

**Understanding the Role and Contributions of the Incubator Farm Program in
Creating the Next Generation of Farmers in the United States and Canada**

by

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ABSTRACT

UNDERSTANDING THE ROLE AND CONTRIBUTIONS OF THE INCUBATOR FARM PROGRAM IN CREATING THE NEXT GENERATION OF FARMERS IN THE UNITED STATES AND CANADA

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The farming sectors in the United States and Canada has seen a steady decline in the number of farmers since the end of World War II. However, this issue did not gain widespread attention until the early 2000s when the farmer population hit a low of 2% of the total population in both countries. Recognition of this phenomenon led to initiatives to address farmer succession and renewal. Incubator farm programs – defined as land-based farmer training and support programs – are one such type of initiative that specifically focuses on developing entry pathways for people from outside the farm sector. The goal of this study is to critically assess incubator farm programs (IFPs) as a new farmer support strategy that helps overcome structural barriers and enhances the agency of new farmers. This dissertation examines the incubator farm as a place-based entity influenced by the surrounding environment and explores its contribution to the farm succession landscape. In doing this, I use a number of approaches and methods. First, a quantitative survey (n=63) provides a high-level view of the programmatic space, including the population it serves and seeks to reach, the geographical settings of primary activity where opportunity and demand have met, and how the services provided empower beginning farmers. I then used a Sustainable Livelihoods Approach to tease out the assets that beginning farmers need to possess to be successful and analyzed (n=5) case studies to understand how IFPs helped build these assets and further empower beginning farmers. Finally, a single in-depth case study utilizes participant observation methods to unpack the relationship of an IFP to its locale. In undertaking this dissertation, I was able to better understand the inner nature of IFPs, a space that I have been connected with over the last 12 years. I unpacked the support and services provided and how IFPs contributed to building the capabilities of new farmers. By analyzing an IFP as a pragmatic place-based initiative I was able to delve deeper into the dynamics of IFPs and their locale. This dissertation also

contributes to a better grasp of the IFP as a non-traditional entry pathway into farming, and its contributions to creating a new generation of farmers.

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1. Introduction

1.1 Background and Context

The ever-increasing age of farmers is a growing concern in Canada and the United States and is predicted to have an adverse impact on farming. In the United States, 400 million acres of farm land is predicted to be transferred within the next 20 years (Bigelow, Borchers, & Hubbs, 2016; The Agrarian Trust, n.d.), while in Canada farmland loss is a critical issue (Francis et al., 2012). In North America's two most industrialized economies, the number of people actively engaged in farming is at an all-time low. According to the latest Statistics Canada (2016) census data, only 1.7% of the total population of the country are farmers. The number of farmers in Canada declined and their age continue to rise, but for the first time since 2019 there is a slight increase in those below 35 years (Statistics Canada, 2016). In other words, the farmer population is not only decreasing as a percentage of the total population but is also ageing. Furthermore, only 1 in 12 farm operators reported having succession plans that will help them transfer the farm to the next generation (Statistics Canada, 2016). The trend is similar in the United States, with data showing that the average age of farmers is 58 years, and according to the American Farmland Trust "an across-the-board drop in farms, farmers, and farmland (Dempsey, 2019; USDA, 2019).

The declining farmer population is not a new phenomenon (Gale, 2003), and there is a sizable body of literature that deals with changes in agricultural regions and rural communities. The various factors that have contributed to the loss of farmers include volatile input costs and commodity prices (including land costs), rural-urban migration, consolidation of farms and the corresponding loss of many family-based farming enterprises (Carlisle et al., 2019; Ikerd, 2008; B. W. Ilbery, 1998; Sim, 1988; Strange, 1988; Winson, 1995). This phenomenon is not confined

to the United States and Canada; many other parts of the world are experiencing a similar trend in declining farmer populations, most particularly across developed economies (Pingali, 1997; Vorley, Pozo-vergnes, & Barnett, 2012). In North America (Canada/United States) this trend is at historical and worryingly low levels. Given the current situation and evident trends, the challenge of identifying and transitioning a new generation of farmers is more than just an aspirational goal, it is an agri-food sector imperative—one that has, to date, received scant attention among researchers and policy makers.

To some extent, it can be argued that the impact of ageing and farmer departures through retirement has been masked somewhat by the decline in farm (and farmer) numbers associated with the structural evolution of the farm sector through the processes of farm enlargement, consolidation and corporate alignment (David, 2011). In Canada and the United States, mechanisation and new technology has not only increased production but also enabled farmers to cultivate larger areas leading to significant increases in farm size through consolidation (neighbours buying out neighbours) and the consequent departure of many farmers from the system. This so-called industrialization process, also coined as the ‘productivist’ phase (Ilbery and Bowler, 1998), is associated with a litany of impacts in agriculture in the realms of farm economy, rural society or community and the environment; for the purpose of this dissertation the most notable is the continual thinning out of the human element of the farm system—the farmer. Indeed, since the 1980s, serious concerns have been raised by academics and popular authors about the myriad impacts of productivist agriculture (Patel, 2007; Schlosser, 2001; Strange, 1988; Winson, 1995). On the economic front, questions have been raised around the efficacy of large scale industrial farms in terms of per unit of production and the impacts of over production on prices and returns (Ikerd, 2008; Strange, 1988). On the social side, this type of farming has led (in many

but not all cases) to an erosion of the social and economic fabric of regions and communities through a reduction in both the number of farms and a decline in the dominance of the ‘family farm’ as a mode of production. Such changes have had significant and damaging knock-on effects in the form of changes in the economic viability of rural communities and the loss of critical social infrastructure (schools, hospitals, elder care) because of depopulation and the shrinkage of municipalities (Ikerd, 2008; Johnsen, 2004; Strange, 1988; Winson, 1995). The above is not meant to imply a complete absence of opportunity in agriculture. Indeed, demand for food, both locally and globally, continues to rise; what is in question is the means by which, and by whom, it will be produced. There is a growing demand for a skilled workforce in agriculture, and according to a recent Ontario Agriculture College report (2017), there are four jobs for every agriculture graduate that enters the sector. The report does not indicate if farm managers and operators are part of this survey, but the existence of this demand and gap bodes well for farming. This message is further reinforced by the Royal Bank of Canada “Farmer 4.0” report released in 2019 (RBC, 2019). There is a growing concern, however, over the historically low levels of the farmer population in terms of the shrinking human resources and knowledge base for agriculture. The impact of this small population on farming systems of the future is unknown at this point, but as the older generation of farmers exits from the sector, many decades of experiential knowledge of the local soils, climate and agroecosystems are in danger of being lost.

While the question of whether we need more farmers is debatable, the need for a new generation of farmers is not. Farmers, as primary producers, form the backbone of a food system. While the number of farmers may vary depending on the scale of agriculture, with large-scale mechanised farming requiring fewer farmers and small-scale family farms requiring more, they are still required. Current agricultural policies that focus on increased production and vertical

integration of the food supply chain have favored large-scale corporately managed farms rather than small-scale family run farms—a situation that has hastened the departure of many people from farming and kept others from entering. There is also growing recognition that technology will be essential in shaping how future farmers think and work as drones, robots and all types of sensors are poised to enter the industry and substantially change traditional farming methods (RBC, 2019). The new farmer is one who must be market and tech savvy and resilient to face a new climate reality, and someone who will define the future of food and farming systems.

Beyond documenting the changing demographics of the farm sector, it is important to recognize the dynamics and procedural context of farm enterprise transfer from retiring/departing to emerging farmers. Traditionally, in both Canada and the United States (and indeed most market economies), intergenerational farm transfers were the norm with children taking over the farm enterprises from their parents. While intergenerational farm transfers continue, this longstanding form of farm succession is on the decline (Pouliot, 2011); the concentration of land owned by fewer, older people is an indicator of this trend (Goeller, 2102). Indeed, evidence now suggests that it can no longer be assumed the farm population will simply replace itself through within-family (or even within community) intergenerational succession. Instead, it is more probable, even certain, that family-based farm succession will be, and will need to be, augmented by the entrance of people into agriculture from a wider segment of society, and with little or no connection to the existing agriculture sector. Furthermore, a cursory scan of the new farmer spectrum suggests that the face of future farmers will be very different from the current farm cohort in Canada and the U.S, which is primarily of European descent and male dominated. Initial observation of new farmer support programs and new farmer cohorts indicates that there are more women among the present crop of new farmers than men (Ngo & Brklacich, 2013; Statistics Canada, 2016). Similarly, they

are also ethnically diverse: while those of European descent still dominate numerically in many regions, others from Asia, Africa and Latin America are beginning to enter the sector with many more possessing a desire to do so. The strategies and pathways that these new farmers take to enter the agriculture sector are different from the traditional succession models, but very little knowledge exists about them. As the demographic composition of farmers changes, and the ‘old guard’ gives way to what will be a very different ‘new’ guard, it will become necessary to consider the deeper question of how this will impact farming and rural spaces now and well into the future. Questions around the transition between an ethnically homogenous older generation of farmers and a new generation that is more eclectic in terms of ethnicity, gender, life stage, ideology, knowledge and experience, farming aspirations and food system orientation, and socio-economic status abound and will need to be understood and addressed.

Clearly, the farm community and related institutions need to engage with other cohorts from outside farm families and the traditional ethnic groups to fill this growing gap. According to Ilbery et al. (2012):

Non-successional schemes that enable new blood to enter any industry are important to improve and fill skills shortages, encourage entrepreneurship and new ideas, improve resilience and adaptability, and, in the case of farming, to help reduce an aging working population. (pg. 125)

There is potential for young people from urban areas and new immigrants to fill this gap. The lack of proper pathways and related support networks, however, proves to be a barrier preventing their entry into the farm sector (Hilts, Smith, & Watkins, 2008). Pathways in this context encompass both the physical road map new farmers take and the factors that influence that pathway. Political and institutional factors are an important part of these pathways and as Leach et al. (2007) point

out, “Governance is central to such pathways, and where they lead” (pg. 39). Agriculture is a complex system and change in that system involves many actors and stakeholders and according to Leach et al. (2007) “static models of organization, authority and expertise, are fundamentally unsuited to analyzing institutional and political processes in and around complex systems as they are actually unfolding today” (pg. 39). As a new farmer navigates their pathway into farming, they are impacted by numerous political, economic, environmental, and social factors that either pose a challenge or present an opportunity. Their farm, and everything they do on it, is influenced by policies and protocols made in the halls of government. The enterprise development pathways approach, which according to Scoones (2016), “is inevitably a normative struggle, rooted in political and moral choices” (pg. 309) is not the guiding lens of this study but resonates throughout.

Civil society organizations and initiatives that support new farmers to enter the agricultural sector and establish resilient farm businesses are also on the rise in Canada and the United States. There are currently over 25 organizations that have been established in the last 10 years. Prior to this there were only two organizations serving new farmers: Intervale (established in 1988) in Burlington, Vermont and the Agriculture and Land Based Training Association (ALBA, established in 1972) in Salinas, California (Ewert, 2012). Many of these initiatives are land based (incubator farms) and/or provide training and mentorship for new farmers. They generally adopt a hands off and experiential approach to imparting knowledge to the participant farmers (Niewolny & Lillard, 2010). As the movement to support non-traditional forms of farm succession grows there is a need to evaluate the various programs and initiatives in this area. It is also necessary to critically analyze the effectiveness and impact of new farmer support strategies in relation to demographic and socio-economic factors. This process of evaluation will also help in understanding the outcomes of these programs and their eventual contributions to helping establish

a new generation of farmers.

Reviving the farmer population involves many steps that include training, awareness, encouragement, support, mentorship and financial assistance. Additionally, new farmers need to be aware of new technologies like drones, planting/weeding robots and Big Data that are poised to enter and change farming systems dramatically (Grassi & Schrimpf, 2017; RBC, 2019b). Initiatives supporting new farmers strive to establish pathways that will facilitate the entry of new farmers into the agricultural sector. This research intends to improve our understanding of some of these pathways and networks that assist new farmers. This research also assesses the eventual impact of these pathways in growing a new generation of farmers and how that impact facilitates and encourages new farmers to establish resilient farm enterprises

1.2 Research Opportunity and Purpose: The emergence of incubator farms to overcome barriers and enable new entrants into the sector.

The issue of an ageing and declining farmer population, and opportunities presented by changing systems, both of which are elaborated in the background section of this thesis, are central to this study. The decades' long consolidation of farms, and the vertical integration of food value chains, contributed to the slow demise of family farms that were once the engines of the farm sector and kept rural North America vibrant (Boomershine, 2016; Ikerd, 2008; Strange, 1988). This was accompanied by the steady exit of the younger generation from the farm and with it the breakdown of the traditional inter-generational farm succession. These factors have, to a large extent, contributed to the decline in the farmer population. Hence, farm succession, and the need for the next generation of farmers, is becoming an important question in the farm sector. But the next generation of farmers faces many challenges, some existing ones like high price of land and low cost of farm produce, and other new ones like access to viable markets, support from financial sectors, and lack of experiential knowledge. Multiple public and private actors are supporting farm

sector renewal by helping new farmers to not only surmount the challenges but also take advantage of new opportunities in the sector. The conceptual framework section tries to highlight these challenges and opportunities and helps to link to theoretical concepts and methods that exist in the scholarly literature. The theoretical concepts serve as an intellectual backdrop to examine the purpose and effectiveness of the initiatives designed to help and facilitate the entry of new farmers.

Organizations that support new farmers have grown rapidly across the United States and Canada (for example: Intervale, Glynwood, Cultivating Community). Most of these new farmer support strategies are built around a land-based model called incubator farms. They primarily aim to remove the barriers, mostly structural, that confront new farmers as they try to establish farm enterprises. Access to land and start-up capital are two major challenges that new farmers face when trying to enter farming; incubator farm programs help to overcome these initial barriers. Incubator farms also provide training, mentorship, and marketing support. These factors influence not only the decision to engage in farm start-up initiation but also the nature and effectiveness of that engagement. These initiatives are now at a stage where the outcomes need to be assessed and measured. In addition, an examination of the participant demographics may provide some speculative insights into the effect such programs may have on diversity of composition of the future farm sector in terms of age, gender and ethno-cultural diversity. This assessment helps to identify the pathways, networks, and channels that are effective in growing a new generation of farmers and to inform policy and governance institutions of the need to support this work.

The main purpose of the incubator farm is to provide the physical resources, marketing support, and mentor networks that new farmers need at the start-up stage, while training programs fulfill the knowledge needs. The goal of this thesis, regarding incubator farms, will be to evaluate the services that the incubator farms provide, such as access to land, equipment, mentorship,

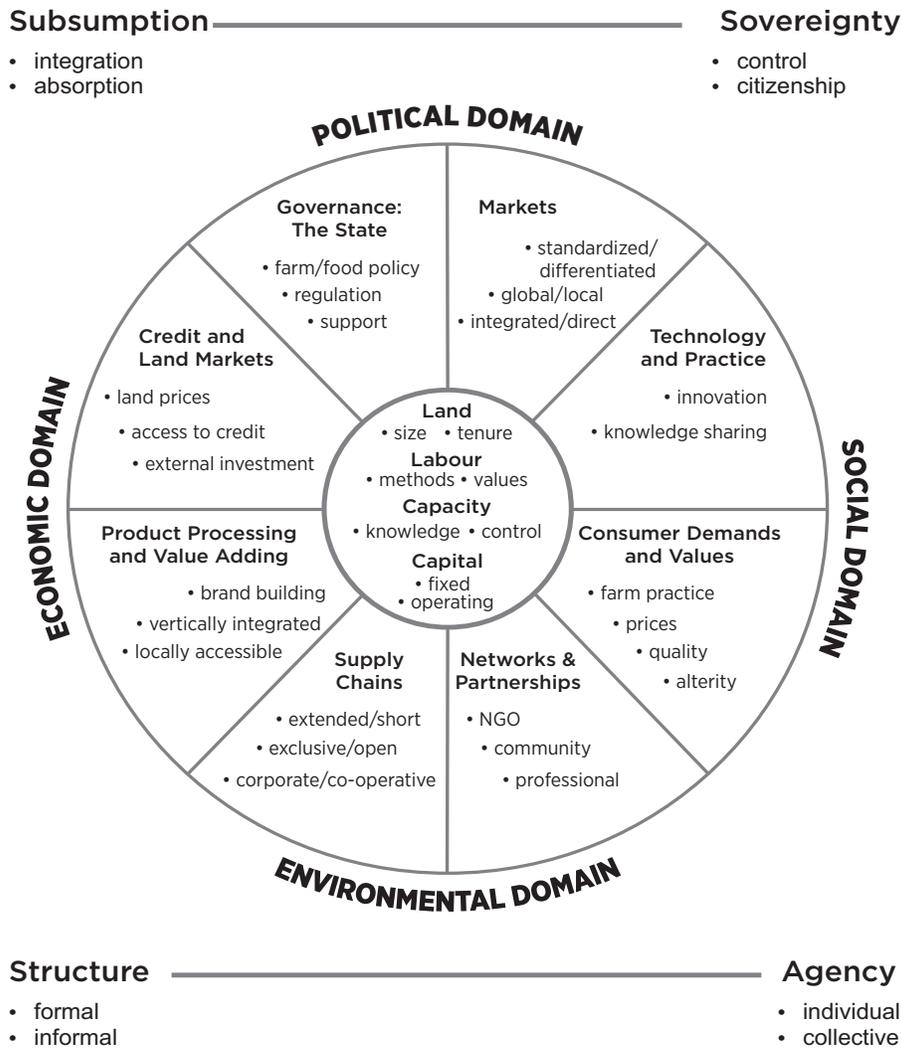
marketing, and network building. The geographical scope of this research is limited to Canada and the United States.

The growth of incubator farms in Canada and the United States is a welcome trend, but currently very little research exists in assessing the outcomes of these programs and their effectiveness in engaging with new farmers and removing barriers faced by new farmers. The contributions and the roles they play in reviving the farmer population have not been explored systematically. The studies that have been conducted around incubator farms have primarily focused on their structure or contribution to local food systems in terms of access to food (Berman, 2011; Ewert, 2012). There are very few studies on incubator farm programs that have focused on evaluating the outcomes of their programs and services. Hence, this research concentrates on assessing incubator farm programs and services. The sample frame will be drawn from all incubator farms that are part of the National Incubator Farm Training Initiative (NESFP, 2016; NIFTI, 2012) based in the United States, which also includes all currently existing incubator farms in Canada.

1.3 Conceptual Frameworks

The trends and issues that influence the farm sector are presented in the model developed and illustrated in Figure 1.1 below. All farmers, new and old, confront numerous farm-related realities that exist in the social, political, environmental, and political realms of any given locale.

Figure 1.1: Factors Affecting the Farm Sector



The outer circle in Figure 1.1 encompasses influences and trends at a broader level that impact the core (farm), and as the figure indicates, these trends span a wide spectrum of topics and concepts. The trends broadly fall under political, environmental, economic, and social domains. I touch upon many of these issues and how they pertain to new farmers in the preceding pages of this section. The circles are symbolic of the constant tension or pull and push between these various

factors and domains. The economic aspects of farming dominated the sector for many decades, but now environmental concerns have a profound influence. Financial institutions and agricultural policy contributed to a system that was geared towards high intensity production serving global markets that is now experiencing substantial pushback mainly from consumers. Similarly, the political/governance structures encouraged large scale mass production for global markets. These systemic issues form a complex web around farming and do not exist in binaries nor are the relationships between them linear or unidirectional. A close examination of the factors in Figure 1.1 reveals that, at a fundamental level the farm sector vacillates between structure and agency. When structure dominates, agency is absorbed or subsumed as in the large-scale conventional farming systems where agency at the individual level has a minor role if any role at all. When agency is dominant, farming systems tend to be more collective and focused on the individual (family farms) and people, rather than structures that exert control and define the food systems and food sovereignty (Desmarais, 2008; Hamilton, 2011; Hassanein, 2003). Similarly, the food system moves between subsumption and sovereignty. When the food systems focus on economic returns and per acre profits dominate, food systems are subsumed by economic structures and forces that dominate the landscape, for example globalization. In contrast, when food systems are community based and people rather than structural forces exert control, for example local food systems, they become sovereign.

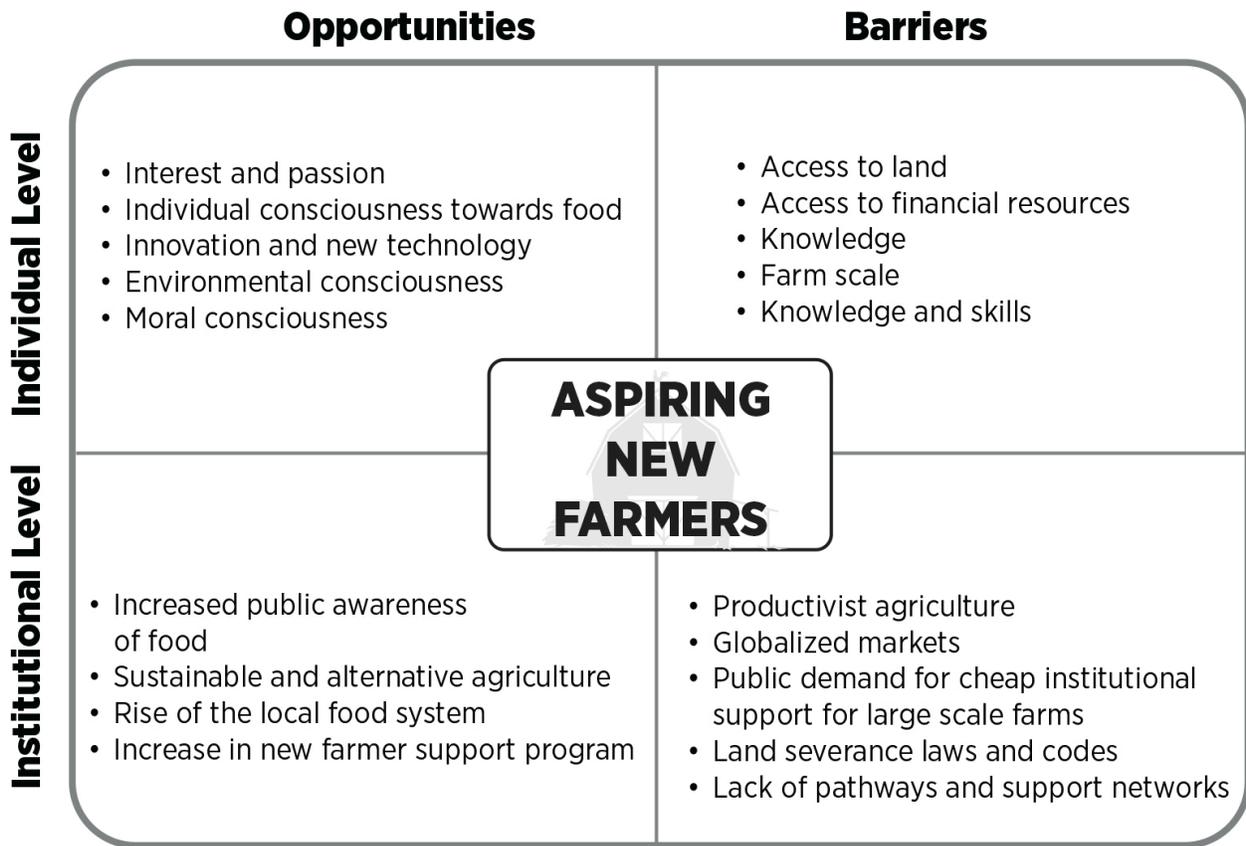
The center circle in Figure 1. 1 represents the factors that a farmer confronts on an almost daily basis. For example, for an existing farmer the extent of land farmed will be an important factor, whereas for new farmers access and tenure is an important challenge (Ruhf, 2013). Some of these factors are also locale or region specific: labour is an issue in vegetable growing regions like California (Olmstead & Rhode, 2017) while it is not that important in regions growing

commodity crops (wheat, soybean, corn). On the capacity and capital front, the current generation have ready access to knowledge through research and extension networks which are primarily geared to the kind of farming systems they adopt, and the same is the case for capital. Conversely, new farmers, especially those from outside the farm sector, have to find alternate ways of gaining farming knowledge (Laforge & McLachlan, 2018), and the doors of the traditional farm lending institutions are all but shut to them.

It is into this milieu that a new farmer enters with hopes and aspirations of challenging the current structurally dominated food systems, and hoping to contribute to an environmentally and socially just food system (Renting, Schermer, & Rossi, 2012). These new farmers must navigate existing structures and systems, and while these structures pose challenges, they also present opportunities as it moves towards sustainability. Urban agriculture, local food, and direct marketing are expressions of these changes and present opportunities for innovative new farmers to take advantage of (Milone & Ventura, 2019). The next section draws from the concepts presented in Figure 1.1 and frames the challenges, barriers, and opportunities that new farmers face.

In this section, I focus on new farmers and the barriers and opportunities they face as they enter and navigate the farming space. The process of entering farming takes place predominantly at an individual and personal level but is also influenced by factors at the broader societal and institutional levels. Figure 1.2 highlights some of the main factors, either barriers or opportunities, that a new farmer faces in his/her pathway into agriculture.

Figure 1.2: Barriers and Opportunities Faced by an Aspiring Farmer



At the societal level, the concepts of sustainable agriculture and local food are gaining importance, and providing opportunities for new farmers (Laforge & Levkoe, 2018), while institutional encouragement of large-scale farms linked to global markets inhibits many aspiring new farmers. Similarly, at the individual level, anecdotal examples indicate that an increasing number of passionate people are taking their first steps into farming but have difficulty in accessing suitable parcels of land and start-up capital, which are significant barriers (Carlisle et al., 2019). This study draws on a conceptual framework that places the farm, and its traditional human, economic and resource-based elements, within a wider framework depicting the myriad forces that feature in creating different trajectories of farm and food system development—some more

dominant than others (economic and political realms in Figure 1.1). In reference to both the farm sector at large, and the potential space for new farmer development, actors within these spheres influence and create both favourable avenues and impediments to the success of those aspiring to be part of the wider farm sector. In the present research, there is a strong interest to analyze the enabling and inhibiting factors and to inform future policy initiatives that will help to grow a new generation of farmers.

As Figure 1.2 indicates, the factors that enable or inhibit aspiring new farmers broadly fall under individual (agency) and institutional (structural) categories. Hence, it is pertinent here to examine the role that agency (individual and collective) and existing structures play in a new farmer's journey into farming. Human agency is central to any transformative process, and this is true in the case of farming systems. Agency has individually and collectively played a key role in agriculture and is critical in farming system's shift from a productivist regime to an alternative and locally based food system. Walker, Holling, Carpenter, & Kinzig (2004), in writing about the adaptability of social-ecological systems (SES), point out that "although the system as a whole self-organizes without intent, the capacities and intent of the human actors strongly influence the resilience and the trajectory of the SES" (pg. 7). The passion and commitment that new farmers display is symptomatic of this intent.

Further, if we consider new farmers as the drivers of the shift to an alternative/sustainable farming system then every single member of this diverse group is bound to exert his/her agency on the transformation. In as much as the movement needs champions or leaders it is these individual actors, along with other stakeholders, and their collective agency that will contribute to the shift to a sustainable farming system. According to Westley et al. (2013), "within complex problem domains, however, strategic agency is typically not associated with just one individual,

rather is produced through the strategies of a number of actors” (pg. 2). The diverse group of actors in this case includes local governments, NGOs, universities, and state/provincial and federal agriculture departments, and other regional stakeholders with interests or connections to the farming sector. These actors all individually and collaboratively contribute to manage and, if necessary, change the farming and food systems domain, and these efforts are termed “institutional entrepreneurship” (Westley et al., 2013). Wahid & Sein (2013) state that “Institutional entrepreneurs affect the institutionalization process internally. They do so by using strategies to mobilize resources and to gain support from other institutional members to their course of action” (pg. 80). The opportunities listed in Figure 1.2 (by no means an exhaustive list), are the result of individual agency of new farmers and the collective power of organizations and consumers, both of whom work for and in the alternative and sustainable farming movement. The movement towards what some define as “sustainable agriculture” is creating both formal and informal networks and spaces that play a substantial role in enabling and encouraging new farmers (D’Aliesio, 2012; Laforge & McLachlan, 2018)

On the other hand, the barriers and challenges new farmers face at the individual and institutional level are structural in nature and are the result of farm sectors’ transformation from locally and regionally focused to a global system. This change is well documented in academic and non-academic literature (Patel, 2007; Strange, 1988; Weis, 2007; Winson, 1995), and is highlighted in the introduction section of this chapter. This transformation linked farmers to a global supply chain over which individual farmers and farms exerted little agency and power. Initially, farmers must certainly have played a role in this process even though it is currently institutional actors who wield tremendous power and control across the spectrum (Berry, 1996; E. Fraser et al., 2016; Lobao & Meyer, 2001). Some of the barriers—like cost of farm land and low

farm produce prices—are influenced by factors and actors from outside of the farm sector (Ruhf, 2013). The rapid expansion of cities and subsequent growth of suburbia not only annexed valuable farmland but also raised the price of land beyond the reach of many new farmers. Farmland prices in the US have seen a 1,600% rise since the farm crisis of the 1980s (Naomi, 2018, pg. 1). This also led to the slow demise of the midscale family farms that were and are vital to the health and well-being of rural communities. According to Krischemann, Stevenson, Buttel, Lyson, & Duffy (2008) “Changes in the structure of agriculture that helped to bring about the disappearance of the middle have been occurring for some time” (pg. 5). Further, these authors state that if this trend continues “the public good that these farms have supplied in the form of land stewardship and community social capital will disappear with them (pg. 5). While many new farms are unlikely to start their journey at the mid-scale level, it seems clear that the production and land stewardship knowledge, and social capital that these farms and farmers will acquire, are important for future food systems.

Apart from access to, and cost of, land, the other major systemic or structural impediment to farmers’ ability to exercise control or ‘agency’ is consolidation of the food and agricultural commodity supply chain. The food system supply chain is increasingly consolidated from seed to fork. Even established large-scale farmers are worried about mergers of the major actors in the value chain and think it has little benefit to them (Lownsborough, 2017; Stucke & Grunes, 2018). This consolidation further polarizes farming into the large scale and the small to micro scale (Krischemann et al., 2008), and allows little scope for new farmers to grow beyond the small to micro scale. The dominant globalized food systems and related agricultural policies present significant challenges for new farmers as these structures are largely designed to serve the existing/established farm sector. This does not mean that all hope is lost for new farmers. There

are initiatives that have emerged out of the alternative/local food systems like food hubs, regulated farmers markets, purchase of local food by large institutions (hospitals, universities) to name a few, which are creating more ‘small farmer friendly’ enabling structures even though they are fewer in number and more modest in comparison (Borst, 2010).

New farmers, when they take their first tangible steps into farming, translate their dreams and aspirations into reality. This might take the form of buying land, enrolling in a training or incubator program, or becoming an apprentice on an established farm. Individuals play a substantial role in this process and continue to do so in their initial start-up stages. Structural factors both provide opportunities and pose challenges, though at this juncture they mostly present challenges, aspects like cost of and access to land, access to markets, and low cost of farm products are structural factors that are societal in nature. Government and private institutions, consumers and even farmers themselves have contributed to the creation and nurturing of these structural factors. Apart from the above, data driven technologies are increasingly relevant in this space, and are poised to bring new types of innovation into agriculture. Sensors and field level data are set to take agriculture to a different level across the world (Cox, 2002; Niu, Fratta, & Wang, 2002). Anecdotal evidence indicates that many new farmers are poised to take advantage of this technological innovation space in farming when compared to the existing generation, but it still means learning new skills and techniques. According to a report by RBC (2019), “technology promises to open agriculture opportunities to non-traditional sources of talent” (pg. 230). Digital technology in agriculture is forecast to change farming and move it into a new era where even the traditional spaces are not immune to technological advances” (Kull, 2019). The new farmer training movement can act as a pipeline to develop and foster knowledge and skills in this are

Incubator Farm Programs (IFPs), to a certain extent, by engaging with a diverse range of participants, are structurally well placed to fulfill this role.

Individual and institutional factors, along with the influence of an alternative food system, are an integral part of this dissertation as it tries to understand why, against seemingly unsurmountable odds, people, young and old, take up farming as a vocation. This dissertation will draw from bodies of literature in the structure and agency areas to unpack the opportunities and challenges that new farmers confront in their journey, and how they build their capacity to either take advantage of opportunities or solve challenges.

1.4 Research Goal and Objectives

The goal of this research is to critically assess IFPs as a new farmer support strategy by focusing on the way in which IFPs attempt to overcome structural barriers and enhance the agency of new farmers. In particular, I do this with an eye for better understanding how the next generation of farmer—who is likely to be much more demographically diverse—may have different experiences with how IFPs operate. To meet the above goal this research will have the following specific objectives:

Objectives

Objective 1. To conduct a systematic analysis of IFPs, present in Canada and the United States and to characterize them according to the strategies they use to engage with new farmers. This is done through a survey of IFPs (n=63) and allows me to reflect on the extent to which the incubator farm model is present and offering services that could empower would-be farmers to overcome structural barriers in different regions and for different demographic groups.

Objective 2. Identify, analyze, and account for the factors that are effective at building the

capability (e.g. agency) of beginning farmers and help them to establish their own farms. This is done through the analysis of selected IFPs (N=5) and is conducted by adopting an assets-based approach that draws on the Sustainable Livelihoods framework. The assets-based analysis helps me to uncover the capacities and capabilities that contribute to building the skills, confidence and capabilities of new farmers.

Objective 3. Adopting a more detailed and place-based approach, conduct a single in-depth analysis of one IFP to gain a deeper understanding of the “beginning farmer pathways” that this exemplar organization enables in the local context, and reflect on how this particular IFP allows aspiring new farmers to navigate the critical early stages of becoming financially viable. In carrying out an in-depth analysis of one IFP, I unpack the place-based nature of IFPs and how location influences programmatic space.

1.5 Contributions Made by This Thesis

Academically, the goal of this thesis is to make several distinct contributions to the rural development and farming systems literature. First, this thesis makes a much-needed empirical contribution in that there are very few data-based research studies that evaluate strategies that support new farmers, especially IFPs, and their contribution to creating a new generation of farmers and as new models of farm succession. Second, this thesis contributes to the emerging Sustainable/Alternative Farming Systems (Food Future, 2020; Hamilton, 2011b; Schipanski et al., 2016) Local Food Systems literature by explicitly bringing an Agency/Structure perspective on how new farmers may be helped to become established. Third, in exploring the structural factors that inhibit new farmers this thesis builds on the work established by authors such as Krischemann et al. (2008) who explored the decline of the family farm. In contrast to

Krischemann's work, however, this thesis is designed to explore and articulate potential opportunities that can help overcome issues of farm succession. This is different than the existing literature that typically focuses on what are sometimes called "spirals of decline" (Altieri, 2002; Krischemann et al., 2008; Weis, 2007). This study contributes to an understanding of how interventions made by IFPs can enhance the agency of individual actors and help – in some cases – to allow them to overcome some of the structural barriers that scholars like Ruhf (2013), Weis (2007) and Naomi, (2018) have outlined. Finally, in combining qualitative and quantitative methods and approaches this study contributes to the emerging and evolving body of mixed methods research literature as outlined by Tashakkori & Creswell (2007).

In addition to these scholarly contributions, this study has resulted in multiple applied and pragmatic insights that are hopefully useful to practitioners and are fully described in Chapter 5. The results of this dissertation will help existing IFPs and organizations that are in the process of establishing new farmer support programs, and/or inform additional support programs to address existing barriers. Identifying what works and what does not at an early stage is crucial for IFPs.

1.6 Dissertation Structure

This dissertation emerged out of a need to better understand the dynamics and inner workings of the beginning farmer movement and IFPs in particular in the US and Canada. This dissertation consists of three chapters, each of which link to the three main objectives and are anticipated to be published as peer-reviewed manuscripts. Before these three main results chapters, however, this dissertation begins with an introductory section (the current chapter, Chapter 1) that outlines the background and contextual factors that have contributed to reducing the farmer population and the need for a new generation of farmers. This chapter also details the trends that

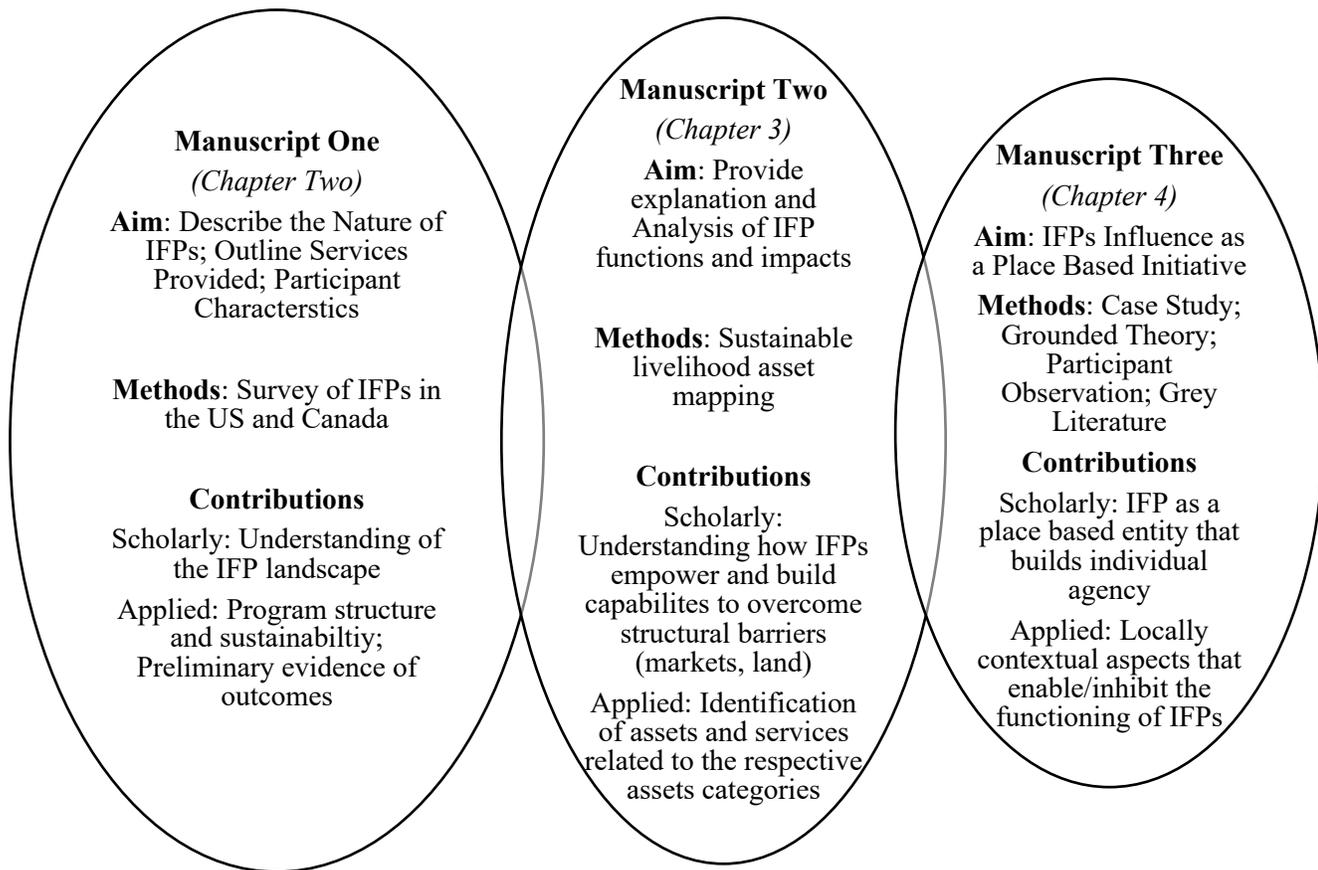
led to the initiation of IFPs. In this section, a conceptual framework further elucidates the contextual factors that contribute to the issue. Chapter 2 is the first of three academic manuscripts; it takes a bird's eye view of the IFP landscape in the US and Canada. A survey instrument (N= 63) was used to collect data from IFPs that are part of the National Incubator Farm Training Initiative (NIFTI). The data were used to develop the types of IFPs in terms of population served, location, age and land extent. Chapter 2 also outlines the types of services that IFPs provide for beginning farmers. The demographic characteristics of the beginning farmers are also teased out using the data. The survey design and data collection were done in collaboration with a master's student at Tufts University and NIFTI. This chapter fulfills the tasks set out in objective one and contributes to a holistic understanding of IFPs in the US and Canada.

In Chapter 3, I unpack IFPs further and move down from the bird's eye view to much closer to the ground level. While it would have been ideal and valuable to do this with all IFPs in the landscape, this is not possible due to the geographical spread and the time restrictions on this dissertation. Hence, five IFPs were selected based on characteristics from Chapter 2 to obtain a sample that was reflective of different types of organizations. The Sustainable Livelihoods Approach was used both as a guiding and analytical lens in this chapter to understand the relationships between IFPs and the beginning farmers they serve. Chapter 3 provides an in-depth view of the capabilities and capacities that IFPs help to build when farmers are first accessing their services. The livelihoods framework as an analytical approach helps to bridge the gap between theory and praxis and provides a deeper and more formalized understanding of how and where IFPs contribute to creating the next generation of farmers. This is probably one of the few instances where an assets-based approach is used in the beginning farmer space and in this aspect, as such, this chapter contributes both theoretically and empirically to the beginning farmer literature.

As my research progressed, it became evident that there was a need to delve deeper into the IFP space as these programs did not operate in a vacuum. IFPs embody the alternative and sustainable agriculture movement but exist in an ecosystem that is situated within the larger scale industrial farm system, which, along with the other parts of the food system, exert substantial influence on IFPs. This also coincided with my move to work in a beginning farmer training program in Northern California in 2016. This program is in one of the most agriculturally diverse regions in the world. Further, Northern California was, and is, at the forefront of many innovations in the farm sector, which include the tomato harvester (1964) to present day robots. There is a high probability that a beginning farmer program in this region would contribute substantially to solving the new farmer issue. Additionally, farming in the region is closely tied to global, national and regional food value chains and spans a wide cross section of crops and products. Hence, the purpose of Chapter 4 was to conduct an in-depth study of an IFP, and this provided an opportunity to observe at close quarters and analyze how beginning farmers navigate this space. In this chapter, I employ case study and participant observation methodologies, and use data collected in this way to explore the concepts of food democracy and pragmatism. Ultimately, this allowed me to understand how IFPs contribute to changes in the food system and how knowledge is imparted and used. In the process of supporting sustainable and ecologically based new farmers, IFPs contribute incrementally, as outlined by Hassanein (2003), to food systems change. The experiential knowledge and learning that pragmatism espouses is a common thread in all the services that IFPs provide. Figure 1.3 provides a snapshot of the three central chapters of this thesis outlining the aims, methods and contributions. While the chapters are stand-alone there is some overlap among them considering that the research focused on one aspect of beginning farmer training space—the

IFP. The receding circles indicate the progression of the study from the broader landscape level to a single case study.

Figure 1.3: Snapshot of Manuscript Aims, Methods, and Contributions



In the concluding chapter, I stand back from the IFP program and go back to a bird’s-eye view and reflect on two key questions: (1) What role do IFPs play in supporting and training a new generation of farmers? (2) Are IFPs part of a system level change? (3) I try to answer the even higher-level and more philosophical question, “Does the food system need a new

generation of farmers?” In attempting to explore these two questions, I hope to further tease out the beginning farmer phenomena and the role of IFPs in this landscape. This will also help to elucidate the effectiveness or lack thereof of IFPs in creating the next generation of farmer. There is also scope here to understand the theoretical underpinnings behind this movement in addition to praxis. In particular, practitioners of IFPs should take away the following points from this thesis (fully described in Chapter 5, at the end of the thesis):

- a) Establishing the different pathways that new farmers adopt when entering farming.
- b) Identifying and listing the outcomes of existing strategies and how they aid new farmers.
- c) Listing ideal types of support programs and strategies that incubator farms need to put in place to help new farmers establish resilient and viable farm enterprises.
- d) Identifying structural barriers that new farmers face in the process of entering the agricultural sector.
- e) Outlining new succession models that help to create a new generation of farmers and facilitate their entry into the agricultural sector.
- f) Informing policy and governing institutions of the need to support new farmers and how to put in place structures to facilitate the creation and establishment of a new generation of farmers.

This dissertation follows the manuscript option as set out by the Department of Geography, Environment & Geomatics at the University of Guelph. Therefore, each chapter has its literature review, methodology, discussions, and conclusion. The limitations are outlined separately in Appendix 1.

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2. New Farmer Support Strategies: A Quantitative Analysis of North American Incubator Farm Programs (IFPs)

2.1 Preface to the Manuscript

This chapter takes a bird's eye view of the IFP landscape in the US and Canada. It lays the empirical groundwork for the rest of this dissertation by providing a comprehensive overview of IFPs. In particular, this chapter draws from the scholarly literature on changes in food systems to explore the historical trends and factors that led to the decline in the farmer population and evaluates ways in which IFPs may remedy this situation. The literature on farmer training is also explored including programs that preceded or informed the early IFPs, including stand-alone training programs, informal and formal on farm internships, and seasonal volunteer opportunities (CASFS, n.d.; CRAFT, 1994; Niewolny & Lillard, 2010). The data for this chapter are drawn from 64 surveys collected in the summer of 2013 and analyzed to characterize IFPs to identify the range of services that IFPs provide to their participant farmers.

2.2 Preface References

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2.3 Publication Details

This manuscript has been submitted to the Journal of Rural and Community Development (JRCD). The journal's internal review process is complete, and revisions have been suggested. Once the revisions are complete it will be sent back for peer review. Resubmission targeted for fall 2020.

2.4 Introduction and Context

Over the past several decades, much attention has been given to the changing nature of the farm sector in majority of developed economies, often in the context of concerns for the sustainability of farming in general and family farming in particular (Berry, 1987; Ilbery & Bowler, 1998; Marsden, 1984; Patel, 2007; Schlosser, 2001; Weis, 2010). It is well documented that one of the most pronounced and consistently observed by-products of restructuring the farm system has been a reduction in both the number of farms and farmers due to farm consolidation and enlargement as part of a process of industrialization (Krischemann et al., 2008). However, today, there is also growing recognition of a seemingly more benign (but equally impactful) challenge on the producer side of the farm sector—the simple passage of time leading to an ageing and soon-to-retire farmer cohort and the necessary, though uncertain, prospect of replenishing the producer base. This chapter arises from both interest and concern for the second of these processes—the inevitability of late career farmers leaving the sector and the related need to achieve, and assist if necessary, a process of renewal on the producer side of the farm system.

It should come as no surprise that just as population ageing is a general characteristic of most developed economies, it is also a feature of the farm sector within these regions. Adding to the lack of certainty about the future of the family farm sector is the fact that almost 30% of Canada's farm operators are expected to retire in the next 15 years. The recent Canadian Census

of Agriculture (Statistics Canada, 2016) pegs the existence of written farm succession plans at between 5% and 18% depending on commodity type, though data on less formal types of succession planning are not available.

The need to address the issue of an ageing and exiting farmer population has received, and continues to receive, considerable attention. Over the last decade, efforts in this direction have grown exponentially. To help aspiring farmers take their first steps into farming, many new farmer support programs have been initiated in North America. State and provincial governments are allocating resources to address farm succession with a focus on new farmers like Ontario's (Canada) Starting a Farm in Ontario – Business Information Bundle for New Farmers, and the United States Department of Agriculture's Beginning Farmer and Rancher Development Program. Among these, the most prominent and widely prevalent model is the *incubator farm program (IFP)*. IFPs provide assisted entry into the farming pathway that is very different from the traditional intergenerational succession.

In the farm succession landscape, where intergenerational farm transfers have been the norm for decades, the incubator farm is a fairly new entrant. The first IFP in Canada was started in 2007 by the NGO FarmStart and around the same time IFPs in the US began rapidly expanding. These organizations' primary function has been to form a pathway to knowledge building and empowerment, and to, temporarily at least, alleviate some of the structural barriers for those from non-farming backgrounds to take the first steps into farming. The growth of this movement in the last decade speaks to its popularity. In light of this growth, there are now opportunities to explore such programs in a scholarly and systematic manner in order to contribute to a clearer understanding of how such programs are structured and perform, and the roles that they play, or might come to play, in the larger "future farmers" question. This chapter explores this

phenomenon, through a review of scholarship, an examination of the policy and program landscape, and an empirical assessment of identifiable barriers and opportunities for successful farm incubation based on a survey (n=63). In particular, the overarching aim is to systematically analyze the IFPs present in Canada and the US and the specific objectives of this chapter are:

- to describe the nature and purpose of incubator farm *programs* focusing in particular on how they attempt to mitigate or control for structural barriers in farmer training in order to build capacity and improve the prospects for farmers to exercise agency in their farming activities and the eventual establishment of their own farms;
- to explore the nature of the specific forms of *support* and/or *services* these incubator farm programs offer to new farmers; and
- to compare a selection of new farmer characteristics with the nature of the services and programs accessed in incubator farm programs to better understand the prospects for initial participant recruitment and the preliminary evidence for documenting outcomes.

This chapter is organized into five sections. First, I briefly review the scholarly literature that has addressed the contemporary problem and dynamics of farm succession and new farm start up. Subsequently, I outline the data collection methods. This is followed by a description of the findings and the discussion. The conclusion section reflects on where the IFP is situated in the larger farm succession landscape, the purpose it serves, and the barriers and opportunities that programs face in supporting a new generation of farmers.

2.5 The Incubator Farm: Cultivating Renewal

There has been growing recognition in both the scholarly and policy arenas of the pending collision of two key elements of the “who will be the next farmers?” question: the ageing of the

current farm population and the declining frequency of family farm succession planning and transfer (Maximer & Wyant, 2019). An added, and more recent, dimension is the high likelihood of a technological revolution radically changing the face of farming (Cox, 2002; Duckett et al., 2018). In the next 15 years, estimates suggest that almost 400 million acres of farmland in the US is to be transferred. Answering the “to whom” and “how” questions are important for both rural America and the national food system (Agrarian Trust, 2014). Canada presents a similar picture with 80% of its current farmers looking to sell or transfer their farm operations in the next 10 years, and only 7 to 10% of them have succession plans and/or successors in place (AMI, 2012).

This is not to say that there is no longer interest in farming as a vocation—far from it. Many agricultural and mainstream media publications in recent years, together with reporting from both agricultural and community organizations, suggest that there is considerable interest in farming and food production—often among people from non-farming backgrounds who aspire to start their own farm enterprises (Ahearn, 2011; Berry, 2015; Bittman, 2015; D’Aliesio, 2012). There are also recent economic analyses of the sector which suggests that there are both economic opportunities and a growing labor shortage in this sector (RBC, 2019). While there are no systematically documented numbers of the size of this population, there is anecdotal evidence to indicate that this is a new and growing trend (Ewert, 2012; Niewolny & Lillard, 2010). The queries that naturally arise are who are these new aspiring farmers and what are their circumstances and motivations? According to Ikerd (2008), aspiring farmers are risk takers, willing to use their agency to “try new things or to try old things in new ways” (pg. 100). Many new farmers are, apart from being good producers, also savvy marketers, or at least knowledgeable about the markets that they want to attract and serve. Indeed, recent research in the Province of Ontario has called attention to the striking and ever-growing cultural diversity of the population suggesting the existence of diverse

and differentiated markets for both food types and distribution practices (Filson, Adekunle, & Sethuratnam, 2011; Smithers & Sethuratnam, 2013). Commentators have also suggested that, along with the entrance of new types of actors, are new sensibilities and normative expectations for what farming might provide as both a livelihood and lifestyle. These new farmers, both overtly and subtly, attempt to exercise individual agency in this uniquely “safe” farming space. The hope is that, as their capacity grows and matures, their participation in an IFP will help them anticipate and overcome some of the structural barriers that the farm system, and farm and food sector present. These individuals, and the enterprises they fashion, may well add considerable diversity in both material and symbolic ways – ways that work to re-frame what has for many years been a difficult narrative surrounding the plight of the family farm.

There is a wealth of grassroots level knowledge about new farmers in and among the civil society organizations that initiate and manage new farmer support programs, like the IFP. The few studies that have been undertaken to understand these programs (Ewert, 2012; Niewolny & Lillard, 2010; Sethuratnam, 2014) indicate that access to farmland and finances are the two most important barriers that new farmers face. Furthermore, the pathway into farming is unlike any other occupation. Even in established farm families where the intergenerational “agricultural ladder” exists, it has long been understood that it can be a slow climb. Writing in the late 1980s, Dasgupta (1988) reported that it took around 17 years for a young person to become an independent farmer. Apart from these two major barriers, new farmers also need to acquire the knowledge, production and planning skills, and need to have the social support networks to be able to successfully start their farm enterprises (Gillespie & Johnson, 2010). Today, in a rapidly changing and evolving technological world, this is especially true (Weersink, Fraser, Pannel, Duncan & Rotz, 2018).

Despite the enormity of these challenges, there are many new farmers seeking out pathways to enter into farming.

To provide a pathway into farming, especially for those with no connections to the sector, new initiatives have become necessary. Several initiatives began in the 1990s focused on internships on farms and seasonal volunteer opportunities (e.g. Willing Workers on Organic Farmers or WOOF program). In most cases, the individual farm(ers) provided room and board and a small stipend, the intern or volunteer (beginning farmer) worked alongside the farmer and learnt the trade. Many of these internships were informal and the quality depended on individual relationships and interactions. Due to the informal nature, the quality of knowledge gained from these experiences was variable and in most cases the intern essentially provided free labor for the farmers. The earliest attempts to put some structure to this pathway was the creation of the Collaborative Regional Alliance for Farmer Training (CRAFT) started in the Hudson Valley New York) in 1994 (CRAFT, 1994). The CRAFT network has since grown across the US and Canada, thus indicating its popularity, and there are currently 18 CRAFT networks in North America. An early study on Beginning Farmer Initiatives by Niewolny & Lillard (2010) lists 30 beginning farmer training programs in the US. Similarly, academic institutions have also played a role in the beginning farmer space: the University of California (Santa Cruz) started one of the first student farms in the country that eventually lead to establishment of the apprenticeship in Ecological Horticulture Program (CASFS, n.d.). A few farms outside of the CRAFT networks also started their own internships. These kinds of initiatives provide an alternative pathway into farming for aspirant farmers, with some gaining considerable repute for good reasons. An example of this is Full Belly Farm's annual farm internship program that manages to attract 500 applications for the five interns that it can accommodate (Full Belly Farm, 2020). This not only illustrates the

popularity of this specific program but also indicates the need for these kinds of pathways more generally. The initiatives to engage with new farmers beyond just providing the pathways also helped exert a collective agency into the new farmer space. In terms of relating this to the underlying tension between structure-agency, agency is viewed as “strategic agency” where a number of actors play a role in systems level transformation (Westley, Tjornbo, Schultz, Olsson, Folke, Crona & Bodin, 2013).

In the business sector, there is evidence of the value of such strategic agency where incubator spaces help to reduce start-up costs and provide not only market access but also access to a community of like-minded people. In some cases, incubator spaces also accelerate the process of establishing a new business (Grimaldi & Grandi, 2005). The information technology sector (IT) is littered with stories of start-up spaces, which included academic institutions like Stanford University and Massachusetts Institute of Technology (Coldewey, 2017; Holden, 2017). These spaces help those with limited resources gain knowledge, develop networks, and leverage financial support to become successful and thrive in the sector: in short, to incubate enterprises (Battelle, 2017). While farm internships and student farms represent a non-traditional entry point into the farm sector, such programs lack the independent and experiential learning space that is vital at the start-up stages. Like the incubators in the IT sector, farm incubators aspire to encourage and support many from outside of the farm sector to become successful farmers. A farm incubator, unlike those in IT and other sectors, is unique and somewhat constrained in that it needs to have access to land, hence the process of establishing an incubator is dependent on the ability to lease or acquire, that land, which is often the most elusive and expensive element of a farm start-up. Farm incubators, according to Calo, Teigen, & Master (2016), “insulate beginning farmers” from the structural issues they face, especially around access to land. Nevertheless, we have seen a surge

in the growth of farm incubator programs (Ewert, 2012). Currently, it is the most widely prevalent beginning farmer support initiative and one that probably has the potential to create an effective pathway into farming for aspiring farmers.

To date, some studies have explored beginning farmer training programs and, in particular, incubator farms, and employed varied lines of enquiry in their attempt to understand this space. Niewolny & Lillard (2010), for instance, provide a descriptive summary of beginning farmer training programs in the US with a socio-historical perspective. Ewert (2012), adopted a case study approach to analyze three IFPs in an attempt to learn lessons that might benefit future programs. Additionally, Calo, Teigen, & Master (2016) have gone a step beyond to explore the challenges beginning farmers face in terms of land access once they exit incubator programs.

The above studies, and their lines of inquiry, are valuable but only this study focuses on the incubator model itself. The analysis reported in the present research builds on and delves deeper into, program characteristics in terms of populations served, services provided and geographic location. It analyses the characteristics of the participant farmers to better understand the demographics. This is important as it points, if even just speculatively, at the potential sources and circumstances for the next generation of farmers. Understanding the model is vital in eventually measuring its success at both the temporal and spatial levels and in understanding how the model is contributing to fulfilling the need for a new generation of farmers.

2.6 Methods: Exploring the Incubator Farm Program

The remainder of this chapter reports on an empirical analysis of 64 incubator farm programs. The main objective of this research was to identify and analyze the structural and operational features, that is the architecture, of known IFPs in the US and Canada. This was achieved via two means:

- the first involved the use of secondary data from the US National Incubator Farm Training Initiative (NIFTI)¹ website to identify IFPs that were currently in operation in US and Canada;
- the second involved an online survey administered to all identified operational IFPs (n=64)². The survey consisted of 45 questions focused on program information, participant information, services provided, organizational structure, and respondent demographics (See Appendix 1 for survey).

The NIFTI website was used to obtain a sample framework for this research, and according to this dataset, as of 2013, there were 111 known incubator programs in the US and Canada (Overton, 2014). This included potential/planned programs, training programs without land, and university-based programs. It was decided to not include these incubator-related initiatives as part of this study because the desire was to capture current modes of service delivery and training that were operational and land-based. As such only IFPs with land and which were operational, were included in the analysis. The survey was administered using the Qualtrics survey software.

The survey respondents were primarily IFP staff who worked directly with new farmers. Their answers and opinions encompassed aspects of the programs that included land extent, location, years of operation, services, organizational structure, and demographics of new farmer participants (Overton, 2014). The rationale for administering the survey to staff (rather than farmer participants) was rooted in the desire, in this portion of the analysis, to gain a broad overview of the sector through the use of “locally aggregated” program level data rather than the more

¹ NIFTI is based out of the New Entry Sustainable Farming Project, which is an initiative of Tufts University’s Friedman School of Nutrition Science and Policy.

² The survey was part of NIFTI’s data collection efforts on IFPs and involved Meghan Overton, a graduate student at Tufts University

individualized observations of specific participants. The survey participants, while speaking across their respective participants as a group, were nevertheless keenly aware of who they were serving and possessed the ability to communicate in an informed manner about the backgrounds and experiences of the participant new farmers. In addition, my association with NIFTI, and informal visits to various IFPs in Canada and the US, also provided data and valuable insight for this study.

The final dataset consisted of responses by personnel from 46 of the 65 programs (includes 3 university-based programs) are included in the US and Canada, representing a 70% response rate for the online survey. The IFPs that answered the surveys were plotted onto a map to show their geographic distribution (4 IFPs did not wish to be identified) (Figure 1). The map indicates that most of the programs are clustered around the west and east coasts of the US and that the farm incubator program phenomenon is less well established to date in Canada with only three programs identified (two in the Province of Ontario and one in the Province of Quebec).

Figure 2.1: Location of Incubator Farm Programs (Survey Respondents)



Data Analysis and Participant Demographics

Descriptive statistics such as means and frequencies were used to highlight the characteristics of the IFPs, the services provided, and to identify common elements. Descriptive statistics were also used to identify the demographic characteristics of the participant farmers in the programs. SPSS software was used to run crosstabs to analyze how important the differences

in training aspects, and market channels were in relation to the geographic location of IFPs and the population served.

Demographics

The participants' ages varied from a minimum of 25 years to a maximum of 56 years with an average of 40 years. This is substantially younger than the average age of the existing generation of farmers (58 years) as reported in census data in both the United States and Canada, yet also suggests the presence of many individuals who were well past their point of entry into the workforce. The proportion of men (52%) was higher than women (48%) as compared to the national figure where only 36% of all farmers were women (USDA, 2017). While this research did not focus on the gender gap it is noteworthy that there are more women beginning farmers than the national average. According to Fremstad & Paul (2020), "women are indeed more likely to be principal operators on sustainable farms than on conventional farms" (pg. 27), especially farm that operate community supported agriculture program (Fremstad & Paul, 2020). The demographic details of this research further corroborate this trend.

Most new farmers had an average of 4 years prior farming experience when entering the incubator farm program (Table 2.1). The range of experience varied from 2 to 18 years with a mean of four years.

Table 2.1: Years of Farming Experience

Farming Experience	Mean	N
Average years of experience	4	41
Min. years of experience	2	42
Max. years of experience	18	42

Programs had fixed tenures for their participant farmers and on average this was limited to three years. In terms of participants' level of education, 27.7% of respondents had a bachelor's degree, which was the most common level of education attained. This was followed by "some level of university/college" and "some level of elementary school" at 13 and 14% respectively.

2.7 Findings

This section presents the findings from the data analysis. The results centered around three themes: a) A description of IFP characteristics and organizational structure; b) an analysis of the services and supports offered; and c) an exploration of training and supports in relation to IFP characteristics as outlined in Table 2.2.

Characteristics and Organizational Structure of IFPs

The IFPs evaluated in this study were characterized along four lines: populations served, geographic setting, number of years in operation, and scale of program which was represented as the amount of land each managed. These attributes influence how they establish themselves. Table 2.2 provides the number of IFPs that fall under each of the characteristics mentioned above.

Table 2.2: Selection of IFPs based on Specific Characteristics

Pop. Served	Number (%)	Geog. Setting	Number (%)	Yrs. in Operation	Number (%)	Land Extent (Acres)	Number (%)
Refugees & Immigrants	21 (41%)	Urban	23 (48%)	< 3	38 (61%)	<10	27 (44%)
Other New Farmers	30 (59%)	Peri/Near Urban	21 (44%)	3-6	4 (7%)	10-29.99	17 (28%)
Missing data	12	Rural	4 (8%)	7-10	15 (24%)	> 30	17 (28%)
		Missing data	15	>10	5 (8%)	Missing data	2
				Missing data	1		

The nature of the population served recognizes a distinction between two key groups – refugees/immigrants, and other new farmers pooled. There is a move, especially in the US, to guide refugees to grow produce from their countries of origin as a part of their settlement process. The strategy of using farming as a resettlement tool opened opportunities for this population to become farmers. Some immigrants, on the other hand, come to the US and Canada with either experience in farming or some connections to agriculture from their country of origin, and strive to pursue it here. Several programs (41%) focus on refugees and immigrants. ‘Other new farmers’ is a cohort that includes people (young and old) with little or no connection to the farm sector, but who want to start farms. Table 2.2 shows that most IFPs serve other new farmers, a group that is likely to include young people predominantly from urban areas, and career changers. While there may be likelihood of some overlap between the categories, this was not identifiable in the data.

The second characteristic considered was the specific geographic settings of the IFPs. It is important to note that most IFPs (92%) are based in urban or semi-urban areas, suggesting they are located close to people without obvious connections to rural areas. From this, it is imagined that rural IFPs may be better connected to the farm sector, while those in urban areas had a better awareness of consumer needs. As most participant new farmers are from urban areas, near-urban farms serve them better in terms of accessibility and housing, but the lack of connection to rural areas implied by the largely urban setting suggests that access to rural services (including access to land) may be a problem. This will be discussed in more detail later in this chapter.

The age of the program was identified as a potential characteristic that will elucidate how newer programs have established and evolved. It is noteworthy to mention that the oldest program was established in 1988, but the real growth of the model is observed only after 2007. The data indicates that 61% of the IFPs were less than three years old at the time of data collection. Finally,

all IFPs are land-based, hence studying IFPs in terms of acreage and ownership and how this impacts their programmatic space and participant engagement is pertinent here. Almost 44% are less than 10 acres, but there is wide variation in the acreage with the smallest at less than an acre and the largest at 200 acres.

IFPs are predominantly (70.9%) not-for-profit organizations. There were two that were sole proprietorships, and four listed themselves as government agencies. There were also four that were part of an academic institution and six that were structured as hybrid programs—for example, non-profit and academic. Programs were primarily funded through government and foundation grants. In total, 55% of survey respondents listed federal grants as a significant funding source, and this was closely followed by private foundation funding at 60% and individual fundraising at 25%.

Some of the key observations that require mention here are that incubator farms ranged from one acre to 200 acres but were mostly (44%) clustered in the less than 10-acre category and located in urban or peri-urban regions. Their participant farmers mostly undertook vegetable and livestock (poultry, pigs, and sheep/goats) production catering to the local markets (farmers markets, community-supported agriculture (CSA), and restaurants). All programs provide a gamut of services with production techniques and business planning being the dominant areas (Obudzinski, Perez & Williams, 2017). The beginning farmers they serve are predominantly from urban regions with little or no connections to the farm sector.

Nature of Support and Services Provided by IFPs

The on-farm services that programs offered were classified under free and paid equipment, and paid infrastructure services. Generally, programs offered more services that were paid for in comparison to free services (Table 2.3).

Table 2.3: On-farm Services

Service Provided	Brief Description of Service	No. (%) of IFP Offering this Service (n=63)
Free Equipment		
Free rent for incubator plots	Plots provided free of cost	13 (21%)
Free access to farm tools	Small tools like wheel hoes, hoes, broad forks and seeders provided by the program	31 (49%)
Free access to walk-behind tractor	Walk-behind tractor (BCS) provided free of cost	9 (14%)
Free access to tractor/ heavy equipment	Tractor operations like plowing, tilling, and bed making, provided free of cost	7 (11%)
Paid Equipment		
Paid rent for incubator plots	Farmer pays land rent for plots at market rate or slightly discounted	31 (49%)
Paid access to farm tools	Farmers pay for small tools	21 (33%)
Paid access to walk-behind tractor*	Farmers pay for usage of walk-behind tractor on an hourly basis	23 (36%)
Paid access to tractor/heavy equipment	Farmers pay for tilling, plowing, and other tractor operations on an hourly basis	16 (25%)
Paid water	Farmers pay for actual usage of water	32 (51%)
Paid Infrastructure		
Plowing before growing season	Program undertakes land preparation in spring and fall	33 (52%)
Access to a greenhouse or hoop house	Program provides access to greenhouse space for a fee	40 (64%)
Program provides compost	Compost provided by program for a fee	30 (48%)

Program provides irrigation infrastructure	Irrigation systems put in place by program, farmer pays access fee	42 (67%)
Program provides access to office facilities e.g. phone, computer	Administrative infrastructure provided for a fee	17 (27%)
Program provides access to kitchen	Farmers have access to certified kitchen to prepare foods for sale (value add)	8 (13%)
Program provides other services	Cooler space, marketing support, free seeds in year one	18 (28%)

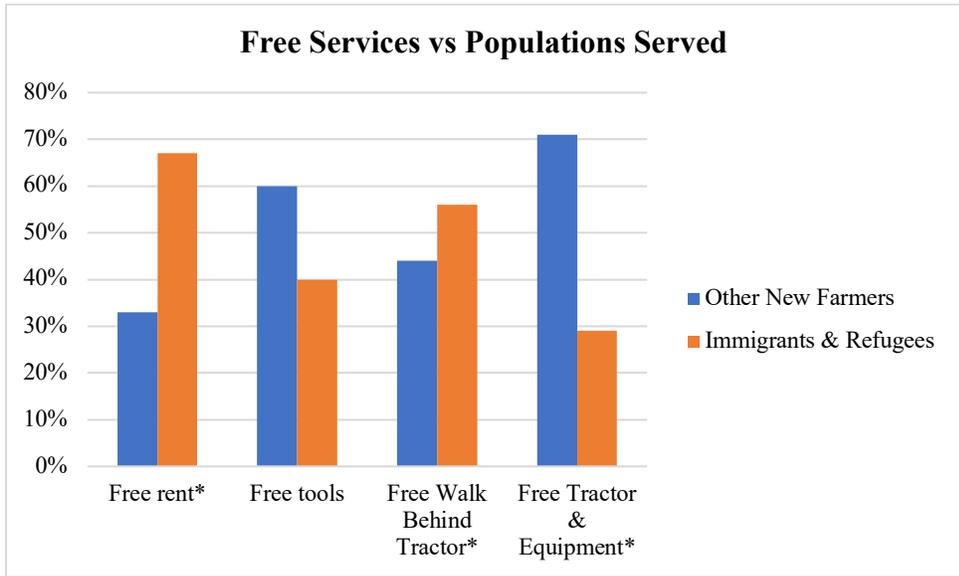
* A hand operated tilling machine that is used instead of a tractor on small-scale farms see <https://www.earthtools.com/>

As Table 2.3 indicates, access to small tools was the most commonly offered service in the free service classification. In the paid service area, a higher percentage of programs charges fees for irrigation related services (irrigation system and water).

An analysis was conducted to assess if IFPs provided specific services based on the populations served. As Figure 2.2 indicates, between 60 to 70% of the IFPs who responded to this question provided free tools and tractors to other new farmers, which was higher than the immigrant and refugees cohort. Alternatively, 55 to 65% of IFPs provided free rent and walk behind tractors for immigrants and refugees. This indicates that immigrants and refugees are likely to need support to access smaller parcels of land and used smaller equipment, whereas other new farms probably start up on larger parcels and thus need tractor and tools. An independent sample T-Test was done to identify if there was statistical significance in the means between free services and the different populations served (other new farmers, immigrants and refugees). The T-test at a 5% level of significance shows that there was a highly significant difference in the mean for all services (free rent $p < 0.005$, free walk behind tractor $p < 0.007$, free tractor and equipment $p < 0.043$), except for free tools where the means were the same. The rationale for doing this test was to test the hypothesis that programs serving immigrants and refugees would provide more free

services when compared to other new farmers. The assumption here was that immigrants and refugees would need more support to start their farms.

Figure 2.2: IFPs Offering Free Services and Populations Served



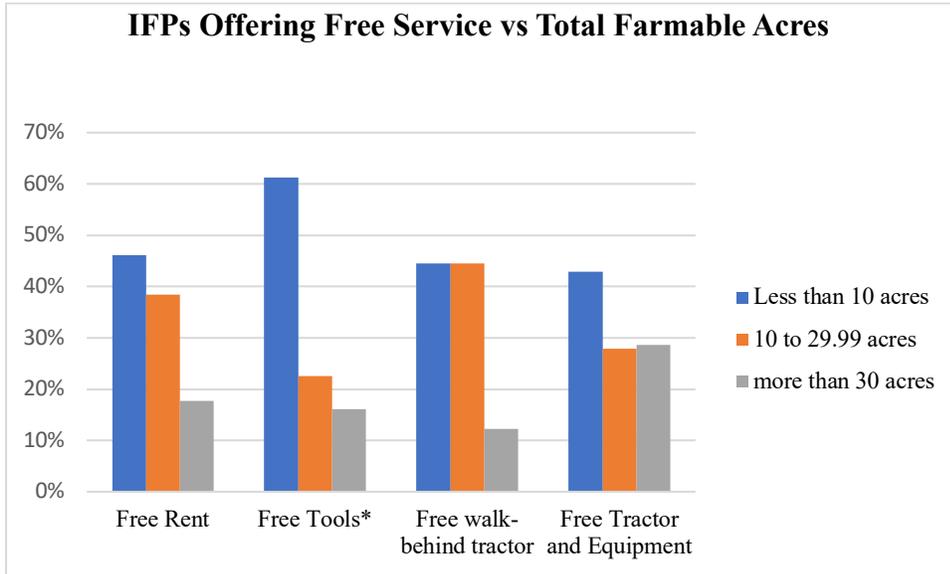
*Denotes relationships that are significantly different ($p < 0.05$)

Similarly, a comparison of services offered by IFPs in different geographic settings was carried out. Surprisingly, given the fact that these organizations service entirely different types of beginning farmer, there were no statistically significant differences in the services offered by IFPs in different regions. The potential importance of this is reflected on in the discussion. The connection between the years the IFP was in operation and the services each offered was tested. An Analysis of Variance (ANOVA) was run to test for any significant difference between the means but did not confirm any statistically significant variance.

Finally, the relationships between the land extent of IFPs and free services was explored (Figure 2.3). Small and medium sized IFPs (1 to 29 acres) provide free services across the board with free tools being the topmost service. Only 10 to 18% of the larger IFPs (more than 30 acres) provided any kind of free services with free tractor being the exception at 29%. ANOVA indicated

that there was a statistically significant difference in the means between farmable acres and free tools ($p < .041$) while the other services were not significantly different.

Figure 2.3: IFPs Offering Free Service and Total Farmable Acres



*Denotes relationships that are significantly different ($p < 0.05$)

Training and Support

Program staff ranked how important it was (on a scale of 1 to 5 where 5 is extremely important) to provide training to their participant farmers in different aspects of production and management. Table 2.4 lists the services and the respective rankings. Training in sustainable production was scored as extremely important, closely followed by marketing and business planning. Value added production was ranked the lowest.

Table 2.4: Training Offered

(from extremely – 5 – to not – 1 – important)

Description of Service	Avg. Score* (n=49)
Sustainable production	4.8

Marketing	4.7
Business planning	4.7
Crop planning	4.7
Financial planning	4.6
Environmental issues	4.3
Livestock production	4.2
Equipment operation	4.2
Equipment selection and maintenance	4.1
Fertilizer and pesticide application	4.3
Innovative new technologies	4.0
Value-added production	3.9

* Higher numbers are more important

The data was further unpacked by mapping the training aspects listed in Table 2.4 against IFP geographic settings (rural, urban, peri-urban) and is presented in Table 2.5. An ANOVA was conducted to test if there were any significant differences between the geographic settings of IFPs and trainings provided. The ANOVA test indicated that differences in means were not significant. ANOVA was used in this instance because there were more than two grouped variables.

Table 2.5: IFP Geographic Settings and Training Systems

(from extremely – 5 – to not – 1 – important)

Description of Service	Rural n=4	Urban n=23	Peri-Urban n=21
Sustainable production	4.5	4.8	3.5
Marketing	4.8	4.7	4.7
Business planning	4.8	4.5	4.7
Financial planning	4.5	4.4	4.8
Crop planning	4.8	4.6	4.6

Organic production	4.8	4.4	4.6
Livestock production	3.3	3.2	3.1
Farm management	4.8	4.4	4.6
Equipment selection and maintenance	4.3	3.7	4.1
Environmental issues	4.5	4.2	4.3
Equipment operation	4.3	4.1	4.2
Innovative new technologies	4.5	4.2	4.3
Value-added production	3.0	3.5	3.4

* Higher numbers are more important

Similarly, an assessment was conducted on the trainings that IFPs provided against the populations (Table 2.6). This analysis helped to highlight any difference (or similarities) in services provided based on the populations served, as it was assumed that the training needs of immigrants and refugees will differ from those of other new farmers as the latter cohort are new to the country.

Table 2.6: IFP Trainings and Population Served

(from extremely – 5 – to not – 1 – important)

Description of Trainings	Other New Farmers	Immigrants & Refugees
	Avg. Scores* n=31	Avg. Scores* n=20
Sustainable production	4.7	4.7
Marketing	4.7	4.8
Business planning	4.6	4.7
Financial planning	4.6	4.7
Crop planning	4.7	4.5
Organic production	4.5	4.5
Livestock production	2.9	3.8
Farm management	4.5	4.5

Equipment selection and maintenance	4.0	3.8
Equipment operation	4.2	4.1
Innovative new technologies	3.7	3.9
Value-added production	3.5	3.6
Fertilizer and pesticide application	4.3	3.9

* Higher numbers are more important

Market training and support ranked high for respondents serving all types of aspiring farmer, with immigrants and refugees ranking it highest. Similarly, business and financial planning was scored highly and showed little variation in ranking across client group served. The scores are broadly similar across both the populations indicating that there are no real differences in terms of priorities that IFP staff set for both populations.

Since marketing is a crucial aspect and was ranked high, it was analyzed further. Marketing support included programs establishing farm stands, CSA, and a range of market linkages and channels for participants. Survey respondents ranked how vital different marketing channels were to their participant farmers. Table 2.7 provides the various market channels and the respective rankings.

Table 2.7: The Importance of Training in Different Marketing Channels

(from extremely – 5 – to not – 1 – important)

Description of Marketing	Avg. Scores* n=48
Producing for local markets	4.9
Selling directly to consumers	4.6
Selling at farmers’ markets	4.5
Participating in CSA	4.3
Minimizing cost of production	4.3
Following best management practices	4.1

Creating value-added products	4.0
Selling to wholesalers	3.8
Selling to processors	3.8
Producing for global markets	3.3
Producing for national markets	3.3

* Higher numbers are more important

Selling at farmers markets, direct to consumers, and producing for local markets were topmost marketing channels while global and national channels were ranked considerably lower. The different market channels were analyzed further according to the populations served. Table 2.8 presents these rankings, and except for the global and national markets, all other markets and related aspects are ranked evenly. This indicates that marketing, and the opportunities and challenges it presents is typical for all cohorts of new farmers.

Table 2.8: IFP Market Channels and Population Served

(from extremely – 5 – to not – 1 – important)

Description of Market Channels	Other New Farmers	Immigrants & Refugees
	Avg. Score* n=31	Avg. Scores* n=20
Producing for local markets	4.9	4.8
Selling directly to consumers	4.7	4.6
Selling at farmers’ markets	4.6	4.5
Participating in CSA	4.3	4.3
Minimizing cost of production	4.3	4.4
Following best management practices	4.1	4.2
Selling to wholesalers	3.5	4
Creating value-added products	3.3	3.7
Selling to processors	2.8	2.9
Producing for global markets	1.7	1.8
Producing for national markets	1.8	2.3

* Higher numbers are more important

Supportive Community

IFPs also strove to build a supportive community of new farmers who share knowledge and skills and support each other. This community-building aspect is an added benefit of these programs. In an attempt to understand how individuals contributed to building this community, survey respondents were asked to rank certain character traits and group dynamics that contributed to community building. Table 2.9 provides a snapshot of these traits and respective rankings among both individual and group participants.

Table 2.9: Community Building Aspects

(from extremely – 5 – to not – 1 – important)

Description of Participant Qualities	Avg. Score* (n=49)
Interact regularly with each another	4.5
Share information and help each other	4.5
Proud to be part of the program	4.4
Share past experiences to help solve problems	4.4
Value skills/abilities of their peers	4.3
Work in pairs or small groups	4.3
Committed to a farming career	3.9
When someone comes up with new ideas others adopt it quickly	3.9
Takes a while for new participants to be accepted by others	3.8
When participants have a conflict staff often need to intervene	3.7
Write down routines, tips, and group rules	3.6

*Higher numbers are more important

2.8 Discussion

This section offers some integration and reflection on the findings. The key results that emerged from the findings fall under the following themes:

- organizational structure,
- financial and funding sources, and
- the nature of services provided.

Organizational Structure

Most, but not all, government grant programs, such as the Beginning Farmer and Rancher Development Program (BFRDP) program, require organizations to be non-profits or charities, which could explain the predominance of this structure among IFPs (Ewert, 2012; Obudzinski et al., 2017). The BFRDP program was, and still is, instrumental in the growth of this model. Furthermore, anecdotes from actors in the sector suggest that private foundations and individual donors prefer to fund non-profit entities rather than private initiatives. According to Smith, Ostrom, McMoran, & Carpenter-Boggs (2019), “Farm incubator programs support the development of beginning farmers by linking them to place via the social networks, knowledge set, and markets they become connected to through the program” (pg. 122). Social networks and knowledge are critical to building an individual’s agency, which in turn assist in overcoming some of the existing structural barriers like markets and financial access. The data from this study show that IFPs help to build agency, and at least on paper, help to overcome some structural barriers like access to land.

In my observation, IFPs seem to draw heavily on the concepts of adult education and experiential learning, and do not necessarily rely on a structured or curriculum-based space. Obudzinski et al. (2017), while reporting on BFRDP funded IFPs, point out that “Non-profit led

grantees were more likely than Land Grant University/Extension led projects to use experiential methods such as mentoring (76% vs 52%) and structured networking (70% vs. 63%)” (pg. 26). It should also be noted that such capacity building programs must cater to non-traditional forms of learning. In such forms of learning, the onus is on the learner to acquire the required knowledge and skills. Individual agency is critical here because without the motivation and passion that many new farmers possess, this type of self-directed learning will not be effective. Furthermore, learning and agency are interrelated, and according to Biesta & Tedder (2007), “learning about one’s agentic orientations and learning how to reframe a particular agentic ‘constellation’ can be important in shaping our responsiveness and hence in achieving agency” (pg. 146). It is evident that IFPs help to build individual agency in the initial stages of a new farmer’s journey.

Funding Sources

Financial resources and, in particular, the nature and stability of funding sources both characterize and challenge IFPs across the board. IFP staff ranked federal funding as the most important source of funding for their organizations (55%), while private foundation grants and state funding sat well back on the list with only 2% of respondents listing them as important. A point to note with regards to program funding is that only one program mentioned farmers’ fees as important. This suggests that IFPs rely heavily on external funding. The question of why this renewed interest in farming was not able to pay adequately for IFP services circles back to the some of the institutional level (structural barriers) highlighted in Figure 2 of the introductory chapter. New farmers are constantly competing against the paradigm of the ability of productivist agriculture (where structural forces at work in the economy create a context that pushes large economies of scale and an approach to farming that privileges production over all other values) to produce cheap food (Patel, 2009; Weis, 2007b). Hence, the margins that new farmers in the IFPs

generate can only pay for part of the cost of the services that IFPs offer. At the start up stage (years 1 to 3), IFPs invest considerable staff time in supporting and mentoring new farmers, and this is necessary, but this cost cannot be pushed onto new farmers. In the IT sector where the startup culture is strong and vibrant, this cost is shared through coworking spaces and collaborations. IFPs are somewhat similar in this sense but the land aspect, and the dynamics around it, are quite different from coworking office spaces. Furthermore, the IT sector attracts numerous venture capitalist and angel investors, which is nonexistent in land-based startup models.

There is widespread acknowledgement that non-successional forms of entry into the farm sector is vital to bringing new blood into farming (Ilbery et al., 2012). There is also the recognition that this space requires non-traditional forms of learning and skills development to be effective (Laforge & McLachlan, 2018). IFPs clearly address both these needs yet there are many that struggle financially. As the IFP space grows the pressure on the limited funding sources increases creating unnecessary competition between programs. At the crux of the problem is the fact that IFPs are management intensive and cannot recover the management costs through farmers fees due to the low income generated by the farm business. It was reported in the survey that, while farmers pay fees for services, those fees are not enough to cover program expenses. This situation, as the data indicates, remains an especially stubborn challenge with programs currently depending heavily on grant funding for their sustainability.

Nature of Services Provided

The reconnaissance exploration of the sector reveals that IFPs offer a wide spectrum of support services for their participant farmers, which encompasses many, if not all, of the important aspects of farming. While the spectrum is broad, the services are similar across IFPs, irrespective of geographic setting, populations served, and farm size or land extent. These services can be

broadly classified into two categories: physical and knowledge/training. There is ample evidence in the literature laying out the structural barriers that have led to the lack of access to land, and the challenges access to land poses to new farmers (Calo et al., 2016; Naomi, 2018b; Ruhf, 2013; Williams, 2006). IFPs, by providing access to land and allied on-farm services, to a limited extent help to remove this structural barrier. The physical services that center around land, equipment, infrastructure, and other allied services are common for all IFPs in terms of population served (other new farmers, immigrants and refugees) and geographic location (rural, urban, peri-urban). The services that provided the knowledge and networks were started simultaneously with the physical services as IFPs realized that providing the physical services alone was not enough. Knowledge needs were similar across all IFPs. The hypotheses that needs will differ across populations served and geographical locations did not hold true. In both these cases, sustainable production, and farm management/planning were within the top five needs (Tables 2.8 and 2.9 on pages 56 and 57). The knowledge imparting services helped build the new farmers' confidence and capability, as did the mentorship and peer support. The data collected on the services and supports that incubator farm programs deliver helped to provide insights into the types and ranges of services that were in place. In general, IFPs that served immigrants and refugees were smaller in acreage, below three years in operation, were located in urban areas, and tended to offer more free services (Table 2.4). The programs undertook some field operations like spring and fall plowing, while the farmers carried out other operations or paid an external contractor.

Apart from the physical services (land and equipment), programs also conducted a wide range of workshops/trainings to meet the knowledge needs of participants, which are as important as the physical aspects. Training and support in business and financial planning were ranked at the top by more than 60% of the respondents indicating that IFPs promote farm enterprises rather than

hobby farms. On the production side, training in sustainable production, organic methods, and crop planning and selection were ranked at the top. Similarly, sustainable and organic production methods were highly ranked with 72% of survey respondents ranking sustainable production as extremely important. This indicates that IFPs focus on alternative production methods and were not part of the industrial farming model. Marketing training was also highly ranked, and when asked about the different marketing channels that were important for their participants, survey respondents ranked producing for local markets as a top priority.

A further analysis of the knowledge needs was done by comparing it to the populations served and geographic location of the IFP. The assumption here was that the training needs across populations and/or across geographic locations would differ. The findings were contrary to this assumption with training aspects across populations and geographic settings exhibiting strong similarities; and where differences existed, they were marginal (see Tables 2.8 and 2.9 on pages 56 and 57). That there is no difference in knowledge needs across populations and geographic locations is perplexing, and further research is needed to unpack this finding. At this point, based on my observational knowledge, it can only be assumed that IFPs replicated structures from the IFPs that preceded them, or they just replicated the structures of the conventional farming systems. In the long run, this does not bode well for IFPs as it will become a one size fits all concept, which is alien to the sustainable farming movement that advocates for diversity in crops and farmers.

Marketing is one aspect that all programs consider important and focus on building capacity in their participant farmers. While there is a focus on a range of market types, according to the data, producing for local markets and selling at farmers' markets, and through CSAs is the primary focus. This should not come as a surprise because many new farmers and programs that support them are rooted in selling to the local communities (Berman, 2011; Niewolny & Lillard,

2010; Seccombe, 2007). Survey respondents also ranked selling to wholesalers at a high level. This indicates that new farmers are not just confining themselves to direct sales but are also looking at a wider market and consumer base. Currently, these value chains are beyond the reach of many new farmers, but IFPs are providing the agency and confidence for new farmers to tackle this market. This bodes well for the future, as currently there is criticism that the types of market channel that new farmers tap into (farmers markets and CSA) are only reaching a small portion of the population and can never feed the vast majority. The vertically integrated nature of existing value chains are not accessible to many new farmers and are not conducive for small-scale producers (Andree, 2009; Winson, 1995). Despite of these challenges, the fact that new farmers are willing to sell wholesale, albeit within their region, might be an indicator that they will be able to serve bigger markets and thereby reach a wider population.

The services that IFPs provide help to remove some of the structural barriers that new farmers face especially around land and markets, but this is only within the IFP space. Issues like access to and cost of land need to be addressed outside of the IFP space, although in the fullness of time, increased capacity and performance of the IFP movement and its ability to form critical partnerships may enable involvement in such activities. However, at present, these aspects are a much larger issue and beyond the scope of IFPs as they exist now. The services that IFPs provide are largely aligned with the sustainable/alternative farming systems, hence they play a key role in the shift towards sustainability. But IFPs still have to navigate market structures that are part of the global food economy. Similarly, IFPs pay considerable attention to business and financial planning, and use those techniques as primary metrics to measure the success and progress of new farmers. That IFPs do not encourage other types of marketing like cooperatives and use metrics

like soil status, crop diversity and ecosystem health are baffling, especially considering that many new farmers come with an agroecological approach to farming.

Evidence of Homogeneity

Overall, the analysis presented in this chapter illustrates that the services provided are, from a high level of resolution, largely homogenous in spite of the diverse range of populations they serve, their differing and distinctive varied geographic locations and settings, and across varying spatial scale of initiative. IFPs, though similar at the core, have an eclectic mix of characteristics that make them very different. Despite this potpourri of services that they provide the rankings that IFP staff provide for these services are homogenous, which seems to be counterintuitive.

As previously stated, new farmer programs also strive to build a community of new farmers. In this aspect, respondents indicated that interacting and sharing knowledge was important for new farmers. Valuing the skills of their peers, working together as a group, and sharing past experiences to solve problems was next on the ranking list. This indicates that a supportive community of peers is an important aspect both in the way knowledge is shared and as support for a new farmer's pathway through farming.

Farming is a vocation that is learned best when the knowledge transfer takes place from farmer-to-farmer. This method of learning has been the case in the traditional form of succession where "within family" successors were taught and trained by their farmer parents or elders. While educators and extension agents play an essential role, there is substantial anecdotal evidence to show that peer-to-peer learning and mentorship by experienced farmers is critical to a new farmer's learning process. The data from this study validates traditional forms of farmer-to-farmer learning and knowledge transfer this. IFPs support the building of a community of new farmers. Their participants form a community within the program space, and through training workshops, the

program engages with other new farmers in the region. This community helps in the peer-to-peer learning process and encourages the older farmers in the network to act as mentors. This research suggests that building a network and community of like-minded farmers is an important aspect of IFPs.

The broad nature of the services provided clearly indicates that programs provide support during the start-up stage (years one to four) of establishing a farm business. While participant farmers are encouraged to learn and eventually run their own enterprises, they are not just given a piece of land and asked to fend for themselves. Support is provided as and when required and for aspects that are crucial in the learning curve of becoming farmers. In general, the services and supports that this study identified mirror the observations by Niewolny and Lillard (2010) on IFPs. They state that “a common goal guiding their (incubator farms) actions is to provide suitable information, training and learning opportunities to people establishing and retaining new farms because traditional forms of education are not addressing their needs” (pg. 71). The services that IFPs were found to offer seem to hold prospects for providing new farmers with the skills and knowledge needed to enhance capacity and exercise some measure of personal (and collective in concert with others) agency, giving new farmers the confidence to leave the program and strike out on their own. During this early training and learning period, IFPs work to empower individuals and shield beginners from the wider structurally embedded challenges they will face, a valuable reprieve even if it is only temporary and in a highly managed setting.

With all that said, the IFP model explored in this chapter still reinforces the old paradigms; this inference is drawn from the fact that the training and support are not catered to the populations they serve or where they are located. All new farmers once they enter the model need to learn the existing systems and learn to navigate and live within them. Contrary to Ikerd's (2008) statement

“try new things or to try old things in new ways” (pg. 100), it looks like the IFP model, and the way it is structured currently, guides new farmers to try new things within the old ways.

2.9 Conclusion

There remains a growing concern in the farming sector, and recently in policy discourses, over the impending need for a new generation of farmers to replenish and sustain the legacy of the family farm and food production at non-industrial scales targeting local markets (Ewert, 2012; Lobao & Meyer, 2001). In the last decade, due to the growing uncertainty of intergenerational farm succession, non-traditional pathways into farming have been gaining importance. Among these initiatives, the incubator farm is quite popular. Its uniqueness lies in providing both the experiential learning and the theoretical knowledge for a person to be successful as a farmer, all in a single concept or model. But questions remain: does the IFP model really empower farmers to become more self-determining agents by breaking down structural barriers, or does it simply reinforce an unsustainable status quo that prevents innovation and renewal in the farm community?

This research sheds light on this “assisted entry into farming” pathway via the model of the incubator farm and its role in addressing perhaps the most fundamental element of new farmer training and growth: access to land. Beyond providing some insight into purpose and design features of such initiatives, it is possible to arrive at some preliminary conclusions concerning the efficacy of the model in growing the next generation of farmers.

The growth in IFPs in the last decade indicates that they are a popular new farmer engagement strategy, particularly in the US, while Canada seems to be lagging behind in the IFP space with very few established IFP present throughout the country. A snapshot of their structure, the populations they serve, and services offered shows that they help aspiring new farmers to take their first steps into farming and that there is a supportive community for them on this journey.

Furthermore, both the programs and the new farmers who are part of them strive to establish an alternate system of farming. This is demonstrated by the fact that establishing ecologically sustainable farm enterprises and serving local consumers and markets is a high priority for most if not all programs (Carlisle et al., 2019), though the latter is not a new concept.

That most programs have more applicants than land in a given year also points to the popularity of IFPs. But more research needs to be done to assess if the farmers that these programs support and encourage acquire the capacities and capabilities to establish their own farms and eventually become the much needed next generation of farmers. In IFPs support, it can be argued that the incubator concept is still nascent and experimental in nature and that it is too early to gauge a process that traditionally took 17 years (Dasgupta, 1988). At this point in time, the concept's value and major outcome is its being able to provide the first step and an experiential learning space that is critical for many of the new farmer cohorts it serves. Especially for people from urban backgrounds, immigrants, and refugees IFPs have provided a gateway into a sector that has either been closed to them, or has been too risky and costly to even try to enter, thereby bringing more people into the pool and imparting them with agency at the individual level. The hope is that this agency will contribute and lead to the emergence of the next generations of farmers.

These programs, the issue of succession, and new farmers have not attracted policy makers to the extent they should, and subsequently, these programs work in a policy vacuum. Considering that this a non-traditional and out of the box method of training and learning for new farmers, new policy-level mechanisms are required to help these programs succeed in their goals. IFPs have definitely played a crucial role in helping many people consider farming as a vocation, and for many people they have provided the tangible and meaningful first step to their dreams of starting a farm. In the words of Ikerd (2008), "Will these new [American] farmers succeed? No one can

say for sure, but there's no doubt they could succeed. Hope is the possibility that something good could happen" (pg. 44). IFPs help many aspiring farmers realize their hopes of starting a farm. The model has imparted agency at the individual level for new farmers to take the first steps, and it has helped address some of the structural barriers around land and markets, thereby achieving its initial goals. The achievements of the IFPs, given their short lifespan, are noteworthy, but there are some fundamental issues that need to be addressed if IFPs want to create the next generation of farmers. An area that stands out in this research is the homogenous nature of services provided. In light of the diverse range of populations IFPs serve (Cox, 2012), and the wide geographical locations this homogeneity seems out of place. This homogenous nature might indicate that the model may not be responsive to the individual needs of farmers or even a particular cohort of farmers. If IFPs want to fulfill the claim that they are a legitimate and effective pathway into farming, and in creating the next generation of farmers, they have to be far more responsive to local contexts and needs.

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3. New Farmers, New Pathways: A Detailed Study of Select Farm Incubator Programs

3. 1 Preface to Manuscript

This chapter provides a closer look at IFPs, descending from the bird's eye view of the previous chapter to more of a “treetop level” scan of the incubator landscape. The previous chapter provided the reader with a reconnaissance level flyover of the IFP landscape and outlined the general structure and characteristics of incubator programs, highlighting how they create an environment and an opportunity for would-be farmers to experience personal agency in visioning and trialing their farming approach and enterprise aspirations. This chapter comes closer to the ground to examine the fine-grained details of how these programs operate and interact with individuals. In particular, the purpose and focus of this chapter is on program participants—the beginning farmers—and the goal here is to highlight the capabilities they need to possess, and the barriers and challenges they face. This section moves from identifying and defining the nature of the "assisted entry into farming" pathway to what happens internally in the pathway. To achieve this, data on the services and support structures provided by IFPs were collected. The key results are identification of the kinds of services and the role these services play in building the capacity of beginning farmers. This chapter shifts attention from how the programmatic space is structured and sustains itself to what, in both material and experiential terms, this space provides to the beginning farmers it serves. In so doing, this chapter contributes to a better understanding of how IFPs empower beginning farmers in their pathway into farming including overcoming challenges and barriers. This chapter fulfills the requirements of this dissertation’s second objective, which was to examine select case studies and understand the ways in which the services offered by IFP help build the capabilities of beginning farmers.

This portion of the research was informed by the assets mapping elements of the Sustainable Livelihoods Approach (SLA), and I applied this approach on a series of case studies that led to the collection of a range of assets-related data. According to Serrat (2017), SLA "brings attention to bear on the inherent potential of people in terms of their skills, social networks, access to physical and financial resources, and ability to influence core institutions" (pg. 22). This analysis uses SLA to identify the assets that are useful and important in the "assisted entry into farming" pathway.

While the top-level view provided a closer lens, it did not allow this research to study all the IFPs identified in Chapter 1. As the investigation progressed, it became clear that a closer look can only be carried out with a select few case study IFPs. The case studies were each drawn for the characteristics listed in Chapter 2 (pg. 45).

3. 2 Preface References

Serrat, O. (2017). *The Sustainable Livelihoods Approach. Knowledge Solutions*. Singapore.

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3. 3 Introduction and Context

As noted earlier, in the United States and Canada, there is growing concern among policy makers and farm organizations regarding farm succession: simply put, it is not clear where the next generation of farmers will be found. The concern is based on an ageing and declining farmer population (detailed in Chapters 1 and 2). This issue gains further importance in light of the fact that nearly 400 million acres of farmland will change hands in the US in the next 15 to 20 years (Agrarian Trust, 2014; Maximer & Wyant, 2019). Traditional forms of family farm succession do not work anymore due to the high capital value of farms both in terms of land and infrastructure

(Cressman, 2000). The high capital cost of land is proving just as insurmountable for those from outside of farming circles who wish to enter the sector (Ewert, 2012).

There is widespread recognition that farm succession is an issue that must be addressed at the policy levels and this has led to implementation of policy and funding to support new farmers (Mishra, El-Osta, & Shaik, 2010). While these efforts are welcome, the question of who will farm these lands still lingers. Furthermore, the recognition and acknowledgement of challenges associated with farm succession is only part of the problem, with creating pathways for new farmers to move onto the land being the other part. Farm succession is a complex process even within families; when the successor is not from the family, and maybe not even from the farm sector, the complexity becomes even more acute (Cox, 2012). These complexities impart an additional dynamic into an already complex space. Additionally, a critical part of farm succession is land transfer, which, according to Mishra et al. (2010), is “the main component in farm household wealth” (pg. 150). Transferring “land wealth” to an individual outside of the family while keeping it affordable is an aspect that needs to be solved. In a great many cases the value of the farm is the financial foundation upon which farmers’ retirement is made feasible. It is in this context that beginning farmer training programs and in particular incubator farm programs (IFPs) came into existence in the US and Canada.

This dissertation’s overarching goal is to critically assess IFPs as a new farmer support strategy with attention to the enabling and limiting factors as well as demographic and socio-economic variables. The high-level scan that was conducted in the previous chapter highlighted the structure of IFPs and their effectiveness in providing the appropriate type of training and skills building opportunities for aspiring new farmers. These efforts and activities sought to build the capabilities of beginning farmers to overcome the barriers and structural challenges to a successful start-up. It

was not clear, however, in what areas this was done and how. Hence, this chapter takes a close look at five specific IFPs that were selected based on specific representative characteristics (explained in the methods section). In exploring these IFPs, the objective of this chapter is to identify, analyze, and account for the factors that are effective at building the capabilities of beginning farmers. This is done through the analysis of data collected from selected IFPs that is interpreted using a Sustainable Livelihoods assets-based approach. Specifically, this chapter poses the following research questions:

- How do incubator programs help new farmers who access their services? What capacities and capabilities do they build in the beginning farmer?
- What are the challenges and barriers? How do IFPs empower new farmers to build resilience in the face of these challenges?
- Drawing from the data collected, how do IFPs give new farmers the assets to navigate their pathway into farming?

This chapter proceeds with the methods and approach section that starts with an overview of the case study organizations followed by the research approach that outlines the assets framework from the sustainable livelihood approach (SLA). In the findings section, I provide a brief overview of the study organizations, followed by analysis of the data collected on the four asset areas (social, financial, physical, and personal). In the final section I draw from the data collected to better understand how IFPs provide new farmers with the types of assets that help in their pathway into farming.

A key finding of the survey of the IFP at the landscape level (Chapter 2) was the homogenous nature of the services that IFP provided to new farmers. This homogeneity in services was despite the diverse nature of the IFPs in terms of geographical setting (locale) and populations

served. Locally contextual factors and nuances are important in dictating the types of services and supports that these programs offer; and how new farmers utilize these services in these different contexts may shed light on the pathways new farmers take to become established. For example, the California Farm Academy's (CFA) incubator program participants are primarily second career farmers and people from urban areas. The participants have a comparatively high level of education and can draw upon pre-existing social capital and knowledge of local and regional socio-economic contexts that envelop farm and food systems. On the other hand, the Agriculture and Land Based Training Association (ALBA) serves small scale Latino farmworkers and helps them to either move up the ladder in the farms that they work in or move out and start their own farms. The farmworkers are well versed in production techniques but lack the abilities to market and/or do not have the capacity to tap into farming networks. ALBA provides considerable marketing support for their participants. These two programs happen to be situated in the state of California and are barely 200 km apart but offer a very different set of opportunities. Considering cases like these, this chapter will explore in more detail the specific context of five different IFPs as a way of better understanding the interplay between the nature of the IFPs and the specifics of each context.

3.4 Methods and Approach

The following sections of this chapter provide a detailed description of the case study organizations and the methodological approach used to inform data collection and analysis. The rationale in selecting case study methodology is influenced by Yin's (2018) observation that

“the distinctive need for case study arises out of the desire to understand complex social phenomena. Case studies allow you to focus in-depth on a “case” and to retain a holistic real-world perspective” (pg. 5).

I begin by first describing the case study organizations selected for study in this chapter before setting out the methodological approach that was based on the Sustainable Livelihoods Approach (SLA).

Overview of the Case Study Organizations

To explore a broad range of incubator farm models in more detail, five case studies were selected. The characteristics that helped to identify case studies in each category are listed in Table 3. 1:

Table 3.1: IFPs selected as Case Studies

Case Study	Location	Population Served	Geographical Setting	Years in Operation	Land Extent
1. Glynwood	Cold Spring, New York	Other New Farmers	Rural	< 3 years	30 acres & above
2. Cultivating Community	Lewiston, Maine	Immigrants & Refugees	Peri-Urban	>10 years	30 acres & above
3. Horn Farm Center	York, Pennsylvania	Other New Farmers	Urban	3 to 10 years	< 10 acres
4. Prairie Crossing Farm	Grayslake, Illinois	Other New Farmers	Peri-urban	>10 years	30 acres & above
5. ALBA	Salinas, California	Immigrants & Refugees	Rural	> 10 years	30 acres & above

The rationale for selecting the four more situational attributes (population served, setting, age of program, size of land base) was broadly based on physical attributes and IFP circumstances that either influenced or impacted the new farmers that IFPs serve or created potentially limiting factors on what IFPs could provide. IFPs are not differentiated by these four characteristics alone as aspects like production system training and nature of land tenure can also serve as differentiating characteristics. Some of the more precise distinctions are woven into the general characteristics I explore as part of this study. Geographical setting influences who can access the programs as new

farmers who want to start urban farms are not likely to seek out rural incubators. Similarly, larger land extent allows an IFP to either support more new farmers and/or provide increased acreage to the farmer so they can grow their farm enterprise. Years in operation was chosen to gauge the growth in the movement and if possible, tease out the differences between old and new programs. The characteristics emerged from the landscape level survey and were analyzed in detail in Chapter 2 of this dissertation.

As with any case study-based method, it is not possible to fit each case exactly into a category as they defy simplistic categorization, nor do they fit neatly into a category. This is because IFPs are, to some degree at least, idiosyncratic in nature, as they reflect both place-based qualities and the impact of individual actors—in short, people matter. Additionally, they must be flexible to accommodate the needs of the new farmers they serve, hence many IFPs are hybrid in nature. For this research the most prominent characteristic was used to identify which category the case study fit into. Further, there was only one IFP from Canada that was part of this study, which was very small when compared to the US hence this IFP is not included.

Case Study 1: Glynwood

Glynwood, based near the town of Cold Springs (New York), has operated since 1997 and primarily serves the Hudson Valley region. Glynwood is one of the few programs in the incubator farm landscape that owns land; this was because of the largesse of its founder who wanted to

conserve working farmland in the Hudson Valley region. It was also an established working farm before it started the incubator project. Its overall goal is to strengthen the food system in the Hudson River Valley region, and to that end it is also involved in strengthening cooperative marketing structures in the region. In 2018, Glynwood had an operating budget of \$3,941,501 (as per the 2018 annual report), and 19 staff on its team.



Glynwood realised the need for an incubator site as the apprentices that came through their program and other private farms in the region were facing difficulties in finding land to farm, especially for livestock operations. The Hudson Valley region has a thriving apprentice and farm volunteer training space through the Collaborative Regional Alliance for Farm Training (CRAFT) network, but opportunities after this were limited. The program has two sites in the region one at Cold Springs where vegetable and livestock apprentices are located and another in New Paltz which houses the farm business incubator program. The beginning farmer training program began with an apprenticeship in vegetable production and large livestock (beef). This program is one of the few, if not the only one in the beginning farmer space that offers apprenticeships and incubator space for large animals. This is possible because Glynwood has acreage that is only suitable for livestock. While the apprenticeship program has existed for ten years, while the incubator program at the New Paltz farm site is only four years old.

Individual and foundation grants made up 75% of the funding for the programs. This was made possible by Glynwood’s historical connections in the region and its proximity to the city of New York. The remainder of the funding came from federal sources through the Beginning Farmer and Rancher Development Program (BFRDP). This federal program was initiated to support the new farmers starting farm enterprises and was established as a permanent funding stream for this purpose in the 2018 Farm Bill. While Glynwood has a fee structure for the incubator farmers, these revenues barely meet the operational costs of the program. The incubator program has supported nine farm enterprises since its inception in 2014.

Glynwood falls under programs that have more than 30 acres of land. It can also be classified as a rural-based program. It was also selected as it is the only program that focussed on livestock among the selected case studies.

Case Study 2: Cultivating Community

Established in 2001, Cultivating Community initially focused on youth and community gardening in the city of Portland, Maine.

In 2006, it moved to a 32-acre farm in Lewiston, Maine and started an incubator program that primarily serves refugees and immigrants. The state of Maine is unique in the US farming landscape in that small-scale agriculture is still dominant in the state. Cultivating Community’s staff team of 19 is diverse



and reflects the population it serves: nine are dedicated to beginning farmer training/incubator programs and the rest are involved in community gardens, and school and teen programs.

Cultivating Community has a long-standing tradition of supporting organic agriculture with the Maine Organic Farmers and Gardeners Association (MOFGA) being the oldest and largest state-based organic farming association in the country. Further, the state recorded an increase in the number of farmers for the first time albeit by a very small percentage. But the problem of an ageing population persists, resulting in Cultivating Community's efforts to engage with refugees and immigrants to fill this need. This rationale for choosing this program is that it is one of the few that solely supports refugees and immigrants.

Cultivating Community's incubator program is supported by federal government funding (63%), while foundations and local grants make up 32%. Farmer fees account for the small remaining balance of 5%. In 2015 the program supported 13 farm enterprises with six of these farm businesses currently in their sixth year of operation. The absence of a fixed duration of tenure is another unique aspect of this program. It is justified as necessary because refugees and immigrants need more time to learn production techniques, develop markets, and establish networks.

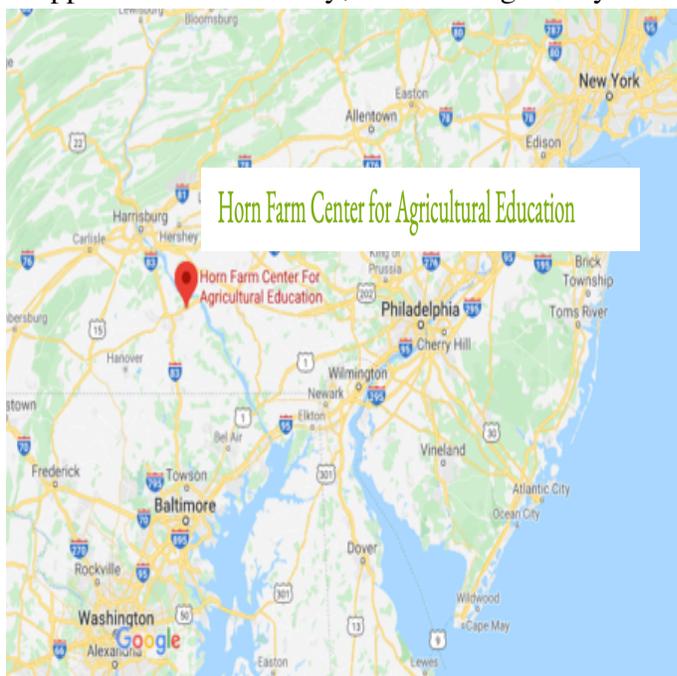
Cultivating Community is categorized under population served and examined as a program that serves refugees and immigrants. Even though it could have been part of other categories its salient feature is the population it serves.

Case Study 3: Horn Farm Center for Agricultural Education

The Horn Farm Center located near York, Pennsylvania, is in its tenth year. The incubator program was established in 2010 on farmland owned by the county of York, which leases it to the Horn Farm Center. The total land extent that the Center leases is 150 acres of which 100 acres are

rented out to a large-scale farmer. In 2015, the program rented 12 acres to new farm enterprises. There is considerable interest in the region in taking up farming as a vocation, mostly among young people from the nearby cities of York and Lancaster; and the Center is also only 50 miles from Baltimore. Horn Farm's total operating budget for 2019 was \$271,830 and it has a total complement of five staff, all of whom are connected to the farmer training/incubator farm program.

The Horn Farm Center has considerable support from the County, which charges only a dollar fee for the 150 acres that are under the Center's control. Also, the citizens of York County took an active part in having the Horn Farm protected and maintained as a working farm. When the county decided to earmark the land for development local resident activists rose up to object the move and eventually the city was made to drop their plans and protect the farmland. The community-based activism and efforts are an indicator that place matters for IFPs; without the local community, Horn Farm would not exist. The incubator program, which is the primary activity of the Center, was established through a Federal government grant (BFRDP). According to the IFP Manager "We are supported by an endowment created by the Horn family and have not been historically grant dependant, and only recently have started accessing grants".



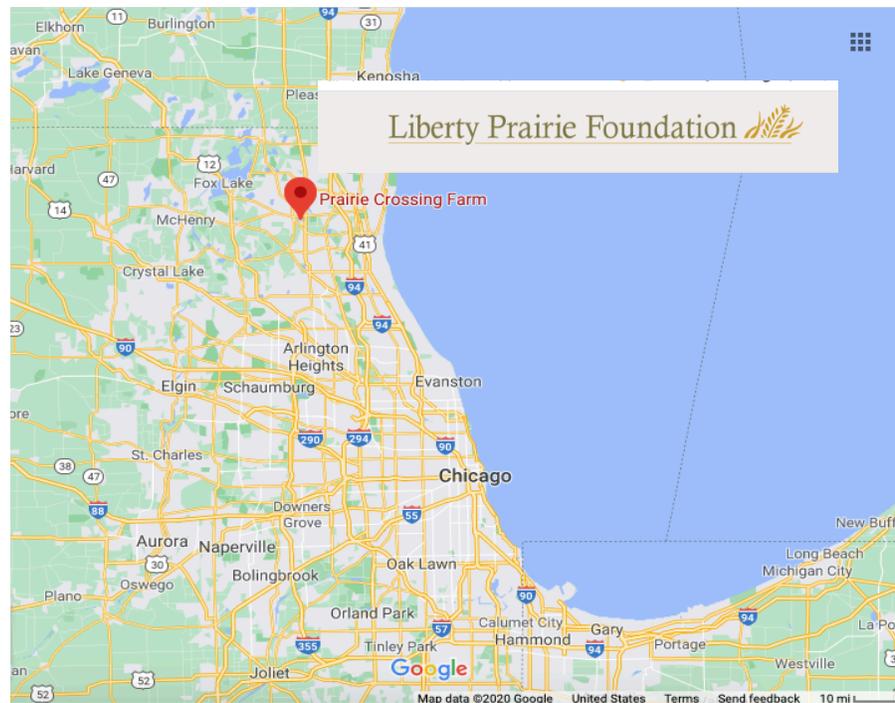
The interviewee for this subject program was the IFP manager, who had been in the position for three and half years but had previously been an incubator farmer himself and prior to that had volunteered at the Center as a committee member. This gave him a rather unique and well-

rounded perspective of the IFP from his different experiences of the space—as a user, as a manager and an involved citizen. Horn Farm Center is also part the North East Regional Incubators working group that includes ten other IFPs from the region. In 2015, the program provided land and support to six farm enterprises. As in the other case studies the Center has some overlapping characteristics, but its salient feature is that it mostly focuses on supporting young people from urban areas.

Case Study 4: Prairie Crossing Farm Business Development Incubator Program

This is a program of the Liberty Prairie Foundation, which is situated in Grayslake, Illinois,

50 miles away from Chicago, the third largest city in the US. The foundation is involved in some food and farming related initiatives in the Chicago region, including land access, community food systems, and community gardens



(LBF, 2020). Similar to the rest of the case studies, Prairie Crossing has a couple of unique aspects, one of which is that it is one of earliest “agri-hood” models in the US, wherein farmland is intentionally integrated as part of an urban housing development. This concept is gaining widespread recognition across the US. This exposure has promoted the Urban Land Institute³ to

³ Urban Land Institute (ULI) is the oldest and largest network of cross-disciplinary real estate and land use experts in the world. ULI’s Food and Real Estate Project explores the mutually beneficial relationship between food-based amenities—such as working farms, community gardens, food halls, restaurants, and grocery stores—and real estate. It highlights how the growing interest in and awareness of fresh, local food is spurring innovation in development projects.

initiate discussion forums to analyze and understand the concept so that it stays true to type. Prairie Crossing is an active participant in this process. It is probably the only one that houses an IFP within this model and has done so for many years. Prairie Cross farm has ten staff members six of whom are dedicated to farmer training/incubator program.

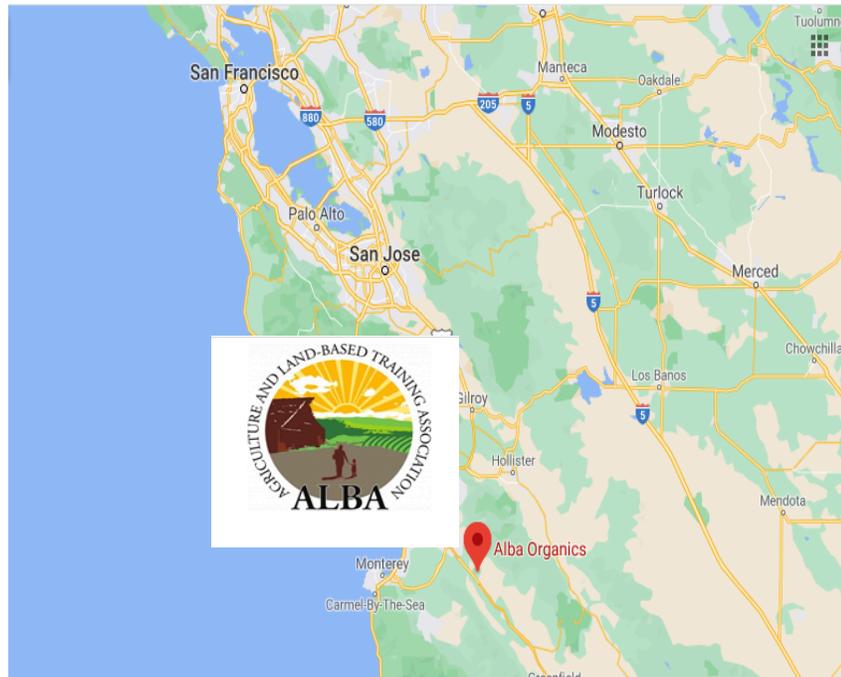
Prairie Crossing is also one of the few programs that had its own core funding for planning and establishment of the farm incubator. This was made possible when the Liberty Prairie Foundation allocated 5% of the home sale proceeds to developing and sustaining the working farmlands. Liberty Prairie Foundation is a local non-profit that promotes the integration of natural ecosystems and the human communities that these ecosystems support. The program raises 35% of its operational costs from farmer fees and 20% from private foundation grants. The remainder is drawn from the Foundation's core funding. Prairie Crossing encourages new farmers to explore new models of land access and are willing to work beyond the traditional land ownership model. The program director was interviewed for the purpose of this study.

The program has access to 55 acres of land of which only 11 acres is currently being used. It had five farm enterprises in 2015. A portion of the 50 acres is leased to a graduate from the IFP. Prairie Crossing is classified under the peri-urban farm category for the purpose of this study.

Case Study 5: Agriculture and Land-Based Training Association (ALBA)

The Agriculture and Land-Based Training Association (ALBA), established in 1972, is one of the earliest incubator programs in the country. ALBA is in Salinas Valley, California, a predominantly vegetable growing region also called the "salad bowl of the world." ALBA had its

beginnings as the Central Coast Committee Cooperative Extension Center that was established on a 110-acre farm in Salinas County, California with the aim of helping small-scale Latino farmers form cooperatives and access the marketplace. In 1985, the Association for Community-Based Education in Washington, DC founded the Rural



Development Center (RDC) on the farm and pioneered the "Farmworker to Farmers" concept to train farmworkers to become farm managers or even become farmers themselves. The RDC also initiated women's community gardens and farm field days. In 2001, the Center was transformed into a locally governed not-for-profit called the Agricultural and Land-Based Training Association (ALBA). ALBA built on and expanded the programs started by RDC, these included an IFP and a community college accredited Small Farm Education Program.

ALBA Organics was started as an aggregation and distribution facility that helped ALBA's incubator program farmers and local farmers to access San Francisco Bay area markets. ALBA's website states that "serving a primarily Latino audience, ALBA's work is grounded in the belief that for limited-resource and aspiring farmers to gain a foothold in California's highly competitive farm sector, they must have access to information, operating capital, and opportunities to access land" (ALBA, 2018). While the initial goal was to help Latino farmers access markets, they soon

realized that there was a role for them to play in supporting beginning farmers who, regardless of specific ethnicity, were collectively members of a racialized non-European community that is acknowledged to be much under-represented in the commercial farm sector in not just this region, but throughout the US and Canada.

The funding for the ALBA program is primarily through the income from ALBA Organics (80%). ALBA Organics aggregates organic produce from the incubator program farmers and other small farms in the region and supplies it to corporate buyers in the San Francisco Bay area. Federal government grants and corporate grants account for 38% of ALBA's farmer training related operating revenue, and the rest comes from fees paid from the farmers in the incubator program. Marketing support for the incubator participants is crucial for this program as the farm workers have few links to the wider community in the region, hence ALBA provides this support.

The Education Program Director at ALBA was interviewed for this research. A native of California, the Director was also fluent in Spanish which is important considering the population that ALBA serves. The Director has a master's degree in agriculture with a focus on crop science, and 10 years of experience in organic production, agriculture education, and project management. When asked about marketing, the Director stated that "it is very important, and we provide support through ALBA organics. Also, the wholesale market demands higher quality which helps our farmers to aim for good standards. Farmers markets are not ideal for our farmers".

ALBA owns 90 acres of land of which 87 acres are currently rented out to incubator farmers. ALBA is classified under the rural farm category.

Research Approach: The Sustainable Livelihoods' Assets Based Framework

Most, if not all, beginning farmer training programs undertaken by the five case study organizations seek to build the capabilities and capacity of aspiring farmers. To do this, the programs typically focus on farm-related aspects like ensuring farmers have access to tools, land or obtain help with production, financing, and marketing (see previous chapter). There is a need to understand these different and interrelated dimensions, and especially to appreciate how they may contribute to a new farmer's ability to make a living from a new farm enterprise. The Sustainable Livelihoods Approach (SLA) provides an appropriate lens through which to explore such issues. SLA has, over the past thirty years, become established as an assets and capabilities-based approach to livelihood development. In particular, a Sustainable Livelihood is defined by Chambers & Conway (1992) as that which “comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living” (pg. 6).

SLA became a significant paradigm in development studies in the 1990s in that it moved development experts away from “single-sector approaches to solving complex rural development problems” by forcing people working to help rural populations understand the multi-faceted ways that rural residents deployed a range of different “types” of capital (e.g. the natural capital of their farms or the social capital of the family) to maintain a standard of living (Scoones, 2009). Vulnerability contexts (shocks, trends), policy, and institutions are the other important parts of the SLA as livelihoods are impacted by these aspects (Rakodi, 2014).

For the purposes of this thesis, given its central focus on the IFP as a farmer training concept and method, I draw only from the capital/asset component of SLA; while SLA's focus on vulnerability and institutions are important, they are beyond the scope of the present study. The assets that are part of this approach are: natural, human, financial, physical, personal and social

(Momentum, 2012; Serrat, 2017); in this study, I combine natural capital (land) with physical (infrastructure and equipment) because in this context access to land and infrastructure come with somewhat similar sets of challenges. It is presumed that individuals and communities possess various forms of these assets and building or strengthening these assets enable individuals and communities to thrive. The assets component of the SLA is systemic: it emphasizes that the five asset categories are affected by contextual and institutional dimensions and are in turn contributors to resilience in the face of emerging stress – so common to farming. This approach is widely used in the global south to understand and implement rural livelihood improvement and poverty reduction strategies (Scoones, 2009). It has been sparingly used in the community development initiatives in the US and Canada with some degree of success (Foundation, 2002; Momentum, 2012; Tamarack, n.d.).

According to Morse & McNamara (2013), the five asset groups “are not just ‘things’ that go into a production process but also a basis for power to act and ultimately to bring about change in society” (pg. 30). Physical and productive assets consist of infrastructure, tools and technology, and natural assets include land, water, environmental resources. For this research, these two assets are combined into one: Physical. While environmental factors are important, these do not take centerstage in the US and Canada in contributing to livelihoods. Social capital here is predominantly centered around bonding social capital. New farmers and IFPs tend to establish relationships with individuals (farmers) and organisations that are part of the sustainable agriculture movement. This does not mean that bridging social capital does not exist, but that during the initial stages of the new farmer pathway bonding social capital is widely prevalent (Brian, Florida, Stolarick, & Rousseau, 2019). Unger et al. (2011) “define human capital as skills and knowledge that individuals acquire through investments in schooling, on-the-job training, and

other types of experiences” (pg. 343). Human assets contribute to the success and resilience of any enterprise especially at the start up stage, and this is true for farming too. In addition to assessing knowledge and skills, this research examined motivation and drive as they are important personal characteristics that help not only achieve what one seeks but also to face the challenges that are inherent at this stage.

The other two central concepts of SLA are vulnerability context, institutions and policies. These concepts have a profound influence on a new farmer’s pathway into farming, especially the latter, and their impact has been explored and reported in agricultural research for many years in academic circles, especially in the field of political economy of agriculture. While the role of institution and policy are mentioned throughout this dissertation they are not dealt with in detail as they are not within the scope of this research.

In summary, this study uses an adapted version of the SLA by focusing on those assets that are relevant in the context of beginning farmers: financial, personal, social, and physical. Details of the assets are listed below:

- Financial Assets—consists of the resources that help people choose different types of livelihood options, and includes aspects like income/wages (Serrat, 2017), savings, access to credit, accounting knowledge, and access to financial institutions (Rakodi, 2014: pg. 11);
- Social Assets—are the “social resources (networks, membership of groups, relationships of trust and reciprocity, access to wider institutions of society) on which people draw in pursuit of livelihoods” (Rakodi, 2014: pg. 11);

- Human Assets (Personal/Individual) —some examples of human assets according to Serrat (2017) are, “health, nutrition, education, knowledge and skills, capacity to work, capacity to adapt” (pg. 23);
- Physical Assets—consists of “infrastructure (transport, roads, vehicles, secure shelter and buildings, water supply and sanitation, energy, communication), tools and technology (tools and equipment for production, seed, fertilizer, pesticides, traditional technology)” (Serrat, 2017: pg. 23).

Data Collection

I conducted in person interviews with IFP staff who were directly involved with the incubator programs. The staff included directors and program managers, and all of them had either been involved in the program from its inception and/or were managing the day-to-day operations of the incubator farms. Using the four different types of assets as a framework, interview data were collected specifically to assess how the selected IFPs structured their activities to enable would-be farmers to build their own assets. In this context, it is hypothesized that all programs offered support services that help to build four major assets that a person aspiring to become a farmer must possess. A subset of questions under these assets were used to collect data on the importance of these assets and how programs built or augmented them in beginning farmers in their programs. These questions were not rigid in structure but contributed to guide and open dialogue, thereby providing a richer data set. The assets along with the guiding questions are listed below:

Financial Assets

- Do you provide grants and/or loans to beginning farmers? Do you think this support is important, if yes, can you explain how?

- Do you provide access to knowledge of where to access start-up financial capital?
- Do you provide business-planning resources for new farmers? Why do you think a farm business plan is important for a new farmer?
- Do you help new farmers who participated in the incubator farm obtain the capacity to approach lending institutions for capital to start their own farm enterprises?

Social Assets

- How does the incubator farm provide or build a supportive community for new farmers? Can you briefly provide examples?
- To what extent does your organization have a network of mentors to refer the new farmers to for advice and guidance?
- Is there a peer group that the organization provides to support new farmers? Please explain if you think peer to peer support is important for new farmers and how?
- Does your organization provide participant farmers with cooperative structures—in marketing, managing equipment etc.?
- To what extent do you encourage farmer-to-farmer knowledge transfer on the farm? Is it a structured and informal process? What is valuable about this process?

Human Assets (Personal/Individual)

- Do you assess motivation and confidence levels of participant farmers? If yes how? Do you think this is important and if so, why?
- Do you provide coaching and skills building opportunities? Please provide details of these opportunities.
- Do participant farmers have access to training and resources that help to build their capacity? Can you describe how you do this?

- To what extent do you think that participant farmers have the confidence to start their own enterprises at the end of their tenure on the incubator farm? How do you assess this aspect?

Physical/Productive Assets

- What is the extent of land that you provide participant farmers (maximum and minimum)?
- What is the length of land tenure you offer to participant farmers?
- List the equipment you provide participant farmers and whether you also provide training to operate the equipment.
- Do you provide storage, cooler, and greenhouse space for participant farmers?
- Do participant farmers get assistance to buy seeds, tools, and equipment?
- Do you assist participant farmers with marketing their produce, if yes, how? (Wholesale, retail, other market linkages). Is it critical for the organization to provide this support or should farmers develop their own markets? Please explain why.

3. 5 Findings

This section analyzes and discusses the data collected through the interviews conducted with the staff of the case study organizations. The emphasis is on the four asset areas: financial, human, social, and physical. The interview data were also used to identify barriers and challenges that new farmers confront. SLA does not name barriers and challenges explicitly, but it is encompassed in the vulnerability and institutional context.

Assets

This section discusses the four asset categories and how the case study organisation helped to build capacity in these assets among their participants farmers.

Financial Assets

The data indicates that, as a group, the IFPs do not provide direct financial assistance in the form of loans and/or grants to participant farmers. Given the financial foundation and operating cashflow situation of most IFPs, this was not an especially surprising situation. However, this lack of direct financial assistance is attributable to lack of capacity for the IFP and not a rejection of the value of start-up capital. According to one program manager “I think it [providing access to grants/loans] is important, just looking at the participants we have this year, and those coming in next year start-up capital is necessary”. While another program’s director said, “I do think financial support at the start-up stage is important, one should not start the business without access to capital”. Despite understanding its importance, the example IFPs did not provide any substantial grants, making participation in programs, at least in part, a ‘pay to play’ venture. While the prevailing scarcity of funds was noted explicitly, subsequent elaborations revealed that operational ‘principles’ were also invoked. For instance, a representative for one organization said “We don't provide grants for lack of resources, [but] even if we had the resources, we would not give grants. We would probably give low-interest loans that would be repaid as they leave the program”. Overall, this quotation hints that loans are seen more favourably than grants, and one of the case programs is in the processes of setting up, with a partner organization, low-interest loans for their participant farmers. A different organization, which works with refugees and immigrants, felt it was helpful to support new farmers financially through helping them purchase inputs and seeds at the start of the season, but that these should be loans rather than grants or subsidies. The fourth organization pointed out that some assistance can be provided during the initial stages to help new farmers purchase equipment and tools. They currently provide this support as a loan, which is repaid when the beginning farmers supply their produce to the CSA program that the organization manages. One of the program managers pointed out the importance of tracking financial data and

stated, “We do financial reviews with the farmers each year and so we track and use it a little bit to track progress”.

When asked if they received grants or funding from the governments (local or federal) to pass on to their participants, the answer was ‘no’ from all the studied organizations. The responses to the importance ranged from government needs to support to not critical. One IFP pointed out that it was important to support programs rather than provide direct funding to beginning farmers. Another stated that it is important but should be targeted to what is necessary at any given stage. All organizations help their beginning farmers to connect to financial institutions that provide financial support for them either when they are in the program or when they leave. These financial institutions included non-traditional entities like Slow Money, Open Space Institute and traditional lenders like Farm Service Agencies and Farm Credit.

Although none of the organizations provided much direct financial assistance, they did invest considerable effort into training new farmers on topics such as business planning. More specifically, the organizations provided the knowledge and resources to the program participants to formulate their business plans. All organizations also require business plans or a simplified version of it as part of the application process to the incubator programs. A couple of the case study organizations partner with experts to provide this service while others do it in house. IFP staff pointed out that it was difficult to get beginning farmers to write good business plans, especially among the immigrant and refugee communities. According to the Education and Marketing manager at one organization, “I call it ‘inshallah’⁴ farming, people say why would I even make a plan because only God knows what the outcome is going to be”. Despite these challenges, all programs stressed that they use yearly gross income figures to assess the progress

⁴ Inshallah is an Arabic word that means if Allah (God) wills

of participant farmers. This is an important metric that is used to gauge the growth or lack thereof of their participants. Finally, all programs provide some level of support to farmers who have moved on or graduated from the program. This takes the form of reviewing their business plans, continued marketing support and connecting them to lenders.

Overall, the data collected paint a consistent picture with regards to the ability of the case study organizations to help new farmers gain access to financial assets—in the form of building capacity and efficacy in necessary work of engaging actors in the financial realm – and eventually the world of marketing. There are possibilities within the existing financial structures to access the necessary finances for their enterprises. The case studies, by focusing on business planning, help to build up their capacity and empower new farmers to approach financial institutions for support.

At the heart of the findings is a disconnect in that while all the case study organisations asserted that building financial assets is vital in the development and eventual success of a beginning farmer, none of the organizations provided any direct financial assistance (in the form of loans or grants) to their participant farmers. Considering that access to finances is a major barrier (Figure 1) IFPs should address this shortcoming.

Social Assets

Social assets are important in a beginning farmer's entry into the agriculture sector, especially when the person is not connected (or lacks access) to the traditional support networks like farmer associations, 4-H, and farm extension agencies. For a beginning farmer who has little or no knowledge of the sector and thereby minimal social capital, even the simplest of tasks, such as finding a good tractor mechanic, can seem daunting. When posed questions around how each organization helped beginning farmers develop supportive networks and communities all organizations stressed how important this aspect is in their programs. All case study organizations

pointed out that being with a like-minded group is critical in the beginning farmers journey into farming. As the director of one organization stated:

“Within this community, it is very helpful that people are here together and there is a lot of shared learning, and there are a lot of ways farmers mitigate one and another’s risks by helping one another, it can be as simple as somebody not having a crop which they need at the farmers’ market to bring in customers and they will buy it from their neighbor”.

In contrast to the financial asset group, which is structured and intentional, a supportive community is formed organically. None of the programs set out to build the social capacity of beginning farmers as an explicit goal. Once the program was off the ground it was easy for staff to observe the formation of supportive groups and linkages between the participant farmers who shared the space. Program managers indicated that building community, and thereby social capital, is an important element to supporting new farmers, and the managers realised and appreciated this fact the more they interacted with new farmers and as the program matured rather than during the program’s inception stages. All the case study programs are now undertaking activities that help to grow and strengthen this asset. These include peer to peer learning sessions, monthly get-togethers, and group meetings. Peer to peer networks provide new farmers a sense of belonging to a wider network that both supports them and gives them agency.

While not without its challenges, this asset is still initiated through informal structures, and an observation by the education and marketing manager at one case study organization gives an indication of this:

“In terms of building a supportive community here it has always been a really challenging thing, there is lot of layers of competition and distrust but also a really strong community, someone a couple of years ago ended up in the ICU/hospital for a month and people just

banded together and planted her field and took care of it for a month when she was in hospital, they supported her business which otherwise they were in competition with”.

All the case study organizations had a network of mentor farmers to support their participants (bridging social capital). The importance of this network, whether it was formal or informal was stressed during the interviews. Interviewees identified good mentors as those who had sufficient experience upon which to draw (ten years was a milestone for some), the time to spare during the growing season and the ability (and inclination) to be an effective communicator, teacher and mentor. Peer to peer learning was also considered important (bonding social), and except for ALBA, all other programs let it happen informally. Generally, however, the case study organizations did little to proactively form the sort of formal cooperative structures that are common ways of building social capital in established farm communities. In few cases, some informal cooperation happened mostly around marketing. All the organisations mentioned that farmer to farmer knowledge transfer was critical in their space and in most cases happened informally.

The peer to peer and mentor networks that all case study organisations produced either formally or informally helped to create a sense of belonging through the ability to engage with peers. The knowledge beginning farmers gain from their peers and mentors who are part of the network serves to further strengthen their agency. This asset is also critical to the success of the new farmer. In helping to build this asset IFPs have a substantial role in creating the next generation of farmers.

Human Asset (Personal/Individual)

The interviewees stated that motivation and confidence were important for beginning farmers. Multiple methods were used to gauge this in participants, which included a deeper look

at their past experience, references from farmers that they had worked with, in depth interviews, intuition, and asking them to attend classes before entry into the program. A couple of organizations observed that it was difficult to assess this at the time they applied, but they got a better sense of motivation and confidence levels in subsequent years. All case study organizations spend quality one on one sessions with the beginning farmer applicants, and as succinctly put by an IFP manager at one of the organizations:

“Part of it is gut feeling when talking to them and part of it is really drilling into the deeper questions, finding out what level of experience they really have and if it reflects in what they’ve written on the application. It will be hard for me to think about bringing in somebody without a face-to-face interview”.

Ample opportunities to build skills were provided for the participant farmers as well as individualized coaching events. Participants were also encouraged to attend workshops and courses that help to build their capacity in the different aspects of a farm business. In addition, as noted in the section on financial assets, IFPs provided training to participants on how to access loans and approach financial institutions. For instance, one IFP made it mandatory to attend workshops in the region. One on one sessions with the farm manager, in house workshops, and courses are used to build this asset in participants. Only one organization, Prairie Crossing, did not do much in this area apart from stressing the need to build skills and left it up to the participant farmer’s own initiative to do so.

When asked about the confidence level that their participants had to start their own farm enterprise’s upon completion of the program, the case study findings presented varied results. One organization pointed out that it was not very high, and their participants (refugees and immigrants) required help in the transition process. Another IFP had not reached this point yet as they were

only in their third year at the time of the interview. The older organizations said that the confidence level among their participants is high as many had concrete business ideas or were in the process of setting up their enterprises. One staff member pointed out that:

“When they come here, they have started their own enterprise. From day one, we are talking about building their enterprise. We are not a training organization; we are a facilitating organization that helps to build farm enterprises. The idea is theirs and they own it”.

This asset category encompasses personal attributes like confidence, skills, abilities and education that many new farmers possess; this asset also contributes to building the critically important, and often lacking, confidence and ability to engage, both within the IFP program and more importantly in the wider environment with the many and varied institutions, actors and policy instruments that surround agriculture. In concert with the sense of membership or ‘belonging’ to a farmer cohort with shared values and emerging abilities, this growth of personal capacity holds the promise of creating agency—or so it is hoped. Overall, the case study organisations also valued these assets and tried to assess them in individual new farmers. Unlike financial assets where organisations are instrumental in initiating and building financial capabilities, IFPs only help to augment human assets with more of an organic approach rather than structured. In other words, the IFPs studied as part of this chapter provide the environment for the human assets of the participants to grow and strengthen on their own.

Physical Assets

As noted in the introduction (see pg. 11), one of the biggest barriers facing new farmers is access to land. Hence, it is unsurprising that helping new farmers overcome this problem is one of the main aims of IFPs. The case organisations working with immigrants and refugees listed access to land as one of the topmost barriers that beginning farmers in their region face. According to the

Director of one organization, “access to land and access to capital are the two top barriers. We definitely help to overcome these barriers”. Another staff member of the same organization added that access to land is a barrier but pointed out that “becoming more comfortable with new models of land access and being willing to work beyond the traditional land ownership” were also important aspects. The fact that all the case study organisations were land based helped to address the land access barrier. One went even further by helping their participants lease or purchase land after their tenure in the program was over. The staff in this organisation stated that:

“We are providing a pathway to long-term land access because OSI (Open Space Institute) and other land entities are interested in our program graduates. OSI has been piloting some lease to own opportunities and some New York City farmland investors are interested in partnering with some well vetted beginning farmers”.

Specifically, the case study organizations provided anywhere from an eighth of an acre to five acres of land to their participant farmers for up to five years. Similarly, tenure in the program varied from no tenure limit (Cultivating Community) to five years (Horn Farm and Prairie Crossing). In the process of providing access to land, IFPs address a structural barrier that all new farmers face. Small parcels of land (5 acres and below) are very difficult to find in the farming landscape in the US and Canada, and for new farmers starting at a smaller scale makes the most sense. Farm consolidation to a large extent is instrumental in creating this barrier. Land is fundamental to farming and having access to it gives the new farmer a tangible sense of agency.

In addition to giving new farmers access to land, one of the key roles of the IFPs was to help new farmers learn about and obtain access to farm equipment. Programs spent considerable financial resources to put in place equipment and infrastructure to support their participant farmers. Farmers had access to tractors, walk behind tractors (BCS), various tilling equipment, dry storage

space, cooler space, greenhouse space, and wash and pack stations. Training was also provided on the use of tractors and BCS. Putting the equipment in place is one thing but managing and maintaining it effectively among a group of beginning farmers is the more difficult challenge. IFPs try to do this by organising meetings at the beginning of the year to establish ground rules, thereby giving the farmers a sense of ownership and responsibility over the process. According to one program manager they “have a range of tractors and equipment and we train them (beginning farmers) too”. Another program staff stated, “we do not teach people how to use a tractor [sic] but we have a tractor and people pay for tractor services”. Organizations also require participants to take tractor safety courses to help them operate it safely. Generally, farmers are trained and allowed to use smaller mechanical tools like the walk behind tractor (BCS).

One of the aims of this study was to gauge how important it is to help beginning farmers purchase inputs and find markets. The answer to the former is that very little was done in this regard even for the refugee cohort. Those interviewed pointed out that it was not cost effective for the organisations to do this, because it is time and resource intensive, whereas asking participant farmers to do it on their own helped to build their capacity and networks. All organizations provided some level of marketing support that included either managing market channels themselves (CSA, farm stands) or facilitating market connections. Considerable support was provided in marketing by Cultivating Community and ALBA through marketing outlets that they managed and that their farmers could readily sell into. Horn Farm, Glynwood and Prairie Crossing provided support by way of directing or connecting them to the networks but did not actively manage any market outlets. According to one Program Manager “We are the only market (referring to CSA and Farm stands) for some people (farmers), because farmers markets are completely saturated in this area”.

Assets Comparisons Across Case Study Organizations

This section provides a snapshot of the efforts and activities case study organisations undertook in the different asset areas. An organization wide comparison (Table 3.2) highlights the similarities and differences in how IFPs build the respective assets in new farmers.

Table 3.2: Snapshot of Asset Comparisons Across Case Studies

Assets	Cultivating Community	Glynwood	Prairie Crossing	ALBA	Horn Farm Center
Financial	Basic training Links to Gov. grants	Facilitate connection to loans	Institutional links	Only financial training	Only financial training
Social	Internal networks Mentorship	Mentor network Peer learning network	Peer network Mentor network	Links with farmers Cohort meetings Peer to peer learning	Peer to peer Mentor network Coop. farm stand
Human ⁵ Skills/ Training/ Confidence	Tractor training Financial literacy sessions Workshops	Tractor training Safety courses Business training Skills assessment	Business training Tractor and equipment training Year-end reviews	1:1 coaching session Tractor and equipment training Budgeting skills Business planning Mandatory skills building workshops	Business planning Tractor training In house workshops Financial reviews
Physical	Land Tractor and equipment Greenhouse Provide market channels	Land Tractor and equipment Truck Cooler Dry storage Livestock barn	Land Tractor and equipment Greenhouse Cooler Dry storage	Land Tractor and equipment Cooler Supported marketing	Land Tractor and equipment Barn Cooler Greenhouse

⁵ In the SLA human capital is denoted as education and skills, in this research confidence level is also used as an indicator.

As Table 3.2 shows, there are many similarities across organisations in how they approach asset-building efforts in all the asset categories. Some of the common similarities are land, tractors and equipment, business planning and financial literacy, mentor network and skills-building workshops. On the other hand, in terms of financial assets, the support varied across organisations with two providing loans and cash advances, and one not providing any support. This is revealing because access to finances, along with land, are two of the most significant barriers new farmers face when trying to enter the farm sector and some IFPs put considerable effort into them. The variation in the financial asset category may be due to the lack of resources and not the will. During the interviews, IFP staff reported that they spend considerable amounts of staff time finding the funding to keep their non-programmatic staff (admin and directors) in place due, in part, to the fact that many funders refused to provide adequate funding for these critical parts of the organisation. Hence, it is difficult to imagine that IFPs can provide any financial resources to support new farmers beyond basic financial training. By contrast, many IFPs only lease land, and given the high and rapidly rising cost of purchase, making it affordable rather than buying it, because without land, an IFP cannot exist. The challenges around finances and land that IFPs face echo the same realities that the farm sector faced for decades. As the IFP model matures, there is the danger that these programs might replicate these trends. Confidence and motivation are ranked as very important by 75% of the interviewees as was budgeting skills. Financial and human assets were also ranked equally as very important.

Overall, programs kept track of their participant farmers after their tenure in the program was over. Two organisations had still not reached the stage wherein their farmers had to leave, while one pointed out that 70% of their participants were still farming. Program staff also monitored and kept track of those who dropped out of the program. Family support,

entrepreneurship, physical capability, good mentors, good decision-making skills, clear goals and focus, personal drive and a love for farming were listed as characteristics that they observed in successful program participants. Success in this instance was defined as those who had gone on to start their own farms. On the other hand, improper time and financial management, poor planning, lack of family or partner support and personal/family circumstances contribute to participants leaving the program.

3.6 Discussion

In this section, I summarise the key findings in the four asset areas, the barriers and challenges new farmers face, and contrast the findings with the existing literature on farmer training and IFPs. I also explore how IFPs help to empower new farmers. Finally, I summarise how the assets and approaches taken by IFPs to build these assets aid in a new farmer's pathway into farming.

The program staff interviewed as part of this study all concurred that the four assets adequately represented the skills and knowledge that beginning farmers should possess and contributed to their eventual success as a farmer. As such, the findings presented in the previous section indicate that all the case study organisations provided their new farmer participants with access to land, infrastructure, and equipment. Access to land and infrastructure is one of the top two barriers new farmers face when starting out their farms. This aspect is well documented in the beginning farmer literature (Berman, 2011; Naomi, 2018; Overton, 2014) and is also one of the primary reasons for the existence IFPs. In this respect, many IFPs fulfill their mandate but must not stop there as land alone does not create a new farmer. There is a need to impart knowledge and skills in the different aspects of farming that are as important as accessing land.

Using SLA's assets-based approach, this study identified four asset areas in which IFPs built the capacity and capability of farmers. The four asset categories were derived from the analysis of the services provided both in the case study organisations and the broader IFP space. The interviews and analysis of the data confirmed the appropriateness of the asset categories – physical, social, financial, and human. These assets also aligned with many of the aspects presented in the conceptual framework in Chapter 1 (Figures 1.1 and 1.2). This is the first time that the IFPs have been analysed using an assets-based lens. The existing studies and the grey literature have explored this topic in terms of agroecological systems (Laforge & McLachlan, 2018), community of practice (Overton, 2014), structural barriers and challenges faced (Calo et al., 2016; Carlisle et al., 2019; Naomi, 2018), and possible succession pathways.

All the case study organizations provide services to help build these assets in the new farmers they serve. Table 3.2 lists the activities that IFPs undertake to build these assets in beginning farmers, and a scan of the table shows that the activities were quite homogenous across all case study IFPs. While there are numerous important considerations, it is the capabilities of new farmers that is most critical in their pathway to becoming the next generation of farmers. Through the findings, it also emerged that new farmers came with some skills, and capabilities, and high levels of confidence. Furthermore, IFPs helped to transfer and build on these skills and confidence levels. This is contrary to the conclusion of Calo et al. (2016), who argued that IFPs work on a “knowledge deficit approach” and is more in line with Milone & Ventura's (2019) observations that new farmers are creative, innovative and have the ability to collaborate. In providing new farmers with one on one support, workshops, mentors and peer to peer connection, IFPs help to empower and provide agency to new farmers. Gambardella, Panico, & Valentini (2015), in their conclusion about incentives that help to build human capital, point out that “knowledge workers obtain

personal benefits when they can make decisions that favor the pursuit of their own goals” (pg. 49). The IFP model provides new farmers with autonomy and decision-making space based on their farming goals, empowers farmers to human capital, and imparts them with agency to take the next steps in their farming journey.

Overall, it was found that one of IFPs’ main contributions to a new farmer’s ‘social assets portfolio’ was the creation of social networks that support and are critical to establishing a sense of shared vision and the confidence to proceed knowing that those values and goals resonate with the aspirations of other like-minded aspiring farmers. The importance of this is well captured by Laforge & Levkoe (2018) who, based on their research on Everdale (a farmer training program in Canada) state that “sometimes, by simply knowing that they have a community of peers, participants felt they could engage in agroecology despite the barriers caused by a lack of policy support, limited training opportunities, financial risk, and socio-cultural pressures” (pg. 13).

The barriers and challenges that new farmers face have been well documented and findings of this research reinforced the observations of these earlier studies (Ewert, 2012; Katchova & Ahearn, 2014; Niewolny & Lillard, 2010; Overton, 2014). As expected, access to land is the foremost barrier and challenge that new farmers face. It is a barrier because the steady consolidation of farms has led, in many productive agricultural regions, to the farming landscape being dominated by large holdings. The farms that new farmers aspire to create are not large in scale, and even if they did aspire to reach that scale it is not, realistically, where many of them can begin their farming journey. The reasons for this pervasive consolidation were touched on in earlier sections of this dissertation (e.g. see Chapter 1). This is a structural issue that the farm sector needs to confront and solve, if and as it aspires to revive the farmer population. IFPs, in providing the physical assets, do help new farmers to overcome this structural barrier but it is only short lived. New farmers,

once their tenure in the program is completed, still have to face this barrier (Calo et al., 2016). The “after the incubator” question looms large in this space and is one which IFPs struggle with, but is this IFPs problem alone, or does society at large need to play a role in the transition from start-up to full-fledged farmer (Ruhf, 2013)?

Access to markets and finances are the other challenge (in many forms) that new farmers face. Farmers markets and Community Supported Agriculture (CSA) have been the two primary channels that helped many new farmers start and establish their businesses. These markets, along with the growth in the local food movement, have been lifesavers for these farmers. Among the case study organisations, the two that serve immigrants and refugees provide extensive market support when compared to the others. IFPs, whether directly (managing markets) or indirectly (marketing training and workshops), help new farmers to gain the confidence to take advantage of new market opportunities and to navigate existing ones.

All the organisations felt that providing financial support as grants/subsidies was not important but if provided it should be in the form a loan. This aspect is in stark contrast to the existing farm sector, especially commodity crops (corn, soybean, wheat) that are highly dependent on federal government subsidies (Edwards, 2018). There is also a move to support and provide funding for new farmers, and programs that work with them, especially at the start up stages (1 to 10 years). Some of these initiatives are USDA’s Beginning Farmer and Rancher Development Program, Farmstart LLP, Financial Support for Aspiring Farmers (Quebec, Canada), and Farm Credit’s Young, Beginning, and Small Producers program. These efforts are much needed but according to the program managers in this study it is important not to create a dependency model in the name of support. Considerable effort is being put into building this asset among all the IFPs. These efforts help to build an individual’s capability and confidence to approach traditional

lending institutions. Access to finances is a barrier for many new farmers, but unlike land, it is not structural in nature. Several traditional lending institutions, like Farm Credit are initiating new and beginning farmer programs in their portfolio, however, much more needs to be done in this space considering the rising cost of land. At the heart of the findings is a disconnect in that while all the case study organisations asserted that building financial assets is vital in the development and eventual success of a beginning farmer, none of the organizations provided any direct financial assistance (in the form of loans or grants) to their participant farmers.

An underlying thread in all IFPs, and in the farmer training landscape, is whether IFP participants are experiencing any appreciable success, even at a modest level, in creating the next generation of farmers (farms, regardless of size, that launch and sustain). When posed the question, “what were the distinguishing characteristics that separated those that went on to start their farms from those that drop out of the program?”, apart from the known factors like adequate production skills, financial acumen, and time management, program staff also listed family support and personal circumstances as very important.

In summary, IFPs help to build the capacity and capability of new farmers in the four asset areas, and by doing so empower them to overcome, to a certain extent, some structural barriers. There is enough evidence in the findings to show that the four asset areas are important in a new farmer’s journey into farming. Across the board IFPs employ similar kinds of approaches to build the assets though there are minor differences in some of the assets. The differences are observed in areas of marketing (physical asset), and provision of financial support (financial asset). The organizations working with immigrants and refugees provide a higher level of marketing support than the others. Similarly, financial support varied from considerable levels of support to none at

all. Regardless, IFPs, by building capability in the four asset areas, help new farmers navigate their pathway into farming, and improve their chances of success.

3.7 Conclusions

The aim of this study is to gain a deeper understanding of the incubator farm program as a new farmer engagement strategy, and as an assisted pathway into farming, especially for those from outside of the farming sector. This chapter focused on the barriers and challenges, and how IFPs function in helping beginning farmers surmount these barriers (Figure 2.1). This chapter also used SLA to understand how IFPs contributed to build the different assets in farmers, thereby contributing to the small but growing body of knowledge about the IFP concept and its contribution to creating the next generation of farmers.

The process of data collection, which included key insights from the interviewees, indicated that there is an overwhelming interest to take up farming as a livelihood option, and this goes well beyond hobby farming. The type of people who showed interest in farming as their livelihood was common across all the case studies. The conclusion that can be drawn is that there is a sudden interest to take up farming from people of all walks of life. This leads to the linked questions: why is this phenomenon taking place, and what is pushing these people to take up farming against seemingly overwhelming odds? More in-depth qualitative studies are required to understand the underbelly of this movement. Can comparisons be drawn to the “back to the landers” of an earlier era (1960s and 70s); are these the new “back to the landers” (Matsumoto, 2017)?

The selected case study organisations all grew out of the need to support aspiring new farmers in their respective regions. The goals of the case studies, at the conception stage, were varied but over time they evolved to also supporting new farmers. The cohorts served by the case

study organisations varied from young people from urban regions to refugees, with the commonality here being that most, if not all, of them had minimal connections to the existing farm sector. Based on an analysis of the interview data and the broader farm succession landscape it can be concluded that the case study organisations provide a low risk pathway into the farm sector.

This study used the SLA to posit that incubator farm programs build the capability of new farmers in four asset areas – financial, social, physical and individual. The sustainable livelihoods framework was used here as a way of thinking and an approach to development. The sustainable livelihoods framework allowed this study to break down into parts the areas where incubator programs focused their energies in supporting aspiring new farmers. As expected, providing access to physical assets, particularly land, is one of the important areas that programs concentrate their efforts on. Similarly, considerable effort is spent in building financial assets that include business planning and cash flows.

The previous chapter in this dissertation concluded that IFPs have played a crucial role in helping many people to consider farming as a vocation. One important conclusion in that chapter is the homogenous nature services of IFPs despite the diverse range of populations they serve and the wide range of geographical settings. The current chapter took a much closer look at the IFP landscape and was able to reinforce the earlier conclusion; that while they did play a crucial role in a beginning farmer's journey, they lacked imagination to meet the diverse needs of aspiring farmers. In addition, this study proved that new farmers need to have a varied set of skills and capabilities from production to marketing to digital awareness to be successful. New farmers need to be creative, collaborative, and innovative if they imagine themselves as the new agrarians (Milone & Ventura, 2019). This is clearly indicative that this generation is very different from the existing older generation of farmers. IFPs help them beyond just being the first steppingstone: IFPs

move them further along in their pathway to a point where they are now confident and capable of taking the next step – starting their own farm and eventually becoming the next generation of farmers. IFPs would be even more effective if they embraced their diversity both in population and geographical location rather than trying to fit all into one modular structure regarding support and services.

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4. California Farm Academy – A Study of a Beginning Farmer Training Program in California’s Central Valley

4.1 Preface to Manuscript

The previous chapter examined a subset of IFPs with particular attention to selected attributes of programs. Whether causally or by association, these attributes were found to factor into the nature, and even the purpose, of programming and service provision. While not developed at length, engagement with each of the five case examples and the factors that led to both their creation and their programming indicated, not surprisingly, that ‘place matters’ – both materially and philosophically. This is a sentiment that is echoed by Smith et al. (2019) who state “that when values about food, place, and the environment are enacted collectively at the community level by a variety of actors working collaboratively, new farmers have a more realistic opportunity to succeed” (pg. 121). At a high level of resolution, the structure and organization of IFPs appears generally similar across the US but they are, like all local food ventures, embedded in local social, political, and economic realities that become manifested in the lived experience of such ventures. IFPs are influenced, and in turn influence the locales and communities in which they are situated; undeniably they are undeniably place based. In this chapter I explore how one particular IFP interacts with its surroundings, and how it has engaged with local actors and systems to establish and grow, and at the same time fulfill its goal of supporting new farmers. I conduct this exploration and analysis from a distinctive vantage point as the director of an IFP in the US, and from my experience as the program manager of another IFP in Canada. As such, I occupy the status of not just researcher, but also that of “informed sector insider”.

This chapter’s approach is strongly aligned with a community engaged research paradigm, which focuses on close engagement with the community under study, and the generation of applied outcomes (Wenger, Hawkins, & Seifer, 2012). As noted, I am not only, as a researcher, closely

involved with the broad community under study but also have been part of the community for a considerable length of time (12 years), which affords a unique lens and perspective to this research. This chapter uses a single case study to further unpack the place-based nature of IFPs. Questions like how IFPs navigate the sustainable and conventional farming system at the local level, and how they interact with local actors and stakeholders are amenable to examination via a single detailed case exploration. This chapter fulfills objective three of the dissertation, which is to conduct a single in-depth analysis of one IFP to gain a deeper understanding of the “beginning farmer pathways” that an IFP enables in a local context, and to reveal how that context matters.

This research, as mentioned earlier, uses a single case study approach and employs participant observation and grey literature to gather data on the history, establishment, networks, and purpose of the case study IFP. The data are then analyzed and unpacked using the broad tenets of grounded theory, which tries to generate theory from data (Corbin & Strauss, 1990).

4.2 Preface References

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4.3 Introduction

The purpose of this chapter is to take a more nuanced approach in exploring motivations, contingencies and some of the individual level dynamics of program delivery. In this chapter, I shift my focus from examining IFPs based on their structure and services to delving into the role of locale and setting in the life of an IFP, which includes historical, current and future contexts. The reason for this shift is simple: as my research progressed, it became evident that place, both the physical and communal/societal, had a profound impact on farmer training programs and IFPs in particular, which meant a study of IFPs that did not acknowledge the role of place is incomplete. In attempting to analyze the concept of place, I draw from the concept of ‘relational identities’, which according to Laforge & Levkoe (2018,) is “the way a farmer perceives themselves and the broader role they play in society” (pg. 4). Relational identities in this context are attributed to farmers, but IFPs have relational identities too as they try to define their role and try to fit into the societal structures of the place they are located.

In progressively uncovering these ‘layers’ of IFPs, both the research and my ‘insider knowledge’ was used to discern that there is more dynamism, diversity, and differences in stark contrast to the homogeneity that was apparent in the earlier chapters. The current chapter goes to the ‘ground level’ in the context of one IFP to try and unpack its place-based nature, and reveal how locally contextual factors, at the individual and community level, lead to shaping a program’s purpose, design, and delivery. I use my embeddedness in the case study, as the Program Director, to try and tease out the structural forces that may contribute to this homogeneity.

IFPs are “one expression of growing public awareness that the future of agroecosystems and community-based food systems is critically dependant on the access to resources, knowledge, skills, and strategies of incoming farmers” (Smith et al. 2019, pg. 113). There is considerable

anecdotal evidence, and consensus in the farmer-training sector that the new farmers that are part of IFPs are very much part of the aspirational shift to community-based and ecological food systems. While these new farmers may not always be seen to explicitly connect themselves to the food sovereignty movement, the values they espouse, and the systems of production and marketing they align themselves to, can be seen to fall within a food sovereignty frame.

While their emergence and continued existence is attributed to the sustainable/alternative food movement (Laforge & Levkoe, 2018; Smith et al., 2019), IFPs still live and navigate a world where large scale production agriculture, and all the related infrastructure that goes with it, is the dominant actor. Nowhere is this more evident than in the Central Valley, and in particular the Sacramento Valley region, of California, which is one of the origin points for so-called industrial agriculture and also where the organic food movement has its early roots (Beard, 2017). Additionally, there is the constant tension in the region between agriculture and environmental regulations. IFPs, whatever their goals are, cannot separate themselves from the communities and regions they are part of, and thus they interact with “various actors and organizations” who are instrumental in supporting either new farmers or the broader food system (Smith et al., 2019).

In attempting to understand IFPs as place-based initiatives, or as Smith et al. (2019) put it, “educational approaches that are embedded in strong community support networks” (pg. 114), I adopt the California Farm Academy as my case study. I also use my embeddedness in this program to understand the role of place in CFA’s establishment and engagement with new farmers. CFA exists in and navigates a region that has a well-established farming and food system, strong academic and research networks, well represented producer organisations, and highly aware food consumers. I examine how these different actors who are, in most cases, unique to the locale, influence and support CFA’s goal to support new farmers. New farmers are an integral part of this

study, their aspirations, motivations, values, and needs are central to CFA's programing. A study by Ngo & Brklacich (2013) "found that although new farmers shared a common goal to be a part of rural and agricultural landscapes, individual circumstances shaped by priorities, assets, and resources seemed to facilitate different experiences of places" (pg.64). In particular, I used my observational and temporal knowledge to unpack the tensions and/or clashes between CFA's philosophies and the new farmers' values, goals, and relational identities. The themes and concepts outlined above will find expression throughout this paper as I unfold the history, establishment, and growth of the CFA.

This chapter from here on is divided into five sections. In the first section, I outline the methodology, which includes the approach and concepts used in this study. This is followed by highlighting the historical and spatial context within which the CFA program exists, as well as its establishment and growth. The third section explores the opportunities and challenges that the region presents with respect to beginning farmers, and by default to the CFA program. In the fourth section, I discuss how the program compares with other beginning farmer programs across the country. In the concluding section, I draw from the concepts mentioned above, and in Chapter 1 (Figures 1.1 and 1.2), to posit how the CFA program is contributing to the goal of creating a new generation of farmers, and thereby to a sustainable and resilient food system movement.

4.4 Research Approach and Methods

Research Approach

This research analyzes the programmatic areas that CFA encompasses: the beginning farmer training program, the farm business incubator, and the registered apprenticeship program. These areas include the beginning farmers who access the services, the farmers in the region who interact with these programs, and institutional supporters (private and government). The overall goal is to

gain a nuanced understanding of the programmatic space, and to do this I use an approach that is based on a community centric participatory research paradigm where I am embedded in the organisation. This ‘up close’ perspective was valuable in affording me a firsthand and intimate chance to study the space. Community based participatory research, according to Jordan et al. (2011)

is grounded in the conviction that a pluralistic democratic conception of knowers enriches, rather than undermines, empirical scientific research. When those whose lives and communities are being researched are empowered as knowers, alongside and in collaboration with academic researchers, the knowledge that results is more complex, better supported by a wider range of evidence, less subject to unexamined bias, and far more likely to be taken up and put to use. (pg. 189)

Community Based Participatory Research (CBPR) is gaining traction in institutions of higher learning as part of community engaged scholarship, and as a means to put theory into practice (Nash, 2015). Traditionally, knowledge generation has occurred in higher education, and as Peterson (2009) states, establishes “clear divides between the knowers (the scientists, experts, and intellectuals) and the known (the community members seen as an object of study, not a source of knowledge)” (pg. 548). CBPR aspires to shift this paradigm to one that acknowledges that community members are “not only a source of knowledge, but as esteemed teachers and mentors providing insightful analysis and leadership” (Peterson, 2009, pg. 548). While Peterson’s study was based on students and their efforts in conducting CBPR, this very much applies to the beginning farmer space. Further, my involvement with the community of new farmers provided me with insights to this dynamic nature of this space. According to Halseth, Markey, Ryser, & Manson, (2016), “In community settings, things change. CBR (Community-

Based Research), learning from the tradition of AR and PAR, allows this dynamism within the research setting to be part of, rather than an impediment to, the research process” (pg. 30).

Over time, and based on a variety of interactions and observations, it became evident that the beginning farmers who access the CFA program come with a deep set of values that encompass human and natural spaces. Their ‘lived experience’ provides them with experiential knowledge that informs many of the actions they undertake and accomplish. They are part of the sustainable agriculture movement that is trying to move away from the industrially oriented commodification of food. It is difficult to visualize or even imagine how this diverse group of beginning farmers with little or no knowledge of the farming world can effect transformative change. Still they are part of a broader aspirational shift in both the spirit and structure of agriculture at a ‘human scale’, a system that strives to democratize the production and distribution of food. The beginning farmers’ knowledge, acumen, and understanding of the food and farming space, together with the ability (or agency) to exercise choice and control in developing the next generation of farms, will, it is hoped, become a significant force in the evolution of the farm sector and the emergence of localized and sustainable food systems.

Pragmatism, along with CBPR, is the other approach used in this study. John Dewey was a leading proponent of pragmatism as a system of scientific enquiry in the United States. American pragmatism was first expounded by Charles Sanders Peirce and later expanded upon by William James and John Dewey. Dewey’s work has generated several other reflections that built on his original ideas and thoughts. This includes McDermott's (1981) book, *The Philosophy of John Dewey*, wherein he explains that the “fundamental difference” of pragmatism from empiricism is “that it [pragmatism] does not insist upon antecedent phenomena but upon consequent phenomena;

not upon precedents but upon the possibilities of action” (pg. 50). A similar line of enquiry by Rorty (2000) posits that “the point of description is to enlarge our repertoire, not find the one description that gets us right” (pg. 823), which relates to pragmatism’s tenet that the truth is a construct of our judgement and experience in a moment in time.

Dewey’s pragmatism, which includes citizen scientists, and judgement and experience, is central to this chapter. Collaborations and experiential learning are the main tenets of beginning farmer training programs. The beginning farmers themselves possess, or quickly develop, many of the qualities that pragmatism expounds, and which are central to the success of their farm enterprises. Furthermore, beginning farmers are active acquirers and users of knowledge, which they use to drive innovation in their ventures, rather than mere recipients of technological innovations that come from external entities (Milone & Ventura, 2019), and they are engaged actors and moral thinkers. Further, an approach that is informed and derived from Dewey and other scholars of pragmatism provides the tools that help to make sense of my own lived experience.

Along the same lines, Hassanein (2003) points out that “calls for a complete transformation of the food system rarely come with solutions. On the other hand, pragmatic, incremental change as part of food democracy can lead to transformative change” (pg. 85). It is this incremental change that the beginning farmer movement and related training programs seek to support and are part of. According to Renting, Schermer, & Rossi (2012) civil society is emerging as the dominant player in this process. This chapter uses the concepts of pragmatism and food democracy to tease out how the CFA’s programmatic space aligns with these concepts and its contribution to transformative change in food systems.

Research Methods

The research described herein is based on a single case study of the Center’s CFA program. The primary method of data collection is participant observation. According to Jorgensen (2011),

Through participant observation, it is possible to describe what goes on, who or what is involved, when and where things happen, how they occur, and why—at least from the standpoint of participants—things happen as they do in particular situations. (pg. 2)

The observations and insights gained during my tenure as Director of CFA from May 2016 to December 2018 provide the data for this study. This insider view combined with the seven years of prior lived experience that I acquired through working in IFPs is in line with “the methodology of participant observation (which) requires that the researcher become directly involved as a participant in the peoples’ daily lives” (Jorgensen, 2011, pg. 8). In this case, I am not involved as a participant in the daily lives of the beginning farmers, however, I do have intimate knowledge of the beginning farmers’ journey from the time they connect with the CFA program and beyond.

Gans (1999) pointed out that participant observation “allows researchers to observe what people do, while all other empirical methods are limited to reporting what people say about what they do” (pg. 540). My unique position within CFA facilitates observation at this level. This kind of involvement also raises the issue of objectivity and the risk of the researcher “going native”. These risks were alleviated by a process of constantly stepping back and reflecting on the central issue: the need for a new generation of farmers, which helped me to not let individual or organizational needs influence the research processes of data collection and analysis. At the same time, as Director, I am not involved in all day-to-day management of the program, reducing any

biases that might arise from close connections with and intimate affairs of beginning farmer participants.

4.5 History and Context

Sacramento Valley is part of California's Central Valley region. The Central Valley is located between the Coast Ranges in the west and the Sierra Nevada mountains to the east. It is one of the most productive landscapes in the US, producing almost 40% of the country's fresh vegetable and fruits. According to Olmstead & Rhode (2003) "What distinguishes California from other regions more than output, however, is the wide diversity of crops, the capital intensity, the high yields, and the special nature of the state's agricultural institutions" (pg. 2). The Sacramento Valley forms the northern part of the Central Valley and is the drainage basin for the Sacramento River and its tributaries that eventually flow into the San Francisco Bay. Agriculture in the Valley dates to the 1840s but gathered momentum only after the gold rush in 1849. Those who came to strike it rich in the gold rush found that all the surface deposits were depleted by late 1849 and rather than return empty handed to the towns and villages they came from in the Mid-west and East Coast they started to cultivate the rich soils of the valley. Many of these new arrivals were farmers from the East or Midwest of the US meaning it was only natural that they turned to farming for their livelihoods (David, 2003). Wheat, as elsewhere in the Central Valley, was the primary crop till the 1890s after which it declined due to global forces. Subsequently, the region saw the introduction of crops like cotton, sugar beets, vegetables, stone fruit, nut crops and olives. Many of these crops exist to this day are still farmed in the area today.

The region's farmers were known to be progressive and early adopters of technological innovation in addition to marketing their produce globally (Olmstead & Rhode, 2017). In the 1950s, the mechanical tomato harvester was developed by University of California (Davis)

scientists, as were tomato varieties that were suited to be mechanically harvested (CA Tomato Growers Association, 2018; Carlisle-Cummins, 2015). This trend continues to this day with many farmers in this region adopting advanced technologies on their farms, conserving water through more efficient irrigation systems, and adapting to the changing labor market through increased mechanisation. The Sacramento Valley region is also the largest rice growing region in the US, with most of its rice exported to Japan. It also contributes substantially to the almond acreage in the Central Valley, with California producing 82% of the world's almonds (CDFA, 2018; Farm to Fork, 2019). Since the 1840s farming in the Sacramento Valley has been a leader both in the US and globally and is a major contributor to the state's coffers (CDFA, 2018).

The Sacramento Valley possesses a Mediterranean climate, which contributes to the diversity of crops. The dry, hot summers and cool winters allow the farm sector to grow a wide range of crops in this region. According to the Northern California Water Association (2017) "the fertile soils of the Sacramento Valley (Valley) allow for the cultivation of a diverse array of crops that contribute to the rich mosaic of land uses in the region". The range of crops that are grown in the Valley make it one of the most agriculturally diverse regions of the world.

In addition to the Mediterranean climate, the region also has a perennial source of water from the Sacramento River and its tributaries, which are fed by Sierra Nevada snowpack. This river network contributes to replenishing both ground water and surface irrigation water sources throughout the year, despite the area receiving only 18 inches of rainfall annually. In recent times, however, severe drought and erratic weather patterns have been a cause of concern for most California farmers who view water as a scarce and expensive resource.

Farmers in the Sacramento Valley not only contribute to the economy of the state but are also conscious adopters of practices to conserve and enhance resources as part of their farms. They

have adopted riparian buffer strip planting, cover crop rotations, maintaining habitat for birds and avoiding the practice of burning rice straw. The California Ricelands Waterbird Foundation is an example of such a unique partnership. In this partnership, the Foundation and the California Rice Commission bring “a significant number of California rice growers to the table who are willing to alter their farming practices for the benefit of water birds” (California Ricelands Waterbird Foundation, 2015).

California agriculture, and its development over the last 170 years has impacted farming not only in other parts of the country but across the world. Large-scale industrial farming systems have used the state as their testing ground. An example of this is the combined harvester for wheat that was developed in Kalamazoo (Michigan) but refined and popularized in Stockton (California) (Olmstead & Rhode, 2017). Similarly the prototype of the tomato harvester was first tested in Davis and later manufactured in the California Delta region (Carlisle-Cummins, 2015; de la Peña, 2013). The farm sector in California is the leader in mechanised vegetable crop farming that allows it to grow and supply a substantial portion of the fresh fruit and vegetable needs of the country. This mechanised farming trend has spilled over to the organic farming movement. California has a large number of organic farms that are large-scale and highly mechanised like their conventional cousins, which has received its fair share of criticism (Guzman, 2014).

On the other hand, the State and the Sacramento Valley/Bay Area region was, and is, at the forefront of the alternative and sustainable agriculture movement. The counter-culture movement of the 1960 and 70s, which included the “back to the landers” had many proponents in this region. Several organic farms were established in the Sacramento Valley during this time. The Davis Farmers Market, which is one of the oldest in the country, is a product of this movement and thrives to this day (DeBenedetti, 2019). In the 1970s, the farm to fork movement saw its birth in

Berkeley, California, through the efforts of Alice Waters and the restaurant she established, Chez Panisse (Beard, 2017). The Sacramento Valley is the foodshed for the Bay Area that encompasses nine counties and has a population of approximately 7.75 million with considerable buying power.

The information technology boom generated out of Silicon Valley (Bay Area) is beginning to influence agriculture. Research and testing of farm robots and on-farm data gathering using drones and sensors are the new frontiers for both the tech and agriculture sectors. This is not limited to farm-based technology, and companies like Hello Fresh and Blue Apron are trying to disrupt traditional food supply chains. Many in the information technology sector see agriculture as the next global system to disrupt and change much like what ride sharing (Uber and Lyft) did to the taxi industry.

The CFA is thus situated in a historically significant and agriculturally important region, a region that was and is a hotbed for agricultural innovation. It is only fitting that CFA, with its mission to cultivate future generation of farmers, be part of this dynamic farming landscape. CFA, by its mere presence in this landscape, cannot but be influenced by it. Furthermore, the people who initiated the program were not only long-standing residents of the region but had deep roots within the farming community, reinforcing the place-based nature of the program.

4.6 CA Farm Academy – Establishment and Growth

This section details the establishment of the CFA and its subsequent growth as a beginning farmer training program. As these programs are born out of the need to create the next generation of farmers it will be pertinent here to discuss the new farmer landscape as it pertains to the region.

As in other parts of the country, California's farmers are ageing, and the farm population is on the decline. The 2017 US Census of Agriculture indicates that the average age of farmers in California is 59.2 years with 69% above 55 years. But unlike in other parts of the US, the diverse

nature of California's agriculture also requires a substantial percentage of low skilled and skilled work force (farm workers, supervisors and managers) in addition to a new generation of farmers. This presents a very different locale-specific scenario and challenge compared to other parts of the US and Canada. Much of the workforce in California has come from migration, primarily from Mexico and Central America over the last 100 years. Prior to that it was the Chinese and Japanese who formed the bulk of the workforce (Olmstead & Rhode, 2017). Most, if not all, of these cohorts entered farming as low skilled wage laborers but their descendants did not remain in farming. Many moved to urban areas but a few went on to buy land and establish their own farms (Olmstead & Rhode, 2017). Availability of farm workforce, both skilled and unskilled, in addition to the ageing and declining farmer population are two issues that confront California agriculture today. This issue is also gaining the attention of the California Department for Food and Agriculture (CDFA) that is investing substantial sums to support beginning farmers (CDFA, 2013, 2017). In addition to this, the state is also investing heavily in supports for socially disadvantaged farmers (Latino, African American, Native American) as the state has a high proportion of these cohorts in the farm sector compared to the rest of the country.

It is in this context that the Center for Land-Based Learning (the Center) decided to start the CFA as a beginning farmer training and support program. The Center's history of working with youth and exposing them to opportunities and careers in agriculture made this decision quite seamless and the Center's management saw it as a natural progression of their existing programming. A consultation with the Agriculture and Land Based Training Association (ALBA), one of the earliest beginning farmer training programs in the country for migrant farmworkers, was undertaken to guide the program's initial steps. Simultaneously, a needs assessment was conducted in the region and a steering committee that consisted of farmers and extension personnel

was formed to help design, plan, and structure CFA. This led to the establishment of a seven-month training program in 2011.

The training program drew from and built on ALBA's Farmer Education Course that combined classroom education with hands on field-level experience. ALBA course participants were primarily Spanish speaking farm workers who wanted to either start their own farms or move up the ladder on the farms where they worked. This was not the case in the region that CFA was located (Sacramento Valley), which was bound to attract a wider cross section of people interested in farming. The training program retained the framework of ALBA's course but adapted it to meet the needs of aspiring farmers in the region. The CFA training curriculum covered a wide range of topics and crops. This was combined with weekly farm tours that included large- and small-scale farms, conventional and organic systems, orchard crops, and mixed crop (crop(s) and small-scale livestock) farms. This gave the participants a broad foundation of agriculture in the region, and an understanding of the important aspects one should take into consideration when starting a farm enterprise.

The training program also had a strong focus on business aspects, with participants required to write and present their farm business plan to a panel of experts at the end of the course. The on-field component required the participants to work together on a one-acre plot of mixed vegetables. All participants were involved in all aspects of field work from starting seedlings to harvesting and packing for market. Produce from the program was not sold as this required an extra level of capacity. In addition, the program managers felt that marketing would take time away from (and dilute) the teaching aspects of the program. While the participants were exposed to marketing and its nuances, they were not involved in any direct marketing themselves through the program. By

conducting classes in the evenings during weekdays and on Saturdays the program allowed people who had full time jobs or other commitments to enroll.

As of 2018, the training program, has graduated 140 aspiring new farmers from a diverse range of backgrounds and experiences. Annually, approximately 30 to 40 people apply for the 20 spots available in the program. Participants broadly fall under three types: a) young people from urban areas, b) career changers and c) those with access to farmland at a small scale.⁶ This reflects what is happening in the broader beginning farmer movement. The vast majority of program participants had a limited level of farming experience, mostly at a smaller scale. The program accepts, through a rigorous application process, those who have a well formulated idea of what they want to do, that is, those at the active planning stage. The program did not cater to hobby farmers or those at an exploratory stage. Its structure and content are too advanced for these latter two cohorts.

In 2012, close on the heels of the training program, CFA established the incubator program on five acres of land leased from the walnut farmer who founded the Center. The incubator program also drew from ALBA's structure in addition to researching other such programs across the country. The incubator program serves as a next step to those in the training program, especially for those who want to take their farming idea into a concrete space and is a natural progression in their farming pathway. It has a four-year tenure, during which the participants hone their production methods, explore and develop markets, and solidify their business plan. In addition to leasing land from CFA, the participant beginning farmers also gain access to equipment and infrastructure on a pay-per-use basis. Participants also have access to workshops based on their knowledge needs and program staff also provide mentorship on a regular basis.

⁶ The program collects demographic details, but it does not collect data to identify how many of the 140 participants fall into the three groups.

Since its inception, the incubator program has seen rapid growth and expansion. In 2014, an urban farm incubator program was established in the city of West Sacramento. This program started with a quarter acre city lot and has now grown to five locations covering 5.50 growable acres. It engages with a wide variety of stakeholders that include the City, School District, a private landowner and the West Sacramento Housing Development Corporation. In 2016, CFA leased seven acres of land in Davis, which is part of a new housing development based on the agrihood concept (Roth, 2016) and established it as its third incubator location. Participants in the incubator program need to demonstrate some level of practical experience to be accepted into the program; those attending the training program are given preference, but it does not exclusively serve them.

The training and incubator programs engaged with a wide and varied cross section of actors and communities in the region, which included organic and conventional farmers, academic researchers, farm extension agents, farmers markets and financial institutions. Unlike other parts of the US and Canada, this region has a healthy mix of organic and conventional farmers, and CFA engaged with both camps. Another aspect that is unique to the locale is that the divide between these two farming systems is not as pronounced and antagonistic as it might seem, with people from both camps (conventional and organic) interacting with each other despite their differences in philosophies and production systems. This region also has many farmers who have some combination of organic and conventional production systems on their farms. The juxtaposition the organic and conventional farming systems helped CFA to expose its participants to a wide cross section of farms and farmers thereby broadening their outlook. This juxtaposition, while advantageous in some respects, was not without tensions especially when participants had extreme views of conventional agriculture. I have observed aspiring farmers in the training program critical of some of the farmer presentations or farm tours. This sentiment was not so pronounced among

incubator farmers as they were further down the road to understand the need for coexistence despite differences. However, for CFA these connections were important to establish its 'relational identity' with the broader agricultural community.

In 2017, an apprenticeship program was piloted by CFA. This program differentiated itself from the existing farm internships and apprenticeships by structuring itself on the state registered apprenticeship programs. Registered apprenticeships are an integral part of trades (for example, plumbers, electricians, sheet metal workers), but are not prevalent in agriculture. These traditional apprenticeship programs that have existed and fed the skilled trades require both on the job training and classroom learning. CFA's program set out to do the same and in 2018 was registered as a farm and ranch manager apprenticeship program with the Division of Apprenticeship Standards (DAS) (Rominger, 2018). Thus, it became only the second agriculture apprenticeship program in the state, the first being a viticulture program in San Diego, CA. With this program, CFA started to work very closely with farmers in the region, especially larger scale operations and across different crop types. As of 2018, there were vineyards, large-scale mixed farms (row crops and orchards) and a non-profit farm that were part of the program. Furthermore, the program started exploring and building relationships with industry organizations like the Almond Board, the California Association of Wine Grape Growers, and California Walnuts. The apprenticeship's focus is to provide the apprentices with the required knowledge and skills to acquire a skilled position on a farm. This is different from the other two programs where the focus is on people starting their own farms. The farm sector, through this program, will have access to a trained pool of skilled workers and managers.

It is evident that CFA has grown tremendously since its inception. In the initial stages CFA was solely identified as the training program but it has since morphed to include the two other

programs under its umbrella. This growth opened up new opportunities and continues to do so but it faces a fair share of challenges. In the next section some of these opportunities and challenges are reflected upon.

4.7 Opportunities and Challenges

It is evident that the growth of CFA took advantage of the movement to support new and beginning farmers. A 2013 national level survey on IFPs conducted by a master's student from Tufts University indicated that 50% of the surveyed programs were initiated in or after 2009 (Overton, 2013). It was also a time when considerable resources were allocated by the federal government and private foundations to address this issue (NESFP, 2016; USDA, 2015). Even though CFA did not receive any federal funding until 2018, it took full advantage of the momentum that the beginning farmer movement was gathering at that time. CFA also tapped into the urban agriculture movement when it started the West Sacramento Urban Farm program in 2014, a movement that continues to attract attention with many cities promulgating urban agriculture ordinances (Administrator, 2012; NYC, n.d.; Sacramento, n.d.). CFA's West Sacramento urban farms primarily serve as incubator sites for those interested in establishing urban farms, and in this respect, it is a unique program. Similarly, the Cannery Urban Farm in Davis that CFA manages is the first 'agrihood' in Northern California, and it is one of the very few beginning farmer training programs as part of this model. Agrihoods are a more recent development in the urban farming landscape which embraces the farm to fork concept wholeheartedly (Urban Land Institute, 2016). The urban farm programs (West Sacramento and Davis) engaged with a diverse and wide range of stakeholders, allowing CFA to acquire visibility beyond those involved with food and farming. CFA's entry into urban agriculture, and engagement with the actors who are part of this movement speaks to the place-based nature of IFPs. This also shows how an IFP navigates the opportunities

and challenges that the locale might present; in this case, CFA saw an opportunity to both serve and drive the development of joined place based alternative food/farming systems.

At a broader, albeit closely-related level, CFA tapped into the growing demand for locally grown food fuelled by the urban consumers' sentiments and values around food, whether it be for health reasons or environmental concerns or to support local farmers (Smith et al., 2019). In this way, CFA took advantage of the local food movement, which is a post organic farming/food phenomenon that took root in the early part of the 2000's. It was popularized by books like the 100 Mile Diet (Smith and Mackinnon, 2007) and Omnivore's Dilemma (Pollan, 2006), and established itself as a permanent feature in the alternative and sustainable food movement and landscape. The growth of the local food movement has proved to be a blessing for many beginning farmers as consumers not only preferred and sought fruits and vegetables that were grown "close to home," but also wanted to re-establish relationships with the growers (Laforge & Levkoe, 2018). Beginning farmers, and by default CFA, took full advantage of this trend as did many similar programs across the country. In addition to all these trends, the Sacramento region proclaimed itself as the Farm to Fork capital of the Country in 2012. This opened many opportunities for the beginning farmers that were part of CFA, for example restaurants began to source from beginning farmers in the region.

While the above favorable developments and trends continue to contribute to CFA's growth it also went through growing pains. Despite the overall societal and (local) political climate being favorable towards beginning farmer initiatives, CFA was not immune to funding shortages that are common for any NGO. It has not been successful in any of its applications to the federal government for grant funding. The Beginning Farmer and Rancher Program (BFRDP) funding stream that helped to establish many beginning farmer training initiatives, especially IFPs across

the country did not provide CFA with funding. Additionally, the foray into the urban agriculture space led CFA to interact with stakeholders like cities and school districts and this posed its own set of problems. After the initial euphoria subsided, many issues had to be tackled, like the cost of city water and restrictive regulations. In some locations the soil was not of farmable quality, which required elaborate remedial measures. The agrihood in particular required constant interaction with the surrounding community. This level of engagement was not necessarily what the beginning farmers or CFA anticipated, and proves to be an issue to date. Similarly, the apprenticeship program, seeking accreditation, had to engage with levels of government that CFA had neither the experience nor the capacity to manage. This proved to be a steep learning curve and took up considerable staff time and resources.

4.8 Discussion

This section discusses the CFA's programmatic space in comparison to other beginning farmer training programs in the country. In doing so, this discussion also tries to place CFA's outputs and outcomes in the region's farming landscape, in this case the Sacramento Valley. An attempt is also made to discuss this particular case study through the lens of pragmatism and food democracy.

Programmatic Space and its Outputs

CFA's programmatic space is designed to provide a conduit or pathway for someone with some knowledge of farming and minimal or no connections to the farming world to enter the sector. The training program, though not new, is conceptually unique in the beginning farmer space. Many programs focus on and start with the incubator space, and the knowledge components are developed around this core. In developing a stand-alone training program, which is outside of and has no connections to the incubator, CFA separates itself structurally from most other

programs in the beginning farmer training space. The training program took advantage of the strengths the locale presented, which were, as mentioned earlier, the coexistence of the organic and conventional production systems and philosophies. This meant that the aspiring new farmers, especially those who came with extreme and radical views of conventional systems were by design exposed to the conventional systems of farming, and many (not all) walked away with a better appreciation of the farmers in conventional farming systems. The training program indicates the influence and contribution of the locale in the design of an IFP, and that when examined closely, there are some subtle differences that an IFP exhibits, which is contrary to the homogeneity seen through surveys (Chapter 2) and case studies (Chapter 3).

The training program helps beginning farmers acquire required knowledge without the pressure of having to simultaneously start and run their own farm businesses. Contrary to the knowledge deficit model conclusion that Calo (2018) proposed, based on his study of the BFRDP and farm incubators, this program values and builds on whatever experience the participants bring in with them, farming or otherwise, and to some extent helps to surmount structural barriers especially around marketing. This helps many to make the right decisions on their next steps even if it meant not starting a farm at all. According Calo (2018), “In the knowledge deficit model, environmental and social problems are often attributed to lay people who lack the knowledge to make appropriate decisions or to behave more sustainably”, and they conclude that the type of programming that IFPs provide are not enough for new farmers to surmount the structural barriers they face. While this might be true at some level, the observations presented in this chapter indicate that new farmers at CFA come with a fairly high level of awareness of the structural problems (land, markets, finance) that they will face.

The incubator program is very much aligned with other programs across the country. Tenure in the program is four years, and during that time, participants have access to workshops, mentorship, and a degree of market support. All these aspects are on par with what exists in other programs. The apprenticeship program is another aspect that differentiates CFA, especially since it is also accredited by the state, which ensures the standard and quality of the program across the state. Most apprenticeships are stand-alone programs, for example the Dairy Grazing Apprenticeship (National) and Rogue Farm Corps (Oregon). CFA's program is probably the only one that is part and parcel of a beginning farmer training program, and links with the other two programs. This means that an aspiring farmer can move across these programs according to their needs and/or circumstances. For instance, one could start with the training program and then decide to enroll in the apprenticeship program, or someone from the apprenticeship program could decide that he/she wants to start their own farm and move to the incubator program. CFA thus provides multiple pathways for someone aspiring to enter the farm sector. Eventually these pathways will lead one to either establishing a farm or to a career on a farm.

CFA's goal is to help launch future generations of farmers and farmland stewards, who will, in the long term, contribute to a stable and resilient food system. Its immediate output is to prepare people who are confident and capable of taking steps to become the next generation of farmers. Its programmatic space contributes to this by providing multiple pathways based on individual's interests and needs. The apprenticeship program imparts the skills and knowledge to become a farm manager or supervisor. The incubator farm, by providing a low-risk space to test and experiment, contributes to the establishment of a successful and resilient farm. The training program provides the foundational knowledge and some level of on field training and guides people to the appropriate next steps. These pathways eventually contribute to the success of the

individual's endeavors. CFA programs have experiential knowledge and individual learning as a common thread. Lived experience is also a valuable part of the overall programmatic space with participants coming from varied educational and professional backgrounds contributing to the programs. This is critical in building the quality of resilience in an individual, which then translates to system-wide resilience.

CFA through a Food Democracy/Pragmatism Lens

As farmers age, their experiential knowledge gained over their long farming careers must be transferred to the new generation of farmers. This is a critical aspect that rarely attracts attention in the discourses around farm succession. The on-the-job training of this apprenticeship is the ideal mechanism to achieve this goal. The incubator program also contributes to creating a new generation of farmers albeit currently at a micro level. How do these aspects tie into pragmatism and food democracy?

Dewey's philosophy emphasizes the value of experience and posits that "educative experiences are those that do not arrest or distort the growth of further experiences – that is they open the person to relationships and possibilities of enhanced human living" (p. 506). CFA embraces this in a microcosm, as all its activities, whether they be in classrooms, workshops, farm tours or in the field, lead the individual to engage in an educational process heavily and intentionally grounded in experiential learning. Emphasis is laid on learning as lived experience so that it leads the individual to a deeper level of engagement. This learning process marries technical or material activities with personal reflection on individual and collective goals, a form of subject formation (LaForge and Levkoe, 2018) where emerging farmers confront the question "where do I fit?" and "what kind of farmer do I want to be?" On the other hand Hassanein (2003) writes:

“political pragmatism refers to a willingness to negotiate differences—that is, to compromise—and to be satisfied with the achievement of incremental results rather than standing firm for inflexible absolutes” (pg.83).

In a myriad of ways, CFA’s activities mirror the above statement. CFA constantly moves between the conventional and organic sectors—negotiating and embracing different viewpoints in the knowledge that it will contribute to the greater good—a resilient and stable food system. CFA strives to change the food system one farmer at a time, again fully aware that resilient farmers are critical and fundamental to a resilient food system.

4.9 Conclusion

This Chapter is based on a single case study and utilized the California Farm Academy (CFA) for this purpose. CFA is one of the few beginning farmer training programs in Northern California and has achieved phenomenal growth since its inception in 2011. It is unique in the beginning farmer space by way of its stand-alone training program, a state registered apprenticeship program and the urban farm incubator program. Its participants come from diverse backgrounds and experiences that span computer engineers, hedge fund managers, private sector employees and teachers. The experiences that these participants bring are built and expanded upon in the CFA’s programs, which emphasize experiential learning as critical to future generations of farmers. Many, if not all, of its participants are aligned toward the sustainable food system and strongly lean towards the organic/food sovereignty movement. CFA recognizes that sustainability is best achieved through a democratic process, which Hassanein (2003) calls food democracy and points out “is essentially a pragmatic device for moving toward sustainability of agriculture and food systems” (pg. 83). In providing the beginning farmers with real world experiences rather than

theoretical abstracts, CFA aligns with John Dewey's concept of lived experience (Hassanein, 2003, pg. 84).

The CBPR approach used to observe and analyze the case study indicated how the case study had taken advantage of and adapted to its locale, thereby showing that place matters for IFPs. From the initial establishment stages to where it is today, CFA has engaged with and drawn from a cross section of state organisations, private foundations, academic institutions, established farmers (large/small, organic/conventional), and private corporations. An example of this is how CFA tied itself to the Farm to Fork initiative that started in Sacramento. The Farm to Fork initiative highlighted the region's agricultural diversity and called Sacramento the "Farm to Fork" capital of the US. CFA took advantage of this initiative which drew upon the strong networks and resources that existed on the region. These partnerships helped to structure and build CFA and continue to support CFA with funding and knowledge and by default the beginning farmers that access CFA's services. The program has also been part of the tensions that exist in the sector: conventional vs organic, small vs large, economic viability vs environmental sustainability. CFA has generally navigated this space with a neutral attitude and kept the goals and visions of the new farmers it serves as the guiding principle. CFA, like other IFPs, helped new farmers establish the connections and networks that were critical to the success of their farms. By exposing new farmers to all types of farming, the program creates an awareness of all that is out there in the farming world but leaves the philosophical decisions of where and how they want to be aligned to the individual farmers.

In observing the new farmers that access CFA, I conclude that many new farmers subscribe to agroecological production methods and are very much locally based in their production trajectories and marketing approaches, which reinforces the place-based character of new farmers. By default, CFA also leans heavily towards the agroecological space even though it engages with

farmers across the farming spectrum. This raises an interesting conundrum especially because CFA is embedded in the community, which is still dominated by large scale agriculture where economic viability is the only measure of success, and CFA strives, to some extent, to establish a relational identity with this community. In striving for this identity CFA moulds the new farmers in the existing farming paradigm rather than striving for system change. However, this region (the Sacramento Valley) has a healthy mix of farming systems—small, large, organic, conventional, regenerative—which help CFA to stay balanced and not be subsumed. However, this is a tenuous balancing act that is not without its pitfalls and leads to occasional tensions, between the program’s philosophies and participants’ values. Despite these tensions the CFA program’s annual evaluations show that the new farmers who access it leave with a better idea of what farming is and have a well-rounded view of farming in the region, and many are either farming or working in the sector. I have heard many participants who have left the program say: “I would not be where I am today in farming without the CFA program”, which is a testament to CFA’s approach and philosophy.

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5. Conclusion: A New Generation of Farmers – Are IFPs Effective in Creating Them and Does the Food System Need Them?

5.1 Background

The need for a new generation of farmers is an issue that is gaining considerable traction across a diverse array of stakeholders in the US and Canada and in many other developed economies (Henriques, 2019). An ageing and declining farmer population has been central to the discourse around this concern. Indeed, the ageing farm(er) population is a global phenomenon: in the US the average age of farmers is 59 years, in Japan it is 67, and in Kenya it is 60 years. In addition, the farmer population in most nation states is on the decline as a proportion of total population. In 1989, approximately 50% of the world's population of five billion people were farmers; in 2019, this figure stands at 26% of the total world population of 7.5 billion (Catherine, 2018; Henriques, 2019). However, nowhere is the proportional decline in the farm population more pronounced than in North America's two largest economies where, today, only 2% of the total populations are farmers (Statistics Canada, 2016). In US and Canada, this issue went unnoticed or was ignored until the early 2000s. It was only after US Agriculture Secretary Tony Vilsack's testimony to the Senate in 2010 that this issue gained national recognition (Ahearn, 2011), and the need for a strategic approach to cultivating new and beginning farmers gained widespread traction.

The beginning farmer movement also coincided with the growth in the local food movement spurred by the urban consumers' desire to know where, how, and by whom their food was produced (Halwell, 2003). The local food movement was also spurred on by significant food contamination events that led the general public to question the safety of the industrial food system. The juxtaposition of the local food movement with the beginning farmer movement, though coincidental, benefitted new farmers tremendously (Halwell, 2003). According to Hamilton

(2011), “Many who are interested in becoming farmers today will be the people producing the healthy food tomorrow that will drive local economies and satisfy consumer demand for fresh local food” (pg. 564).

The efforts to find and train the next generation of farmers continues to grow across the US and Canada. The US Department of Agriculture through the “Agriculture Improvement Act of 2018 (aka the 2018 Farm Bill) reauthorized the Beginning Farmer and Rancher Development Program. This grant program provides mandatory funds that supports education, mentoring, and technical assistance initiatives for beginning farmers and ranchers” (USDA, 2019). Initiatives to train and support beginning farmers are primarily led by civil society organizations (Overton, 2014).

This dissertation focused on beginning farmer training programs, and in particular, IFPs. In exploring, analyzing, and arriving at conclusions about the IFP space, I drew from my decade long association with IFPs in the US and Canada, and my experiences conducting this research. This chapter is the concluding section of this dissertation and is presented in three substantive sections. The first section draws from the research on incubator farms that was the focus of this dissertation and analyses their role in supporting, training, and creating a new generation of farmers. I then take a step back and examine where IFPs, and the beginning farmer movement, are currently, and briefly explore some of the upcoming trends in farming. The third and final section strives to address the question, Does the food system need a new generation of farmers?

5.2 The Incubator Farm Program (IFP) – Its Role in Supporting, Training, and Creating a New Generation of Farmers

In this section, I draw from my research on IFPs through which I analyzed this space in detail and use this analysis to highlight how IFPs are helping to support and train a new generation of farmers. It is fitting here to explain why IFPs came to be in the first place, and to do this, I draw

from my close association with this space over the last ten years. This association led me to question the need for this kind of farmer training, and its contribution to creating the next generation of farmers. The constant questioning and introspection process eventually led me to undertake more formalized research, which I achieved through this doctoral study. As part of my research, I conducted an initial survey of the IFP landscape; this was then followed by an in-depth analysis of the programmatic space through selected case studies. As my research progressed, I realized that the IFP space was dynamic, with many nuances and locally contextual influences, which had rarely received the attention it deserved in research circles. This realization led me to take a deeper dive and use a place-based lens to study one IFP. This research, from the start, involved a constant process of reflexivity, wherein I compared my experiences with the results of my analysis across IFPs, which helped to bring a unique perspective of the inner workings of IFPs, and to a limited extent the beginning farmer movement.

Since the primary focus of this study is the IFP, it is pertinent here to ask the question, why incubator farms? Even a cursory glance of the data on incubator farms in this research and others indicates that access to land and infrastructure is one of the two main barriers that beginning farmers face, and IFPs help to alleviate this barrier at the start-up stages. Another area where IFPs play a major role is in building knowledge and skills and creating supportive networks. Traditionally, farming knowledge was transferred from generation to generation, and intergenerational knowledge transfer was critical to farming (Laforge & Levkoe, 2018). With the slow decline of the family farm as a rural institution, and rapid rural-urban migration, especially among youth, this form of knowledge transfer is now at a very low level. On the other hand, in the last decade a resurgence in the interest in farming especially from that outside of the farming sector has been observed. However, this cohort has very few opportunities to connect with the older

generation of farmers to learn and be mentored by them (knowledge transfer). IFPs play a critical role in this space by catering to the knowledge needs of beginning farmers in the areas of production, processing, marketing, and business planning. The efforts that these programs undertake come close to the kind of knowledge transfer that takes place on the family farm. This is in line with the pragmatist philosophy where knowledge is “not considered universal and applicable to any situation at hand; it should not be simply codified and stored in a database, knowledge must be seen in context and action. Most importantly, people must be willing to learn from each other” (Vo, 2012: pg. 85). In more recent times, apprenticeship programs have sprung up as part of the IFP landscape and are attempting to connect new farmers with the older generation of farmers and meet this need.

Apart from the knowledge and skills, IFPs play a vital role in providing beginning farmers the space to try out their ideas, make mistakes, and learn in a reasonably low-risk environment. This experiential learning component is critical in the beginning farmer's journey into farming. It is also the one aspect that defines and differentiates IFPs from college or university-based farm education programs. Experiential learning was an essential aspect of intergenerational farm succession and was a practical and well-tested pipeline for generating new farmers for many decades. IFPs are now trying to mimic this role, especially for those who come from outside of the farm sector, and until a better model is found to both provide the experiential learning and knowledge transfer the IFP continues to be the best model to meet this need (Obudzinski et al., 2017).

Evidence suggests that experiential learning is critical in new farmer renewal, and the opportunities in the current farm sector to provide this kind of training, through intergenerational succession, is low. Hence, the value and potential impacts of the IFP ‘concept’ seems obvious,

however, there remains much to learn and adapt about the ways and means by which IFPs will arise and function. Considering that most programs are only 10 to 15 years old, save a handful that were started in the 1970s, the model is still nascent. Hence, questions abound about the long-term impact of IFPs especially considering the substantial number of resources that are going into the movement. Will this concept be an effective vehicle to replace the current generation of farmers, especially given the challenges of ‘farming at commercial scale’ and the structure of the still dominant farm and food system? IFPs certainly provide a non-traditional pathway into farming for many aspiring farmers. Yet, the data collected through the interviews with program managers, the informal conversations with IFP staff, and my observations over the last ten years indicates that the number of established farmers coming out of IFPs is but a trickle. Does this mean that the model itself is fatally flawed or ill-suited to achieve a truly significant impact? It is too early to arrive at that conclusion considering the nascent nature of the model approach, but clearly the challenge at hand is great, especially if we are to envision an influx of people into farming from non-traditional pathways (i.e. non-agricultural, newcomers, second career). Furthermore, the nature of farming is such that there are many who will try but few who will persist. As Hamilton (2011) succinctly puts it, “many potential new farmers have a steep learning curve when it comes to food production. This lack of experience places a premium on the existence of programs that give prospective farmers opportunities for hand-on experience, while testing their interest and desire to become farmers” (pg. 557).

The SLA approach (Chapter 3) helped to demonstrate that building the financial, social, human, and physical assets is an important aspect of an IFP, but I would like to point out the homogenous nature of the services provided by IFPs. Despite the diverse populations they serve, vastly different geographic settings, and varying land extent, the findings at the landscape level

(Chapters 2 and 3) reveal that IFPs have a similar set of services, albeit with some differences. It is only when I delved deeper, through a single case study (Chapter 4) that I was able to discern subtle but important differences, and that IFPs are very much place-based initiatives. If IFPs are place based in nature, and the local context matters why do they all have the same kind of programming and services? Why is it that their physical attributes—age, populations served, geographic setting—are clearly visible, and without doubt diverse at the landscape level, but their services do not exhibit the same diversity at the landscape level? Is this lack of diversity in services contributing to the trickle of farmers they produce? Are IFPs caught in a delicate, and somewhat precarious, balancing act wherein in they have to exist in the realities of the current food system while trying to fulfill the aspirations/goals of their participant farmers who want to replace this food system? It is imperative that IFPs examine these aspects and dig deep into their collective hearts and minds to find the answers to these questions. There is a high probability, based on my observational knowledge, that these answers could make IFPs more effective, and move them from a fringe movement to becoming an accepted pathway for a new generation of farmers. Ideally, this will be a movement that will attract interest and investment from a wide range of stakeholders, and not just the farm sector alone, much like the structures that support minor league baseball across the US (Carlisle et al., 2019; Hamilton, 2011).

5.3 The IFP Movement – Is it Part of a Systemic Change?

The aspirations and goals of most beginning farmers accessing IFP programs are closely aligned to agroecological farming systems, and the sustainable food movement at large. They strive to establish resilient and community-based farms and become “advocates for healthy and sustainable food systems more broadly” (Laforge & Levkoe, 2018). In many ways, these beginning farmers, who cut across all racial lines, are foundational to the sustainable farming movement as

they will eventually be the future leaders of farming and food systems (Hamilton, 2011a; Niewolny & Lillard, 2010). While they are not activists in the real sense of the word, the fact that they give up, in many cases, well-established, and in some instances lucrative, careers to establish farms, and the efforts they undertake to do so is in a way an attempt to challenge the hegemony of the industrial food system. The space that beginning farmers have come to embody is subtler and nuanced, and with time has the potential to achieve the sustainability and resilience that many food system activists aspire to achieve. Beginning farmers of this age fit into pragmatism's "lifelong learners, moral thinkers, collaborators" (Tarrant & Thiele, 2016), and there is some evidence to indicate that this new generation is part of the shift away from the productivist agriculture model where the focus was mostly on per acre yields and economic benefits (Laforge & Levkoe, 2018; Milone & Ventura, 2019). Since IFP's primarily work with beginning farmers, it will be pertinent to examine IFP's role (or lack thereof) in this broader systems level shift, especially since they have framed their goal as creating the next generation of farmers. Studies to date, including this dissertation, on beginning farmer training programs, suggest that many who access these programs are inclined towards sustainable and agroecological systems of production (Carlisle et al., 2019; Laforge & Levkoe, 2018; Laforge & McLachlan, 2018). IFPs embrace the sustainable farming movement wholeheartedly (Obudzinski et al., 2017; Overton, 2014). The focus on sustainable agriculture also indicates that IFPs are responding to the needs of their participant farmers. A scan of the IFPs and other beginning farmer training programs across the US and Canada corroborates this fact. Thus, IFPs contribute to the growth of the sustainable and agroecological farming movement by supporting those who want to grow food under those systems. This growth does not mean that IFPs function entirely outside of the existing productivist agriculture regime. A 2017 survey conducted by NIFTI indicates that there is considerable focus

on the economic aspects of farming with financial training and business planning ranked just behind sustainable production (NESFP, 2017). This indicates that beginning farmers in IFPs are situated in and must navigate the existing economic frameworks and are impacted by regional and global trade dynamics.

IFPs arose out of the need to provide pathways for beginning farmers, primarily those from outside of the farming sector, to establish their farms. These programs have provided a meaningful and tangible first step for many beginning farmers. There is criticism that these initiatives are fragmented and underfunded (Carlisle et al., 2019), or they do not address the structural barriers that new farmers confront (Calo et al., 2016), or are geographically limited in scope (Laforge & Levkoe, 2018). There is the ever-present issue of these initiatives being subsumed by the entrenched and more powerful industrialized and neoliberal forms of agriculture rather than strengthening the agroecological systems that many beginning farmers want to be a part of (Laforge & Levkoe, 2018). Furthermore, the focus on farm economics shows that IFPs are part of the existing system rather than breaking out of it. Despite these observations and the untested nature in terms of their impact, IFPs are, at least for the moment, the most effective model to engage with beginning farmers and guide them to their next steps. A scan of participant evaluation of the CFAs Beginning Farmer Training program indicates that for even those participants who do not go on to start a farm, the time they spend, and the experience gained through the program are transformational and make them better food citizens. IFPs, by focusing their narrative solely on “creating a new generation of farmers” unfortunately do not capture the other benefits that arise out of the model, and by framing their narrative around “creating a new generation of farmers” the IFP movement might have done itself a disservice because it takes more than a four-year program to achieve this goal. On the other hand, IFPs help to build changes across the different asset

categories (Chapter 3) that will most likely have a positive impact in a new farmer's journey into farming. IFPs also provide opportunities for many aspiring farmers, and even if they do not go on to establish their own farms, the time they spent in an IFP imparts them with a heightened awareness of the intricacies of food and the food systems that it supports. In short, they come out of the IFP as better food citizens, who are as important as new farmers. Regardless, IFP efforts are a part of the incremental change (Hassanein, 2003) that the food system needs, albeit an important one, as without farmers it is difficult to see how a food system can exist.

5.4 A New Generation of Farmers: Does the Food System Need Them?

The farmer is an essential and critical part of the food system, especially if sustainability, resilience, and equity are to remain and become part of the food system. Yet, even casual observation suggests that the long relied-upon model of intergenerational family farm transfer can no longer be relied upon to keep the critical "human" component of the farm system in place. Farm consolidation and mechanisation over the last 100 years, and especially the past half century, have contributed to the steady decline in the number of farmers, and it masked the problem for a long period of time. It lulled many farmers, researchers, and food systems analysts into a false sense of security that somehow family farms will contribute new farmers to the sector. Linking the steady decline in farmer numbers with the joint phenomena of population ageing and youth out-migration from rural areas brings the stakes of these changes into sharper focus.

As farming enters the age of drones, robots, sensors, and complex computer-controlled systems, the question of whether the food system needs new farmers at all attains a different hue. Are these twenty-first century innovations going to make the farmer redundant, much like mechanisation reduced the number of farmers in the nineteenth century? Even if that sentiment is present, there are not many who are openly articulating it. Are we once again lulling ourselves into

a false sense of security with the hope that automation and related technology will fill the need? Will it be too late when we realize that this will not be the case? These are difficult questions that do not have straightforward answers due to the complex nature of farming. Even if the means are found to increase the number of farmers coming out of IFPs, structural issues like access to land (Naomi, 2018a), access to finances, and providing the farmers with a living wage need to be addressed. These are, especially the latter, as much problems of society at large as they are of the farm sector.

This research indicates that regardless of the food system needing new farmers or not, there are people seeking out pathways to become farmers. The observations I have made over the last 12 years not only reiterate this trend, but I have also seen a steady increase in the numbers of aspiring farmers. The mushrooming of beginning farmer training programs across the continent (especially the US) is a testament to this fact. This cohort consists of young people from urban areas, immigrants and refugees, and career changers. They range in age from 25 to 55 years and come from varied backgrounds, including a few from farming families. They seek out experiential learning opportunities rather than college or university education, which explains the role of IFPs. They come with skills that are both transferable and much needed by the sector, for example, marketing, financial, management, and IT, to name a few.

Comparisons can be made between today's beginning farmers and the "back to the landers" of the 1960 and 70s, but the resemblance ends there. Unlike the "back to the landers" movement that challenged consumerism, protested against war and deterioration in governance, the present-day new farmer movement has no such impetus apart from climate and environmental concerns. This movement has not witnessed mass mobilizations or widespread protests as in the 1960s and 70s. They struggle to access land to start their farms, unlike the "back to the landers" who found it

relatively easy to find farmland. Anecdotal reports of why people are seeking out farming is myriad and ranges from the philosophical to the spiritual to health related. Another unique aspect is that women are at the forefront of this movement when compared to the previous generation which was predominantly men. There needs to be more in-depth and ‘under the hood’ research to ascertain why this trend is taking place when the odds seem stacked against new farmers and the obstacles seem insurmountable. Until then, the question of whether the food system needs new farmers is irrelevant because there are many who are seeking out farming as a vocation. Training programs, including IFPs, need to keep learning and improving to provide the right steps and support to new farmers who leave the programs confident and capable of establishing their farms, and becoming the new generation of farmer’s and food system leaders. Creating the next generation of farmers is a tall order, and IFPs alone cannot achieve it, but these programs are essential in the beginning farmer's journey. IFPs need to also capture and communicate the values they impart to a person even if they do not establish a farm.

Additionally, other stakeholders like governments, agriculture departments, and even society at large need to support the efforts that create the conditions that allow these new farmers to succeed once they leave the IFP. Initiatives that include protecting farmland and providing it to new farmers or creating financial mechanisms to support start-up farmers or helping them earn a living wage are vital in creating the next generation of farmers. Creating the new generation of farmers and understanding new models of succession pathways are critical to the future of farming and food systems. As mentioned earlier, new farmer issues have not received the attention they should among academics, and this study addresses this gap; it will help better understand the needs of a new generation of farmers and their transition into the farm sector. These farmers will likely be the backbone of future farming and food systems.

5.5 Contributions and Lessons Learned – Policy Level and Applied

The process of conducting this research and writing this dissertation led to a number of lessons learned; lessons that confirmed some of my experiential observations or revealed new insights that were highlighted in the introductory chapter of this dissertation (page 25). The lessons that can help IFP program staff and contribute at the policy level are listed below:

a) Pathways into farming for those outside of the farm sector are not widely prevalent, and the IFP is, in all likelihood, the only way at this point in time for an aspiring farmer to learn the varied aspects of farming from hands-on experience (experiential learning). The other widely prevalent method is internships on farms, but these only serve a particular cohort of new farmer, and the quality of the experience is dependent on the individual farmer/farm. There is some criticism that interns are cheap labor for farms.

b) The IFP's immediate outcome is creating confident and capable new farmer, who can take the right next steps in their farming venture. IFPs provide a low risk and relatively safe space for new farmers to try out their ideas and learn. IFPs frame their outcome as creating the next generation of farmers. This framing is problematic as it takes more than a four-year program to create a farmer. IFPs need to re-think and reimagine how they present themselves and frame their narrative, and these are important aspects when communicating their impacts and engaging with policy makers.

c) The training and support programs that IFPs currently provide seem to be adequate to build the assets of new farmers (Chapter 3), but through this research it emerged that the training was homogenous in nature. This homogeneity is problematic when considering the diverse nature of IFPs (Chapter 2), and the place-based nature of IFPs (Chapter 4). Further research on the influence of place on IFP is necessary to understand the IFP space better.

d) IFPs play an important role in the farm succession landscape and they are a new entrant into this space. While an IFP plays a critical role in the start-up stages of a new farmer's journey it does little to help a new farmer surmount the structural barriers that exist especially around land access. Policy instruments and innovative forms of land tenure partnerships are the need of the day.

e) As Hamilton (2011) points out, long term investments need to be made into the new farmer space. Policy makers and governance structure need to have a forward-thinking vision if we are to be successful in creating a new generation of farmers. Strategies that support new farmers need to be supported over multiple years rather than the short-term approach that exists now.

5.6 Concluding Thoughts and Reflections

In concluding my dissertation, I cannot help but reflect on when I started this research, and where the world is today. The events of 2020 are too overwhelming in nature for me to continue to write this dissertation as if these events did not exist or were but a footnote. In September 2011, when I started this study, the local food phenomenon was accepted as a movement and not just a passing fad (Leeder, 2011; Mount et al., 2014). The discourses around climate change, resilience and sustainability were influencing food systems thinkers and farmers alike. The organic movement had gone mainstream, the appearance of organic produce in Walmart was a testament to this trend. In 2020, the world is in a global pandemic that is certain to have a profound effect on the food system, an effect we are yet to understand. In the early days of the pandemic people searched out local farmers, and CSA subscriptions increased dramatically. Regenerative agriculture is the new buzz word that even Google wants to take a bite of. Global food supply chains that we all take for granted are disrupted by an unseen force, COVID-19. Race and racism

related protest and discourses are widespread in the US and Canada and are changing many landscapes including food systems. Dispossession of, and access to land, for African-American farmers is front and center in the food systems world (Newkirk II, 2019). Farmworkers (mostly undocumented) suddenly became essential workers from being “unwanted criminals”. “Is this the crisis that is going to change food and farming systems?” is a question that often crosses one’s mind (Evan Fraser, 2020).

I have observed and heard, in my meetings as part of the NIFTI network, how many beginning farmers in the NIFTI network of IFPs have adapted quickly to the pandemic through online sales and local pop-up farm stands. Funding, government and private, is pouring into attracting people of colour into the farming sector and providing access to food to those who have lost livelihoods, some of it seemingly *ad hoc* and in reaction to the protests and the pandemic. Beginning farmers have been able to take advantage of the shorter food supply chains that they were already part of, and which is highlighted in this study. While the structural problems they face around land and finances (which also emerged through this study) still exist, there seems to be a silver lining courtesy of the pandemic. The danger lies in this new movement and awareness, which includes regenerative agriculture, not going the way of the organic movement as pointed out by Polgash (2014) writing about the gathering of the elders⁷ of organic farming at the Esalen Center in California,

While the farmers here were proud of their anti-establishment beginnings, their movement has since gone mainstream, and organic farming has grown tremendously. Their principles of local, seasonal fruits and vegetables have been replaced in many cases by year-round clamshelled tomatoes for Walmart, Target and other stores. The sustainable agriculture these

⁷ The elders of organic farming group consisted of Michael Ableman, Eliot Coleman, Jake Geust, Stephen and Gloria Decater, Betsy Hitt, Nash Huber, Jack Lazor, Amigo Bob Cantisano, Dru Rivers, and Tom Willey.

farmers practice goes beyond farming without synthetic fertilizer and pesticides. They adhere to a broader political and ecological ethos that includes attention to wildlife, soil, education and community. For most of them, the bottom line has never been their bottom line. (paras. 8, 9 ,11)

In the midst of all this, where does the IFP, the focus my research and my work over the last decade, stand? Through this research, I have discerned that the IFP, like the food systems it exists and lives in, vacillates between sovereignty and subsumption, and at this point in time it is for the most part in subsumption mode (Figure 1, page 10). Subsumption, in this context, refers to IFPs adopting structures of the existing conventional farming system, while sovereignty refers to breaking away and aligning with the alternative farming movement (organic, agroecological, regenerative). The findings around the structure of the programmatic space and the services suggest subsumption, while the goals and the place-based nature leans towards sovereignty. This also exposes the subtle tension between the IFPs' activities and the participant farmers' goals. Is the IFP space operating under the assumption that imparting 'technique-based' knowledge to aspiring farmers through an incubator or training program can be a catalyst for change (trickle-down theory)? Or is it proactively contributing to systems level change? This question is difficult to answer but the indications, based on my research and observations, are that it is leaning toward the trickle-down theory, namely the more aspiring farmers that IFPs reach and support will lead to food systems change. Over the last five months, I have also been part of a group of NIFTI member programs that is attempting to reimagine and define the future of NIFTI, which led to a change in its name to Farm Incubation and Experiential Land-Based Skills Development (FIELD) Network. The members of this group are also grappling with similar questions. It can be said with a fair amount of certainty that the IFP movement is at a moment in time when there are many forces in

play that have structural implications. Time will tell whether these forces help IFPs break free towards sovereignty or be subsumed into the Industrial-NGO complex. Regardless of the direction IFPs take, the new farmers they support will have to be heard and respected if IFPs want to be relevant and useful in the new farmer space, and all indicators are that new farmers prefer the shift to food sovereignty.

The farmer, both old and new, is the central theme of this dissertation. The generation that currently own and farms the land is for the most part homogenous and ageing. Aspiring and new farmers are culturally diverse, cut across the age spectrum, are market savvy, and are predominantly from urban areas. Efforts to help new farmers gain the knowledge and skills to enter farming are gaining traction across the US and Canada. Additionally, structured apprenticeship and mentorship programs that connect old farmers with new farmers are also gaining a foothold and are critical in transfer of experiential knowledge. Regardless of all these efforts and initiatives the land transfer question and the modalities of this transfer out of the family still looms. The efforts of IFPs and other similar initiatives that encourage and support new farmers will only be successful if we find innovative and outside the box answers to land transition and tenure.

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Appendix I: Ethics Approval



RESEARCH ETHICS BOARDS
*Certification of Ethical Acceptability of Research
 Involving Human Participants*

APPROVAL PERIOD: August 7, 2012
EXPIRY DATE: August 7, 2015
REB:
REB NUMBER: 12JL004
TYPE OF REVIEW: Delegated Type 1
PRINCIPAL INVESTIGATOR: Fraser, Evan (frasere@uoguelph.ca)
DEPARTMENT: Geography
SPONSOR(S): Canada Research Chairs
TITLE OF PROJECT: Foraging for Farmers: Identifying Pathways and Analyzing New Farmer Engagement Strategies

CHANGES:

Date	Document Name	Version	Change Summary
26-Feb-13	Application	2	A.1 Title; B.10 Methodology
22-Jan-15	Application	3	Change in methodology from interviews of individuals (staff and farmers) to interviews of staff and farmers in selected case study organisations, approximately 10 to 15 interviews
	Appendix 2	2	Changed introductory section to reflect case study approach
	Appendix 3	2	Changes to reflect the case study approach and the new title
25 May 2015	Questionnaire – Appendix 1 in REB application	3	Changes based on feed back from committee members and statistics expert

The members of the University of Guelph Research Ethics Board have examined the protocol which describes the participation of the human participants in the above-named research project and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement, 2nd Edition.

The REB requires that researchers:

- Adhere to the protocol as last reviewed and **approved** by the REB.
- Receive approval from the REB for any **modifications** before they can be implemented.
- Report any **change in the source of funding**.
- Report **unexpected events or incidental findings** to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants, and the continuation of the protocol.
- Are responsible for **ascertaining and complying with all applicable legal and regulatory requirements** with respect to consent and the protection of privacy of participants in the jurisdiction of the research project.

The Principal Investigator must:

- Ensure that the ethical guidelines and approvals of facilities or institutions involved in the research are obtained and filed with the REB prior to the initiation of any research protocols.
- Submit a **Status Report** to the REB upon completion of the project. If the research is a multi-year project, a status report must be submitted annually prior to the expiry date. Failure to submit an annual status report will lead to your study being suspended and potentially terminated.

The approval for this protocol terminates on the **EXPIRY DATE**, or the term of your appointment or employment at the University of Guelph whichever comes first.

Signature:

A handwritten signature in black ink, appearing to read "A. Papadopoulos", enclosed within a thin black rectangular border.

Date: May 25, 2015

A. Papadopoulos
Chair, Research Ethic Board-NPES

Appendix II: Limitations of this Study

The focus of this study is the IFP space and the beginning farmers that access the supports and services provided by IFPs. The singular focus on IFPs only and not on any other new farmer engagement strategies meant that this study was able to conduct an in-depth analysis of the IFP space. While the IFP is the dominant model in this space it is not the only one that engages with new farmers: for example, on farm informal apprenticeships and internships served as pathways into farming even before the IFP idea came into existence. This dissertation, by not considering the other models even at a superficial level limited the scope of comparing and understanding different pathways into farming. In 2011, when I started this research there were 46 operational IFPs. This number had grown to approximately 200 in 2019. While this growth is encouraging and indicates the concept's popularity it cannot be denied that some of the data used in Chapter 2 might be outdated. As the research progressed, I observed this growth in IFPs, and to account for this growth I took an active part in NIFTI meetings and included my observations in the study to keep this research relevant.

In this dissertation the new farmer is the central theme that resonates throughout but no input or data comes directly from new farmers. This lack of direct data from new farmers is definitely a limitation of this study. Instead, the IFP managers were used as a proxy for new farmers as they are in a position to provide both spatial and temporal data because they worked with a wide cross section of new farmers over a number of years. Additionally, IFP managers are able to articulate the subtleties and nuances in the programmatic space in an unbiased and open manner, which may not be the case with individual new farmers. Hence, to a certain extent, I was able to overcome the limitations of not collecting data directly from new farmers.

Appendix III: Survey Questionnaire

Basic Program Information

1. I have read and understood the above consent form and desire of my own free will to participate in this survey.

Yes No

This survey is focused on the ways in which land-based farm incubator programs aim to meet the needs of beginning farmers. First, the survey will ask for some basic information about your program.

2. Is your farm incubator program currently in operation (i.e., not in planning or development stages)?

Yes No

(If No) At this time, incubator programs in the planning or development stages are not eligible to participate in this survey. Thank you for your interest!

3. How long has this farm incubator been in operation?

Years in operation:
Year founded

4. Does your farm incubator program have access to land for participants to farm?

Yes No

(If No) At this time, incubator programs that do not have access to land are not eligible to participate in this survey. Thank you for your interest!

5. How much land does your incubator program have available for farming?

Size (total farmable acres):
Range of plot sizes (min-max acres):
Number of plots (total):

6. How many staff members (paid or unpaid) does this farm incubator program employ? Please include yourself.

Total incubator staff:
Full-time paid staff:
Part-time paid staff:

7. How many farmers are or will be farming on your training site this season?

Current number of farmers:

Current number of open training plots:

8. How many total farmers are currently participating in your program? Please include farmers who participate in marketing opportunities/CSA, continuing education, and other programs provided by your farm incubator.

Current number of participants:

9. How many farmers have participated in your incubator program to date? Please include all years your incubator program has been in operation.

Total number of participants:

10. Is there a limit on the length of time a participant can farm on a site at your incubator program?

Yes (please specify) No

11. What is the general time-line and progression of your program for a typical participant? If you would prefer to upload a document describing your program's time-line instead, please skip this question and answer the next question below.

12. If you would prefer to upload a document describing your program's timeline, you may do so by uploading the file here:

13. Does your program track the number of farmers who continue their own farming operations or stay employed in farming after leaving the incubator?

Yes No

14. (If No to Q13) How do you currently track the outcomes of your program? Please include both quantitative and qualitative measures.

15. (If Yes to Q13) What percentage of participants continue to farm after leaving the incubator? Your best estimate is fine. To select a percentage, click and drag on the sliding scales below:

Percent of former participants who continue to farm: 0-100%

Percent of former participants who are primary farm operators: 0-100%

Percent of former participants who are farm employees: 0-100%

16. (If Yes to Q13) How else do you track the outcomes of your program? Please

include both quantitative and qualitative measures

Participant Information

The next several questions ask for more detailed information about the participants in your farm incubator program.

17. What is the age range and gender of participants in your program? Your best estimates are fine.

Age range (min-max years):

Number of women:

Number of men:

18. What types of farm products do participants in this program typically produce? Select as many as apply:

Fruits; Flowers; Vegetables; Cheese; Dairy Products (excluding cheese); Grains; Beef; Baked Goods; Poultry; Honey; Pork; Jams/Jellies/Preserves; Fish/Seafood; Other, please specify:

19. Do participants usually enter your program with prior farming experience?

Yes, almost always.

No, not usually.

Our participants' prior farming background is mixed. Some have experience, others do not.

20. How much farming experience do participants typically have when they enter your program?

Average years of experience/Range of experience (min-max number of years):

21. What is the highest level of formal education your participants have generally completed when they enter your program? Please estimate the percentage of participants who have completed the following amounts of education. Your best estimates are fine.

Some elementary school (K-8): 0-100%; Completed grade school: 0-100%; Some high school: 0-100%; High school graduate or equivalent: 0-100%; Some college: 0-100%; Associate degree: 0-100%; Bachelor's degree: 0-100%; Post-graduate education (Master's, PhD): 0-100%; Total: 100%

Program Structure

The next few questions ask for more detailed information about the structure and organization of your incubator program.

22. Does your program use an application and selection process to choose participants?

Yes No

23. (If Yes to Q22) Please briefly describe your selection criteria:

24. Does this program provide any of the following services to participants?
Please check all that apply.

Free rent for incubator plots; Discounted rent for incubator plots; Free use of farm tools; Discounted use of farm tools; Plowing before growing season; Access to a greenhouse or hoop house; Free or discounted compost; Free use of walk-behind tractors; Discounted use of walk-behind tractors; Free use of driving tractors and other heavy equipment; Discounted use of driving tractors and other heavy equipment; Irrigation infrastructure (drip hoses, etc.); Discounted water; Access to office facilities (telephone, computer, etc.); Access to kitchen facilities for value-added production; Other (please describe):

25. Which of the following business types best describes the organization of this program?

Corporation; Program sponsored by a government agency; Non-profit Program sponsored by an academic institution; Sole proprietorship; Trust; Cooperative; Hybrid of at least two of the above (please describe); Other:

26. Please describe the fee structure of this program. If you would prefer to upload a document describing your fee structure instead, please skip this question and answer the next question below.

27. If you would prefer to upload a document describing your fee structure, you may do so by uploading the file here:

28. Incubator programs may rely on many different sources of funding. Please rank the following sources of funding for this program, where 1 is the most important source of funding and 8 is the least important. To rank, drag and drop each statement below:

Foundation grants; Revenue from farm products; Federal grants; Individual Donor Fundraising; University funding; Local government or State funding; Farmer fees (including rent); Other funding source:

Incubator Program Goals

Farm incubator programs may have many different goals. This section of the survey will ask questions about the goals of your program.

29. Is participation in your farm incubator program specifically geared toward beginning farmers? This survey defines a beginning farmer as an individual who has 10 years or less experience as a principal farm operator.

Yes No

30. (If Yes to Q29) Does your farm incubator program aim to serve a specific population of beginning farmers?

Yes No

31. (If Yes to Q30) Which populations of beginning farmers does your program aim to serve? For example, some programs are specifically geared toward immigrant/refugee farmers, low-income farmers, women, etc.

32. (If No to Q29) Who is eligible to participate in your farm incubator program?

33. Please indicate how important each of the following statements is to the overall goals of your program. If you have no opinion, please select "no opinion." (Not at all Important – Unimportant – Neither Important nor Unimportant – Important – Extremely Important – No Opinion)

- Providing resources that are specifically geared to the needs of beginning farmers.
- Providing training and skill development opportunities for beginning farmers.
- Encouraging participants to adopt sustainable farming practices.
- Giving participants the opportunity to learn from one another.
- Giving participants the opportunity to learn from mentor farmers.
- Including a mix of classroom and field-based learning.
- Encouraging participants to engage with local consumers and local markets.
- Helping beginning farmers establish independent agricultural businesses.

34. The previous list accurately represents the goals of my program.

Strongly Disagree – Disagree – Neutral – Agree – Strongly Agree – No Opinion

35. What goals of your program were missing from the list?

The last few questions of this survey will ask your opinion about a number of different activities that may be part of your incubator program.

36. Barriers to Entry/Technical Assistance: Below is a list of some practices that may help beginning farmers overcome the barriers they face in starting

agricultural businesses. Please indicate how important the following activities are in your program. If your program does not participate in some of the practices listed, please select "N/A." (Not at all Important – Unimportant – Neither Important nor Unimportant – Important – Extremely Important – N/A)

- Participating in programs that link new farmers with farmland.
- Purchasing farmland for participants to rent.
- Helping participants learn how to find their own farmland.
- Assisting participants with paperwork for federal programs.
- Educating participants about financial programs for which they may be eligible.
- Providing start-up loans to participants.
- Creating a market, stand or CSA for participants to sell their products.
- Connecting participants to institutional markets (schools, etc.)
- Educating participants about how to find markets for their products.
- Providing access to infrastructure (irrigation, greenhouses, etc.)
- Providing access to equipment (tractors, tools, etc.)
- Other:

37. Barriers to Entry/Curriculum: Farm incubator programs offer a wide variety of training and skill development opportunities. Please indicate how important each of the following types of training are in your program. If your program does not offer some of the types of training listed, please select “N/A.” (Not at all Important – Unimportant – Neither Important nor Unimportant – Important – Extremely Important – N/A)

- Business planning
- Marketing
- Financial planning
- Farm management
- Equipment selection and maintenance
- Equipment operation
- Organic production
- Biotechnology
- Crop planning and selection
- Crop production
- Livestock production
- Environmental issues (water, air, soil, wildlife)
- Innovative/new technologies
- Value-added production
- Sustainable production
- Fertilizer and pesticide application
- Other:

38. Civic Agriculture: Below is a list of some of the ways farmers might produce and sell their agricultural products. Please indicate how important you think the

following activities are for farmers in your program. If farmers in your program do not participate in some of the activities listed, please select "N/A."
(Not at all Important – Unimportant – Neither Important nor Unimportant – Important – Extremely Important – N/A

- Producing for local markets.
- Producing for national markets.
- Producing for global markets.
- Creating value-added products.
- Maximizing yield.
- Minimizing the cost of production.
- Producing high-quality products.
- Following a set of "best management practices."
- Making decisions based on site-specific information.
- Selling products directly to consumers.
- Selling products at farmers' markets
- Participating in a CSA.
- Selling products to wholesalers.
- Selling products to processors.
- Other:

39. Communities of Practice: Please indicate the degree to which you agree or disagree with the following statements about the participants in your program. If you do not have an opinion, please select "no opinion." (Not at all Important – Unimportant – Neither Important nor Unimportant – Important – Extremely Important – No Opinion)

- Participants are committed to farming as a career.
- Participants value the skills and abilities of their peers.
- Participants are proud to be part of the program.
- Participants interact regularly with one another.
- Participants share information and help one another.
- Participants often work together, in pairs or small groups.
- Participants often share stories about their past experiences to help solve problems.
- Participants write down routines, tips and tricks, and group rules.
- When someone comes up with a new way to do something, others adopt the idea quickly.
- It takes a while for new participants to be accepted by others.
- When participants have a conflict, a staff member often needs to intervene.

Respondent Demographics

40. Please provide some basic demographic information:

Your role/title in this program:

Your age (years):

Your gender:

Zip code where your program is located:

Name of your program:

41. I grant permission for the name and location of my program to appear in the final research study:

Yes No

42. Would you or someone else at your farm incubator program be interested in providing information for future research about your program?

Yes No Need more information

43. If you are interested in providing information for a future research or would like more information, please include your contact information below.

Name:

Email:

Phone:

44. Can you think of anyone at a different farm incubator program who should be invited to take this survey? If so, please include their contact information below.

Name:

Email or Phone:

Program Name:

45. Thank you very much for your participation! If you have any feedback about this survey, please provide it here. Your feedback will be used to help refine the survey for future use.

Appendix IV: Interview Guide

Introduction

Thank you very much for agreeing to be part of this research. The goal of this study is to establish pathways and analyze new farmer engagement strategies. This study will focus on selected incubator farm programs and I will be conducting in-depth interviews with selected incubator farm staff and participants in the US and Canada. The data collected from the case studies will be analyzed and used to develop metrics that can be used to measure/evaluate the impact of the incubator farm as a new farmer engagement strategy and identify pathways into farming for new farmers. The results will be shared with all interested participants and incubator farm programs.

A. Incubator Farm details:

1. Name of the Organization
2. Position held by staff answering this questionnaire and brief description of work?
3. Physical Details of Incubator Farm:
 - a) Land
 - Total extent
 - Extent rented to participants
 - 4) Number of years in operation:
 - 5) Location: Province/State, County, nearest large town/city.
- 6) Number of participant farmers
 - 1st year: #
 - 2nd year: #
 - 3rd year: #
 - 4th year: #
 - 5th year: #
 - Long term: #
- 7) How is the organization/incubator farm funded (as % or tick off one or more)
 - Participant farmer service fees – Land rent
 - Government Funding
 - Other funding

B. Incubator Farm Support Programs

The following four “assets” have been identified as crucial for new farmers as they begin the process of starting their farm enterprise. A few examples of these assets are also listed.

Financial – access to start-up capital, budgeting and business planning knowledge

Social – mentor and peer networks, family support, community linkages

Personal/Individual – motivation, capacity, knowledge levels, resilience to adversity

Physical/Productive – land, equipment, market access

It is assumed that most incubator farms, through their programs and support structures, contribute to building these assets among their participants. In this section, I will ask you a few questions to assess how your organization helps to build the assets of your new farmer participants.

In answering these questions, I would be delighted if you could provide me with examples or stories that will help me identify the depth and breadth of these issues.

I. Financial Assets

1. Do you provide grants and/or loans to beginning farmers? Do you think this support is important, if yes, can you explain how?
2. Does your organization receive government grants to pass on to new farmers? How important is it to have this kind of support?
3. Do you provide access to knowledge of where to access start-up financial capital? Please explain how.
4. Do you provide business-planning resources for new farmers? Do you think your participants know how to write a business plan? Why do you think a farm business plan is important for a new farmer?
5. Do you track the yearly net income of participant farmers? How important is this aspect in assessing the progress of your farmers?
6. Do you help new farmers who participated in the incubator farm obtain the capacity to approach lending institutions for capital to start their own farm enterprises? If yes, can you provide how and when they have done so and if they have been successful?

II. Social Assets

1. How does the incubator farm provide or build a supportive community for new farmers? Can you briefly provide examples?

2. To what extent does your organization have a network of mentors to refer the new farmers to for advice and guidance? Why is it important for new farmers to have mentor support? Can you explain how you identify good mentors?

3. Is there a peer group that the organization provides to support new farmers? Please explain if you think peer to peer support is important for new farmers and how?

4. Does your organization provide participant farmers with cooperative structures – in marketing, managing equipment etc.?

5. To what extent do you encourage farmer-to-farmer knowledge transfer on the farm? Is it a structured and informal process? What is valuable about this process?

III. Personal/Individual Assets

1. Do you assess motivation and confidence levels of participant farmers? If yes how? Do you think this is important and why?

2. Do you provide coaching and skills building opportunities? Please provide details of these opportunities.

3. Do participant farmers have access training and resources that helps to build their capacity? Can you describe how you do this?

4. To what extent do you think that participant farmers have the confidence to start their own enterprises at the end of their tenure on the incubator farm? How do you assess this aspect?

IV. Physical/Productive Assets

1. What is the extent of land that you provide participant farmers? (maximum and minimum)

2. What is the length of land tenure you offer to participant farmers?

3. List the equipment you provide participant farmers and whether you also provide training to operate the equipment?

3. Do you provide storage, cooler and green house space for participants?

4. Do participants get assistance to buy seeds, tools and equipment?

5. Do you assists participants with marketing their produce, if yes, how? (Wholesale, retail, other market linkages). Is it critical for the organization to provide this support or should farmers develop their own markets? Please explain why?

C. General

1. How important does your organization consider the four assets in new farmers' establishment periods?

Assets		Very Important	Important	Neither Important Nor Unimportant	Unimportant	Very Unimportant
Financial	Access to capital					
	Budgeting Skills					
	Business Plan					
Personal/Individual	Confidence/Motivation					
	Marketing skills					
	Work capability					
Social	Family Support					
	Peer network					
	Mentors/Advisor					
Productive/Physical	Access to land					
	Knowledge of tools and equipment					
	Market sources					

Please explain the rationale behind your rankings.

II. How would you rank the following entrepreneurial skills and tasks in a new farmers development process:

Entrepreneurial Skills ⁸	Very Important	Important	Neither Important nor Unimportant	Unimportant	Very Unimportant
Establish and achieve goals and objectives					
Ability to take calculated risk					
Strategic Planning					
Financial planning and analysis					
Control costs					

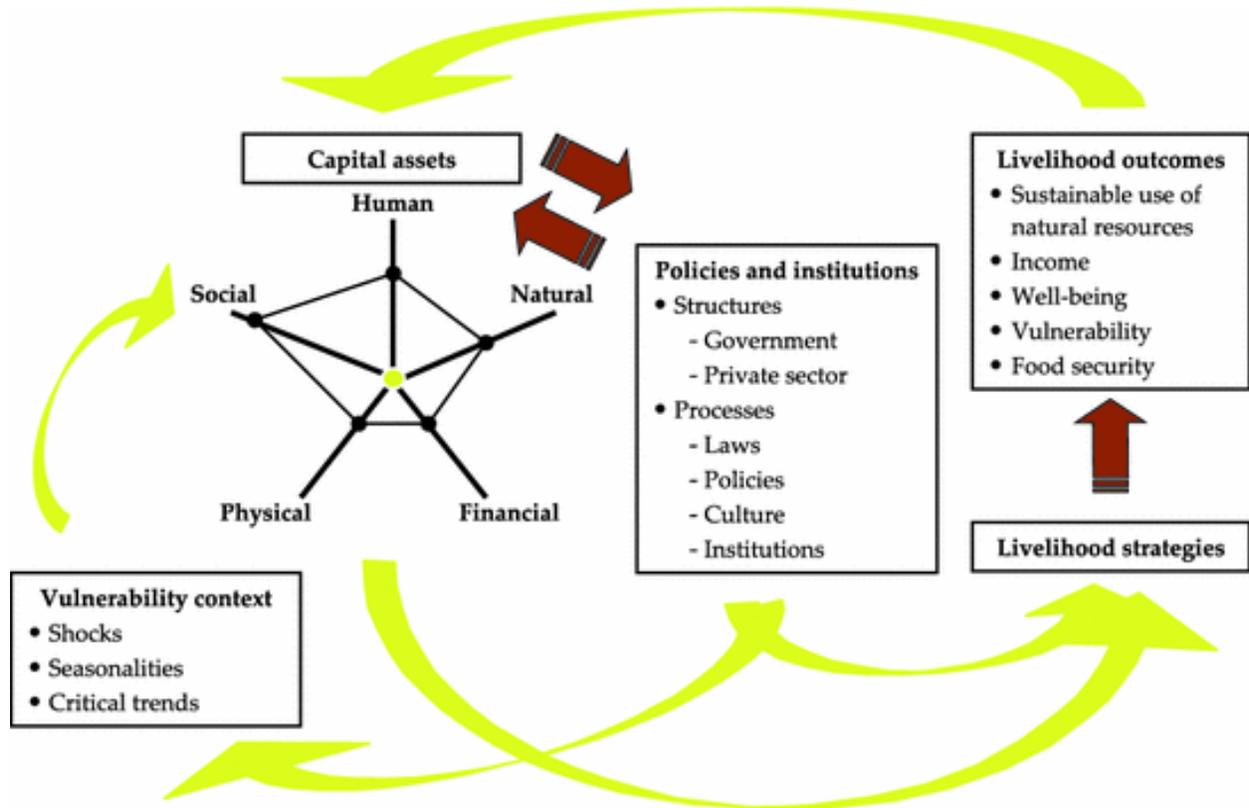
Marketing and market analysis					
Innovation – new methods of production, marketing and management					

Please explain the rationale for your rankings.

2. What are the main barriers that new farmers face in your region? In general, how do participants overcome these barriers? How does your organization help new farmers overcome these barriers?
3. Can you provide details of a few of your participants who have been successful in establishing their own farm enterprises? In your opinion why were they successful? Details of those who fail and those who drop out?
4. Do you keep track of the participants who drop out of your program? What factors contribute to participants dropping out from the program?
5. Please explain in detail the significant characteristics that you have observed between those who succeed and those who drop out?
6. How do the four assets listed above contribute to the success or failure of your participants?

Thank you very much for your time.

Appendix V: Sustainable Livelihoods Approach



Source: Serrat, O. (2017). *The Sustainable Livelihoods Approach*. Knowledge Solutions. Singapore