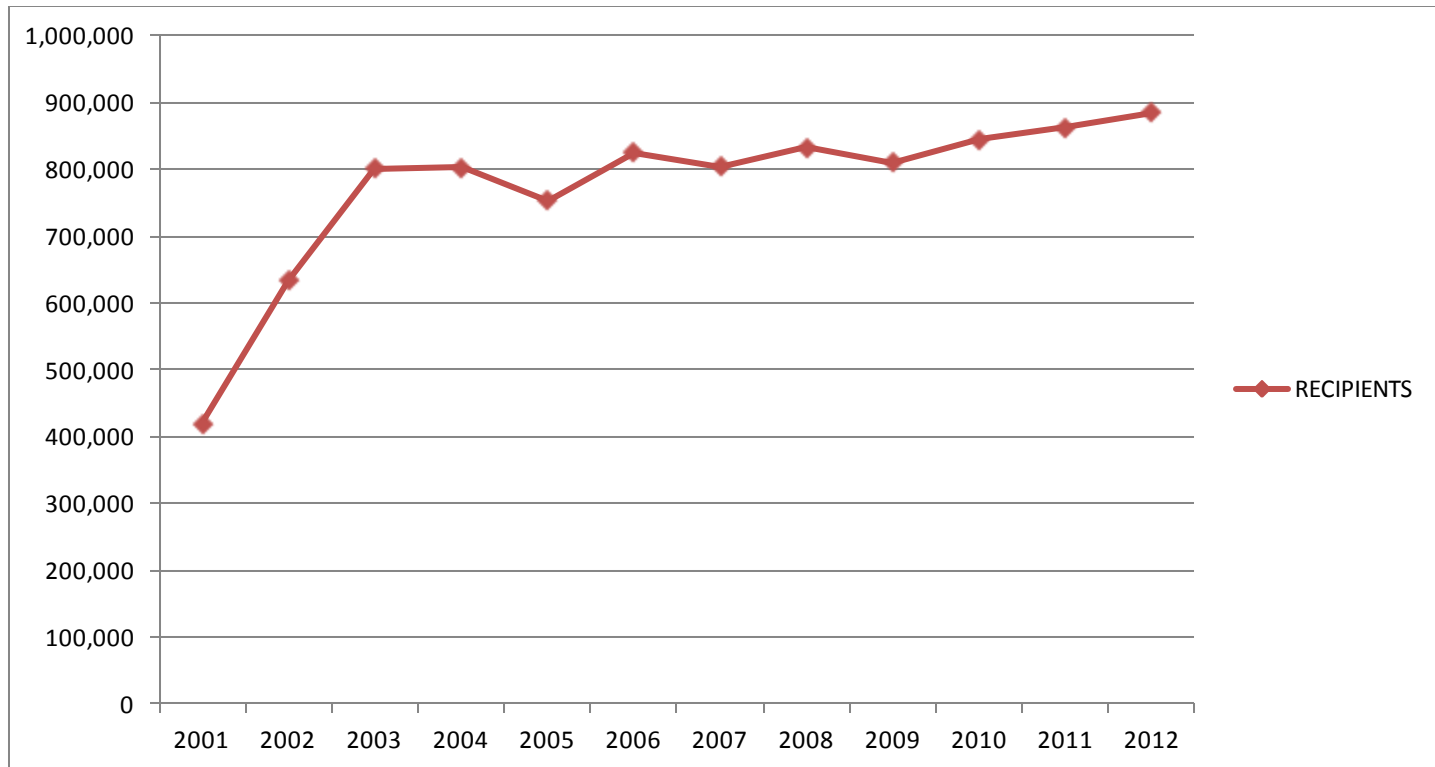


Figure 4. Number of SFMNP recipients per year for years 2001 to 2012. Adapted from T. Nixon, personal communication, March 4, 2014.

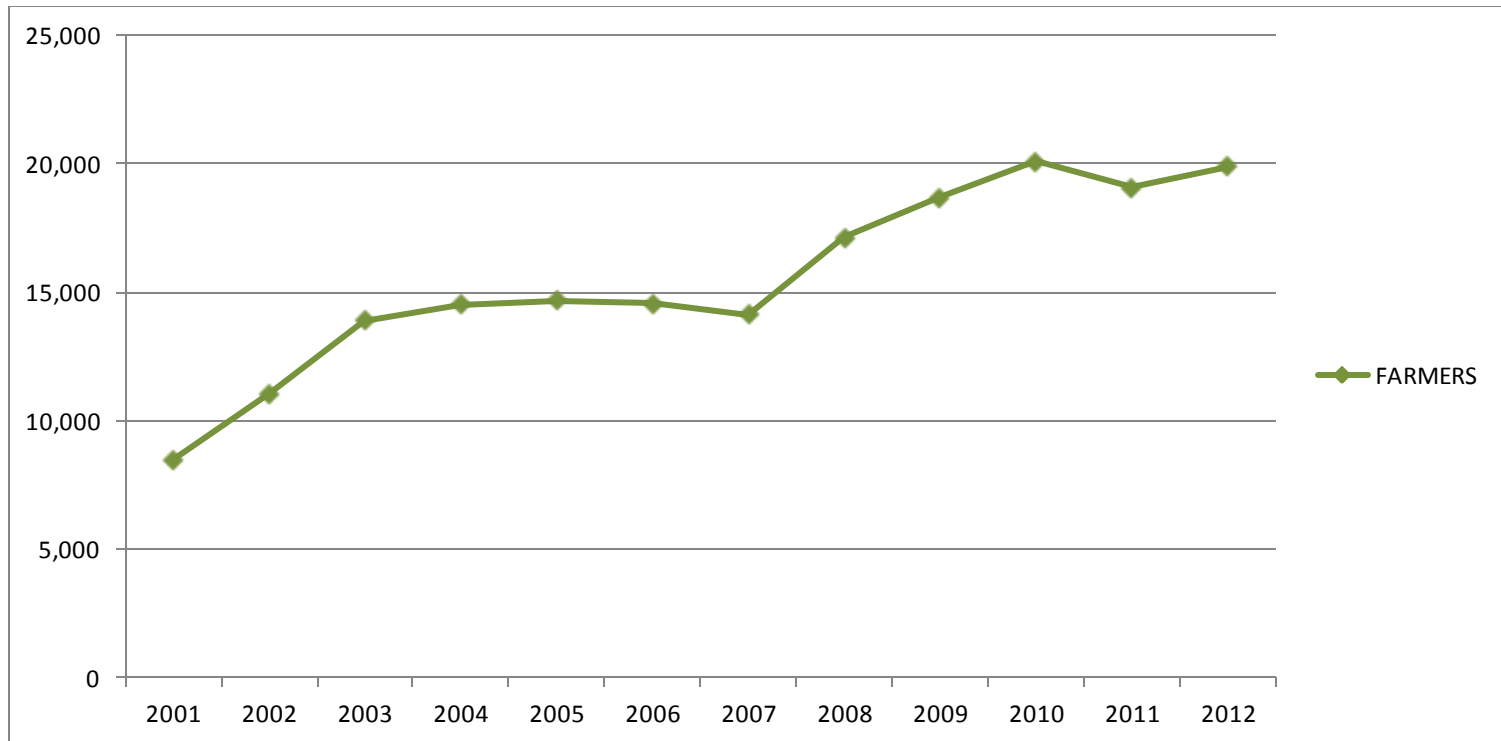


Figure 5. Number of farmers participating in SFMNP for years 2001 to 2012. Adapted from T. Nixon, personal communication, March 4, 2014.

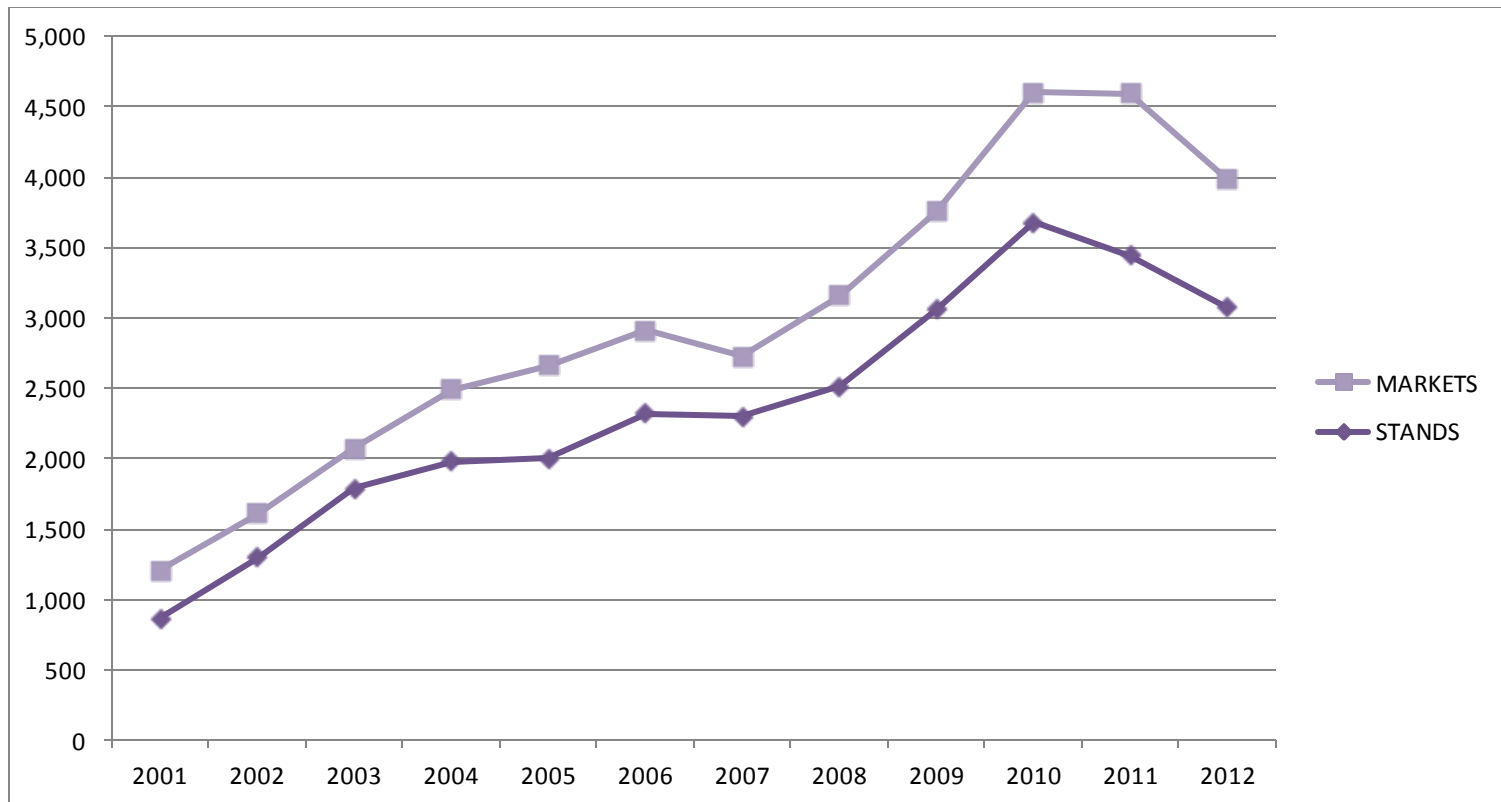


Figure 6. Number of farmers' markets and roadside stands participating in SFMNP for years 2001 to 2012. Adapted from T. Nixon, personal communication, March 4, 2014.

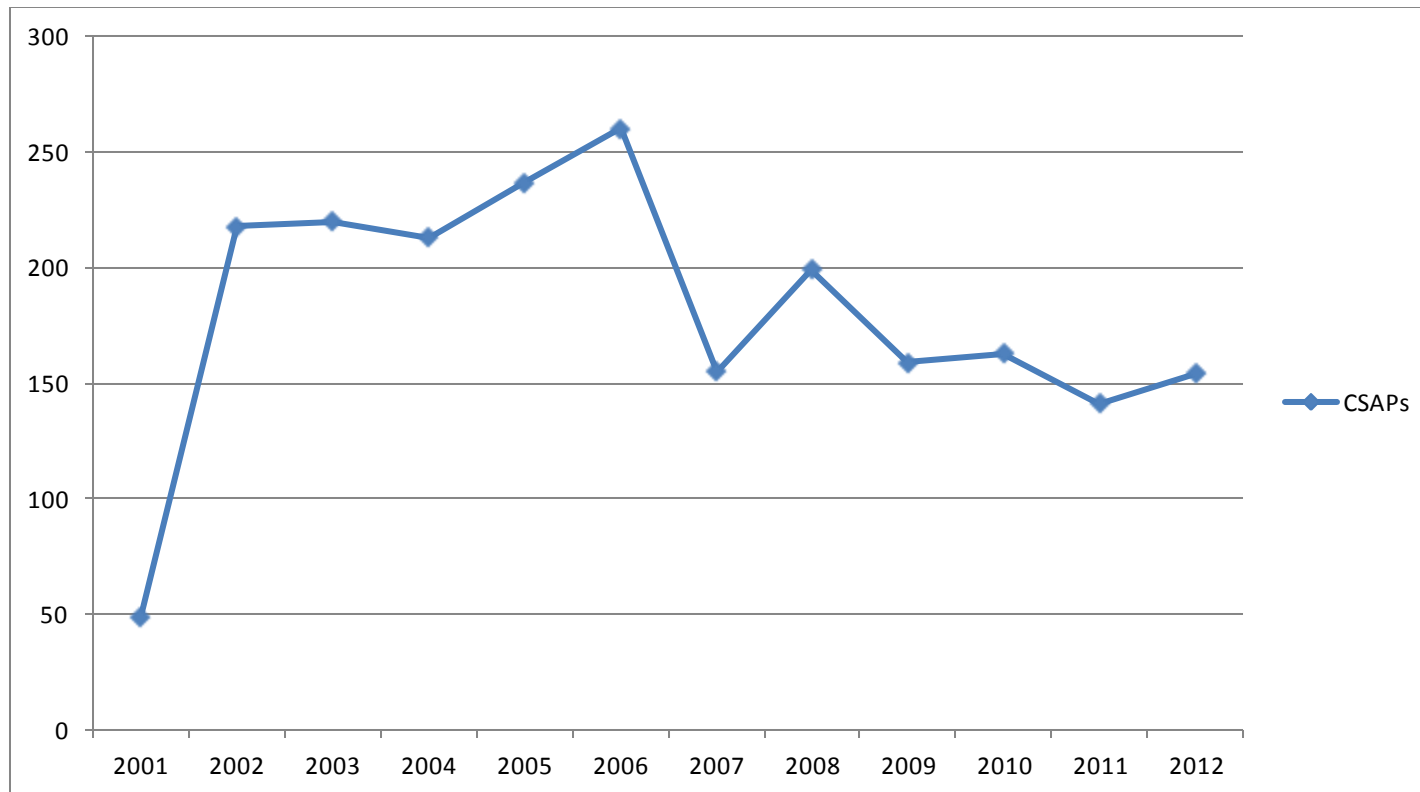


Figure 7. Number of community support agriculture programs (CSAPs) participating in SFMNPs for years 2001 to 2012. Adapted from T. Nixon, personal communication, March 4, 2014.

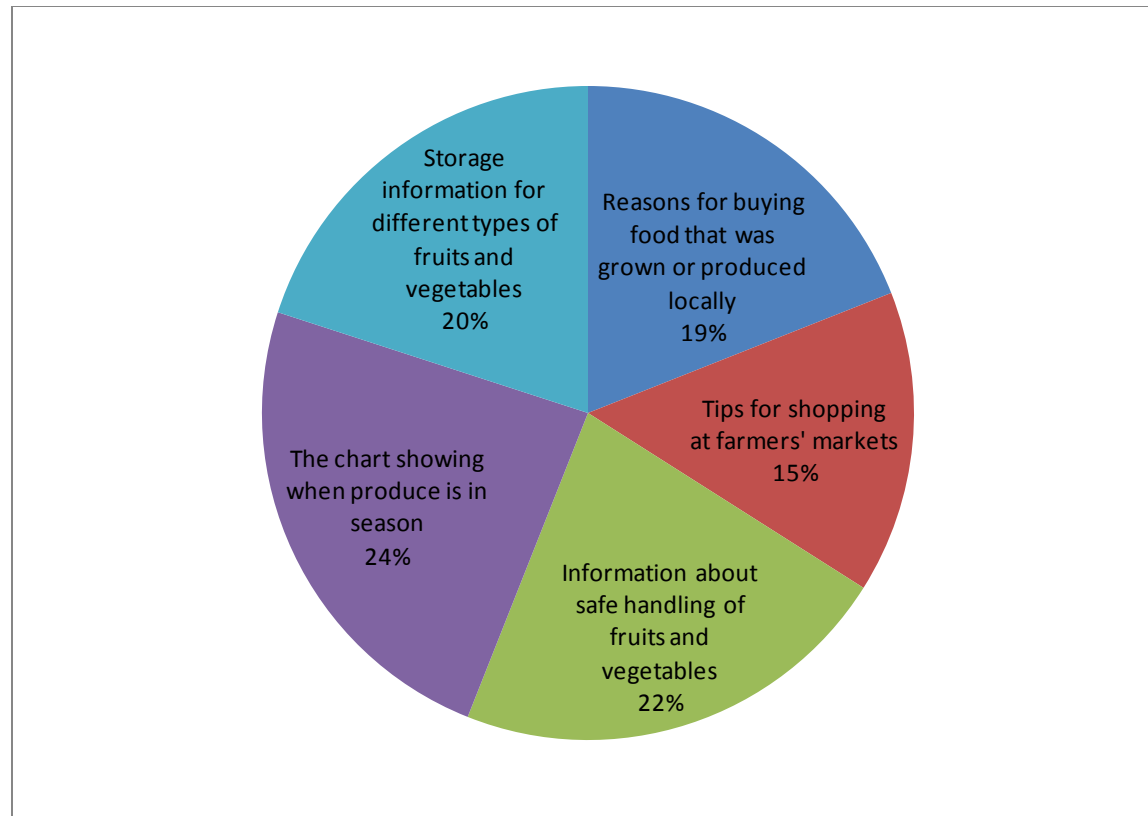
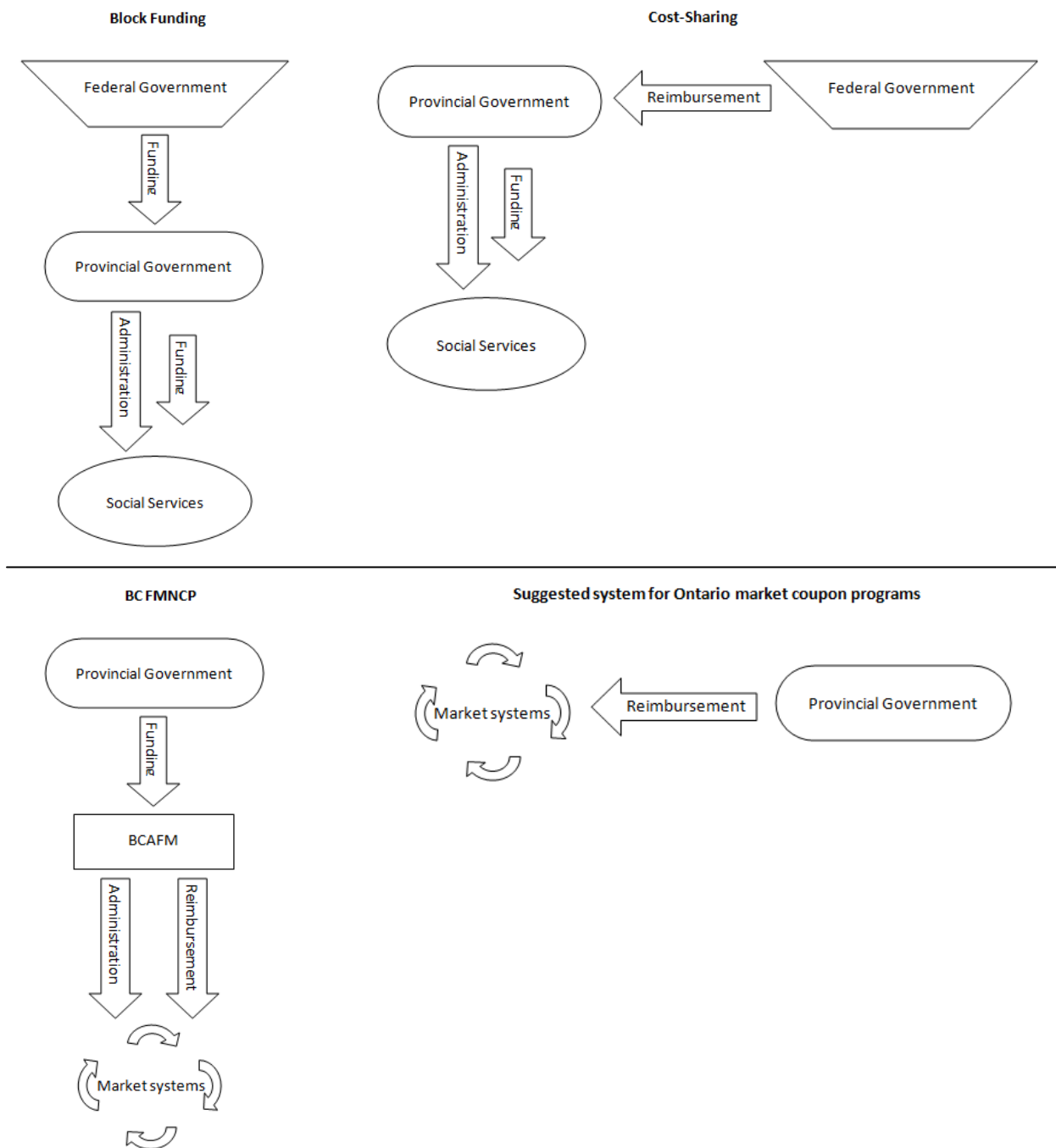


Figure 8. Nutrition education consumers thought was most useful. Reprinted from “Promoting Farmers’ Markets and Safe Handling of Fresh Produce to Low-Income and Hispanic Consumers,” by “M. Bunning, S. Yeh, and S. Hoffman, 2009, Unpublished manuscript, Colorado State University, Fort Collins, CO.

Appendix A

Canadian Social Assistance and Farmers' Market Coupon Programs Systems Models

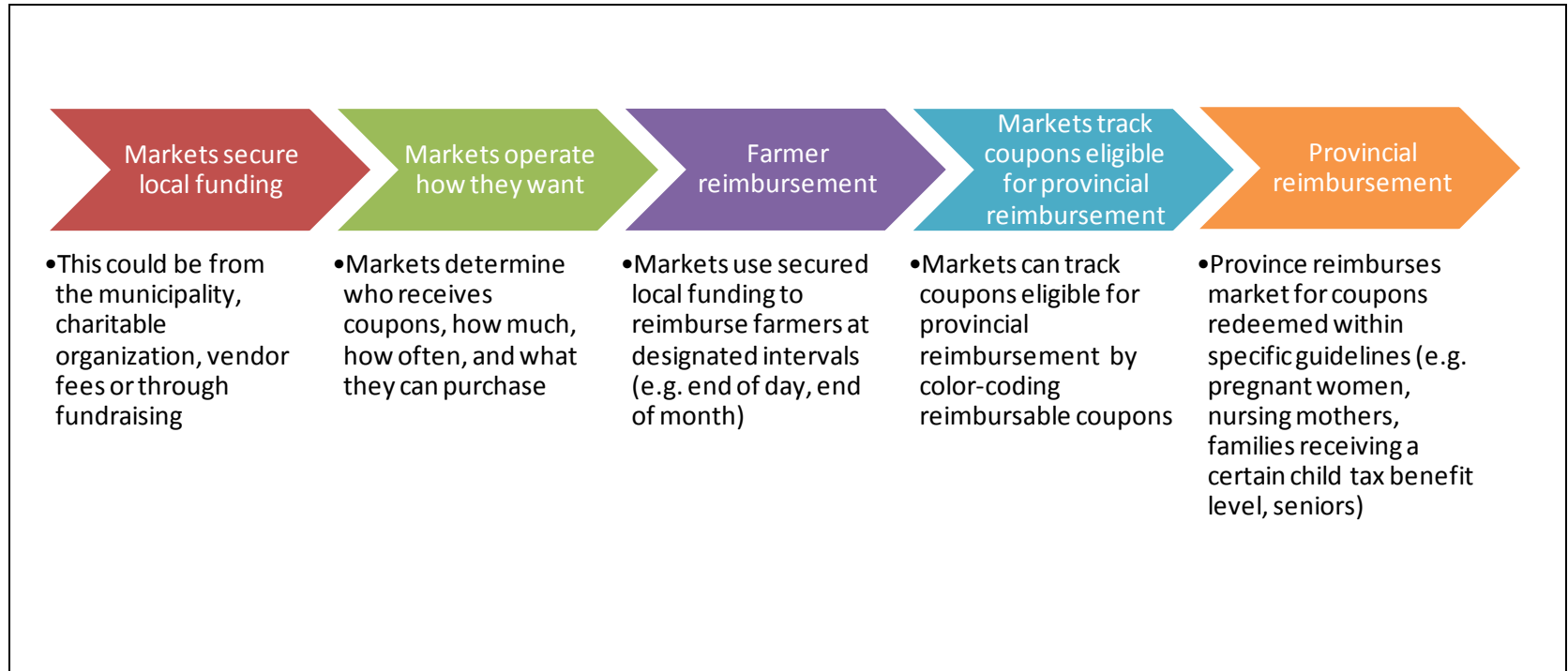


Comparison of the funding and administration systems of the BC FMNCP to the Canadian federal block funding social assistance system, and suggested system for Ontario farmers' market coupon programs to the Canadian federal cost-sharing social assistance system.

Note. Color-coded coupons can be used for efficient redemption in the provincial reimbursement system.

Appendix B

Proposed Canadian Farmers' Market Coupon System



Description of how a local market system could receive funding from the provincial government and still maintain its autonomy.

Appendix C

Six Ways to Improve Redemption Rates

6 WAYS TO IMPROVE REDEMPTION RATES OF FARMERS' MARKET VOUCHERS



Redemption rate is the most influential factor concerning the overall benefits of vouchers for Farmers' Market Nutrition Programs (FMNPs). If recipients do not use their coupons, they receive no benefit and participating farmers see no increase in sales.

Improving redemption rates may also be an important factor to ensure continued funding. Programs that appear underutilized will not receive the funding they need to help the families and farmers who rely on the program.

In the U.S. redemption rates vary by market, some as low as 45% and some as high as 98%.¹ Throughout the years and across the country, there appears to be no consistency when it comes to voucher redemption.

Some studies have implemented several different strategies to improve redemption rate, such as, reducing barriers, providing nutrition education, collaborating with local agencies, and making markets more attractive to consumers, which resulted in significant redemption rate increases.

This document provides suggestions that may help improve redemption rates at markets and thus increase the benefits of FMNPs to participants and farmers.

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3.	PROVIDE EDUCATIONAL MATERIALS	5
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1

REDUCE BARRIERS

Receiving money towards fruits and vegetables is good incentive for recipients to attend a farmers' market and bring home fresh produce; however, there are several barriers that often keep participants from redeeming their coupons. Market location is one of those barriers. If the market is relatively far away from a participant's residence, it may be difficult to find the time and means of transportation to get there. This is especially true if participants rely on public transportation, which is yet another barrier. The times in which the market operates can also be a barrier. If the times do not compliment work schedules or bus schedules, it may be difficult for participants to attend.

Those with convenient modes of transportation (do not rely on public transportation) are twice as likely to return to a farmers' market.²

Relocating a market is not an unreasonable solution to improve redemption rates. Markets which have relocated to more convenient locations and adjusted market hours for FMNP recipients witnessed improved redemption rates. Communities can also work with their transit systems in order to provide direct routes from low-income neighborhoods to market locations. Setting up shuttle buses from a central location to the market is also a way to address these barriers and make attending a market more convenient for consumers.

Some Senior Farmers' Market Nutrition Programs (SFMNP) have experimented with home delivery of market produce as a way to address logistical barriers, as well as the barrier of poor health. It was found that fruit and vegetable consumption was increased by 1.04 servings for those participating in the program.³

Other types of barriers that exist can be associated with shame. Disguising coupons is one way to alleviate embarrassment for some recipients, and thus improve redemption rate of vouchers. The Grimsby Farmer's Market in Ontario, randomly hands out free coupons to market consumers on the day of the market to conceal the identity of low-income voucher recipients.⁴

Working to reduce or eliminate common barriers can improve redemption rates and help voucher recipients receive the benefits intended by the program.³

2

PROVIDE MORE COUPONS AT ONE TIME

Receiving \$10 worth of coupons at one time may not be enough incentive for recipients to make a trip to market. Receiving more coupons at once would make a trip to the market more worthwhile (though coupons should still remain in small increments since some programs do not permit vendors to make change).

Having participants attend a class about storage, cooking, canning, or freezing of produce, would help ensure this option would not result extra produce going to waste.

For markets that allow purchases of dairy products and meat, which are significantly more expensive than fruits and vegetables, receiving more coupons at one time would aid in the purchase of these products. It would also create motivation to overcome any existing barriers to redeem coupons at markets that don't have restrictions on what can be purchased.

Grassroots initiatives can also help create an incentive to redeem vouchers. Programs such as Kentucky Double Dollars, Double Value Coupon Program, and Matching Dollars are farmers' market initiatives that offer to match between \$5 and \$20 on FMNP purchases, providing twice as many coupons and twice the incentive to redeem FMNP vouchers.



3

PROVIDE EDUCATIONAL MATERIALS

Some FMNP voucher recipients may not redeem their coupons because they don't recognize the value of fresh produce or its affect on health. Fruits and vegetable are often viewed as being more expensive than other foods, and produce at farmers' markets are thought to be more expensive than grocery stores.

Educational interventions have proved to change participants' attitudes and behaviors towards fruits and vegetables, helping them see the benefits of fresh produce. It also helps consumers become more familiar with actual quality and pricing of fruits and vegetables at markets.

Nevertheless, it is also important to provide information that participants are interested in knowing and in ways that motivate participants to redeem their coupons. Having an option between hands-on cooking classes, participating in community gardens, or attending a cooking demonstration is important to the mind-set of coupon recipients.

After attending a 45 min cooking demonstration, focused on simple, healthy recipes, 100% of 50 survey respondents said they would try to prepare the same meal at home. ⁵

Holding education sessions at the market, having vendors provide information about their crops and farming, and offering classes as part of a shuttle service to the market are all ways to introduce educational materials.

It is also important to address the delivery of the educational interventions. Teachers, instructors, trainers, and even those simply handing out educational information should "buy in" to the program and show enthusiasm about sharing nutritional information. If those delivering the educational information show interest in the subject, they can encourage participants' own appreciation for the information. This results in participants improving their nutritional knowledge and the desire to improve health through fruit and vegetable consumption. In the end, this creates motivation to attend a market and redeem vouchers.

To influence teacher enthusiasm, training is suggested. Training can increase teacher knowledge about the FMNP and increase motivation to use the educational resources made available to share with FMNP participants. An excellent way to provide adequate training is through the collaboration of local organizations that are in support of FMNPs. The sharing of information, resources, and best practices can produce the most efficient and desirable outcomes. Collaborating with local agencies is also another way to increase redemption rates.



4

COLLABORATE WITH LOCAL AGENCIES

The benefits of collaborating with local organizations are many. Partnering with community and rural development groups, health organizations, agriculture departments, public transit, schools, churches, and other local agencies provides opportunities that would not exist or be limited for a single FMNP agency or farmers' market.

Partnerships can provide opportunities for co-promotion, shared responsibilities, training for vendors, educators, and administration, dispersal of information, leveraging for financial support, and even the overall improvement of health for the community.

A farmers' market in Camden, New Jersey, arranged to have health screening checks done at the market each week. The market soon became a place for patrons to access fresh produce and look after their health and the health of their families. The blood pressure and diabetes screening became so popular that neighboring health organizations were added to waiting lists to share their health education, information, and screenings at four other nearby markets.⁶

When a group in Frontenac County, Ontario, realized redemption for their fruit and vegetable program was low because participants had difficulty preparing produce for meals with their current utensils, they partnered with Pampered Chef to obtain sharp knives for participants.



5

HIRE A FMNP MANAGER

In order to improve FMNPs redemption rates, it's beneficial to have a designated person to identify opportunities for improvements and lead the efforts. Any market, office, or government agency, at any level of involvement in the program (FMNP offices, Cooperative Extension offices, health agencies, agriculture agencies, farmers' market associations, or individual markets) can decide to hire a manager in order to increase the benefits of FMNP vouchers to low-income families and farmers through improved redemption rates.

Having a designated manager is also a good way to pursue relationships with local organizations, coordinate efforts between agencies, ensure the goals and messages are unified, and track the results of strategies implemented to improve coupon redemption.

Many farmers' markets have invested in a market manager to instigate efforts to improve market appeal to the community, increase sales, and add more patrons, which includes finding ways to boost FMNP voucher redemption to help achieve these goals. Having a paid manager substantially increased the income of market vendors, despite initial skepticism, and resulted in greater economic success for a number of markets.

Statewide managers have also been hired by Cooperative Extension offices to initiate and coordinate redemption rate improvement efforts, including the development of nutrition education resources, interagency collaboration, and administration of the distribution of resources. New York State's manager was an integral part of a project that successfully increased FMNP voucher redemption, participant fruit and vegetable intake, and market sales.⁷

At Ashe County Farmers Market in North Carolina vendors and community officials were initially resistant to hiring a manager. By the end of the season, vendors voted to give the manager a bonus to reflect their support and the additional income they received due to her organizational and marketing efforts.⁶

6

CREATE REPEAT CUSTOMERS

It is smart business to focus marketing efforts on repeat customers rather than spend the time, energy, and money it takes to attract new customers. Potential customers will also only be interested in marketing efforts if they have already decided to make a change to their normal routines and purchases.

FMNP voucher recipients are the perfect repeat customers because the coupons are of no cost to them. They essentially receive “free money” to use on fresh produce at farmers’ markets, and in most cases are provided with coupons more than once per season.

“Why spend so much money on mass advertising, when you can dedicate your resources to people you know will patronize the market?”⁶

FMNP participants who return to a farmer’s market show an increase in fruit and vegetable consumption, so turning FMNP voucher recipients into repeat customers is truly beneficial to the program.

However, if recipients don’t redeem their coupon, neither the recipient nor the farmer, benefits. Fortunately, there are several ways to entice FMNP coupon recipients to attend a farmers’ market and to keep them coming back.

Make markets more appealing

Turning a farmers’ market into a community gathering place is a great way to attract and maintain a core customer base. Adding cultural festivals and tours can increase the market’s visibility and transform it into a community center instead of just a place to buy locally farmed foods.

Markets focused on attracting more customers often work to socially diversify their space. They purposely seek to celebrate the different demographics of the community through music, shopping, food, and entertainment. Market organizers also try to

increase the variety of products sold at market to reflect what patrons want. Cooking demonstrations have also been used to share cultural-specific recipes.

The Toledo, Ohio, farmers' market incorporated these changes, as well as making a few structural changes like a shaded seating area, to create a repeat customer base. The result was increased market sales of \$100,000, the addition of six market days, four new vendors, and an increase of \$1000 in FMNP sales.⁶

Advertise FMNP at markets and participating vendor stalls

It makes sense that voucher recipients would be provided with information about which markets accept coupons, but there is much more information that participants want to know. Having simple, easy access to more information helps make the market experience enjoyable and leads to the potential of repeat customers.

FMNP participants have shown interest in receiving information about what each vendor is selling, their prices, which vendors accept coupons, and where the vendors are located at the markets. Some participants find it hard to determine what they can purchase due to coupon restrictions and where to locate vendors selling the products they want, especially when participating vendors are placed randomly throughout the markets.

Placing participating vendors close together and having program information available at the markets will help eliminate frustration and confusion. Markets can also work to get more vendors to participate in FMNPs and hire staff members to set up a stall at the market to answer questions and provide information about FMNP voucher programs. One market that infused these efforts had nearly a 100% redemption rate for SFMNP vouchers.

Information concerning FMNP vouchers can also be advertised and promoted at food pantries, libraries, rural post offices, and child and family services to encourage voucher recipients to redeem their coupons.

Provide coupons more often

If barriers like location and transportation have been eliminated or reduced, offering FMNP vouchers several times a season could be an impactful way of creating repeat customers. If \$21 worth of coupons is offered once per season (\$21 was the average amount of FMNP coupons offered in the U.S. 2012 season⁸), a participant may not find the trip to market worthwhile or find any existing barriers too inconvenient to redeem the coupons.

Receiving coupons on several different occasions will give recipients the opportunity to visit the market and become familiar with the experience. If participants enjoy the market experience and learn about the benefits of fruits and vegetables, they are likely to redeem future vouchers. This may result in coupon recipients returning to the market to use their own money to purchase fresh produce.

Several studies have found that many of their FMNP participants have spent their own money or food stamps at markets in addition to their vouchers. Having FMNP recipients become repeat customers can improve fruit and vegetable intake for participants and create additional revenue for farmers and the community in general.

Many markets across the U.S. have been successful at improving redemption rates and should be used as models for markets or agencies trying to improve their nutrition programs and redemption rates. Improving redemption rates of farmers' market vouchers is a good way to ensure the intended benefits of FMNPs are reaching low-income families and farmers. Achieving high redemption rates also proves the effectiveness of the program and can help to secure future program funding.



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