

**Creating an Agricultural Internship for  
Mount Wolfe Forest Farm, Caledon, Ontario**

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## Executive Summary

As more and more people become aware of the problems associated with the industrial food system, there has been a rising demand for organic, local and nutritious food. In response, small- to medium-scale, ecologically-oriented farms have blossomed throughout Canada, the United States (US) and Western Europe. This method of agriculture is labor-intensive, uses less land, rejects the use of chemical pest- and herbicides, and has a greater diversity of crops compared to industrial farming techniques. As there are not many higher educational institutions that focus on this method of farming, farmers have taken educating the next generation of farmers into their own hands.

Mount Wolfe Forest Farm (MWFF) is a small-scale year-round community supported agriculture (CSA) business located outside of Caledon, Ontario on the Oak Ridges Moraine (ORM). The farm is interested in creating an internship program in order to replicate their values and business across the landscape of the ORM. By creating a network of ecologically-oriented farms across the landscape, MWFF hopes to create a more resilient food system that will impact the political and economic systems of the region. The research focuses on giving a set of recommendations to MWFF that can be used to create an agricultural internship program that will having impact on the landscape of the ORM.

Research was done on legalities concerning internships in Ontario, as well as on the pedagogical methods involved in internships. Following the analysis of interviews with agricultural internship experts, grey literature regarding hosting internships and a comparison of internship programs throughout North America, a set of 10 recommendations were developed. The recommendations are focused on 3 key themes and are as follows:

### *Internship Logistics*

1. Interns should be reimbursed for work done on the farm by means of monetary compensation and access to room and board.
2. MWFF should design a clear and concise contract for interns, outlining expectations for intern and farmer, compensation and educational outcomes.
3. MWFF should focus on attracted experienced interns who have experience working on ecologically-oriented farms.

### *Curriculum Components*

1. Use curriculums that are already available for use and integrate values and goals of MWFF into the program.
2. Use a mixture of teaching methods including, but not limited to, field trips, field demonstrations, workshops, readings and lectures.
3. Join the CRAFT network to access resources, possible interns and CRAFT education days.
4. Let interns create learning goals at the beginning of the season and provide feedback in relation to these goals and learning as a whole. Allow interns the ability to give feedback to the farm.
5. Create a way for interns to stay connected the farm, its resources and expertise after they graduate.

### *Decrease New Farmer Barriers*

1. Create a network of landowners who have land available to farm to help graduates of internship program.
2. Work to affect change on the political economic systems of the ORM that will help out new farmers by creating funding schemes and possibly laws and regulations.

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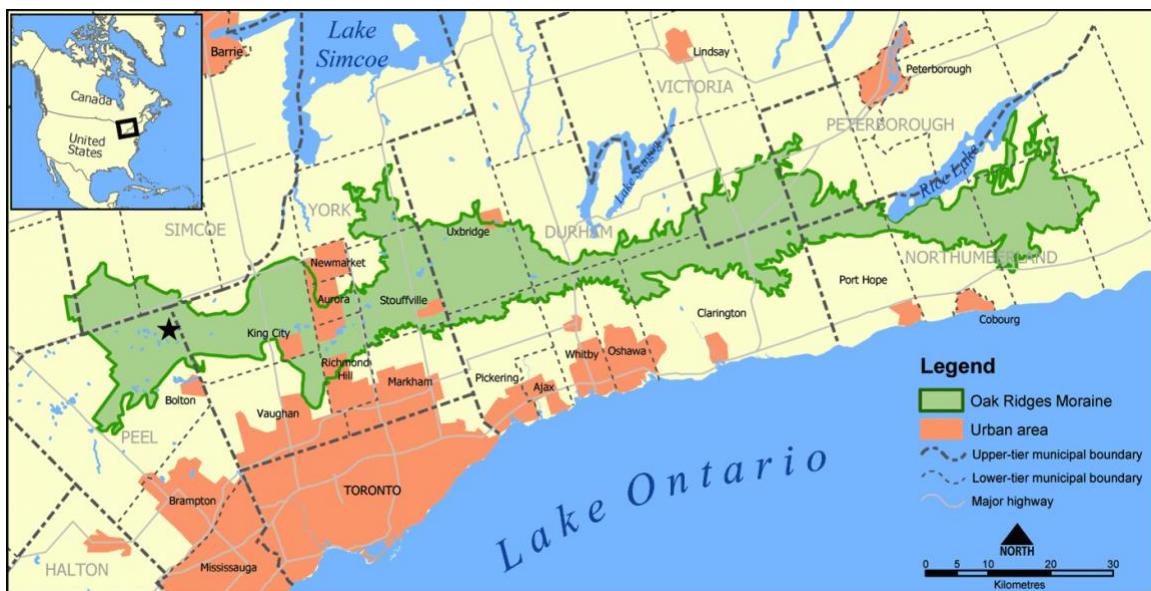
## 1.0 Introduction

As more and more people demand access to organic, local and nutritious food, small- to medium-scale, ecologically-oriented farms have blossomed throughout Canada, the United States (US) and Western Europe (Weiler, Otero & Wittman, 2016). Agroecology is defined as the, "...application of ecological concepts and principles to the design and management of sustainable agroecosystems" (Gliessman, 2000, p.13). Sustainable agriculture refers to farming that does not use chemicals, rebuilds soil fertility, conserves water and works within a community to provide healthy, organic food (Gliessman, 2000, p.13). This method of agriculture is labor-intensive, uses less land, and has a greater diversity of crops compared to industrial farming techniques (Wezel, et al., 2009). These local food providers centre their production on community-shared agriculture (CSA) business schemes, farmer's markets, and other direct-market sales (Dunning, Bloom & Creamer, 2015).

The Oak Ridges Moraine (ORM) is a unique and environmentally sensitive landscape that stretches from Caledon to the south of Peterborough, and is protected by Ontario law under the Oak Ridges Moraine Conservation Plan (Oak Ridges Moraine Policy Team, 2016). Mount Wolfe Forest Farm (MWFF) is a small-scale year-round CSA business located near Caledon, Ontario on the ORM. Figure 1 outlines the ORM and the star indicates the approximate location of MWFF.

MWFF grows vegetables, fruit and poultry, as well as partners with other local suppliers of maple syrup, preserves, bread and eggs in order to serve 100 families. The farm is located on a 70-acre property that was reforested 50 years ago, when the

current farm operator's parents purchased the land. Their values lie in caring for the land and furthering their parent's conservation efforts, as well as operating a farm business that provides fresh, local food to the community. They farm uses various ecological approaches to farming, including the use of free range chickens to fertilize the soil and to manage insects, and rotating vegetable fields (Mount Wolfe Forest Farm, 2017).



**Figure 1.1.** Map of the Oak Ridges Moraine. The star indicates the approximate location of Mount Wolfe Forest Farm in Caledon, Ontario. Retrieved from NormanEinstein. (2005, May 27). *Oak Ridges Moraine map*. Retrieved [https://commons.wikimedia.org/wiki/File:Oak\\_Ridges\\_Moraine\\_map.png](https://commons.wikimedia.org/wiki/File:Oak_Ridges_Moraine_map.png)

In response to the eco-centric farming movement, many people, who have little-to-no on-farm experience, want to be able to participate and operate their own farms (Ekers, Levkoe, Walker & Dale, 2016). These people, or “new farmers,” need to be educated in order to grow a successful farm business (Ekers & et al., 2016). In response to this, education has been taken into the hands of farmers to teach the next generation

through internships and apprenticeships. An agricultural internship is a method of agricultural education that involves a person, who is interested in learning how to farm, live and work on a farm for the growing season. During this time, the intern learns how to farm directly from the grower. Various organizations and farms already have their own internship programs with varying degrees of work and formal education methods (Biernbaum, Thorp, & Ngouajio, 2006; Everdale, n.d.; FarmStart, 2016; CRAFT, n.d.; Perez, Parr & Beckett, 2010; Parr, Trexler, Khanna, Battisti, 2007).

MWFF has expressed interest in creating a network of farms across the ORM by replicating its business and values across the landscape. To do this, MWFF wants to operate an agricultural internship program on their farm that is resilient and replicable. This research will provide a series of recommendations to MWFF that can be used to create an internship program. Pedagogical approaches (sample refs?) were researched in order to determine the best methods of teaching, as well as using the internship program as a catalyst for systems change. Interviews were done with agriculture internship experts in order to determine the best methods of running an internship, and compared to the grey literature available to farmers who want to start their own program. The recommendations will be provided to the farm, who can then choose to implement them as they see fit.

## **2.0 Literature Review**

The following section covers the relevant literature for this research. The first section will cover the present industrial agriculture systems that are in place in Canada and North America, followed by a section about the “New Food Movement” and the growing demand for local, organic food. The literature pertaining to apprenticeship and agriculture education was assessed to determine the current pedagogical methods that are used to teach students’ agricultural practices, food systems and apprenticeship or intern programs. The legalities of agricultural internships are also outlined in this review. Finally, a conceptual framework was created in order to synthesize the literature and to help guide the analysis for the rest of the research.

### **2.1 The Industrial Agricultural Systems**

The Green Revolution of the 1960s was a reaction to a growing population, and a demand for cheap food all over the world (Pingali, 2012; Pinkerton & Hopkins, 2009, 11). Research was conducted to find crop breeds that would fair better in less-than-ideal climates, which included selective breeding of high-yielding, drought-resistant crops and the use of chemical fertilizer, herbicides and pesticides (Pingali, 2012). These technologies resulted in a boom of food, which dropped market prices (Pingali, 2012; Pinkerton & Hopkins, 2009, 11). Canadians and Americans continue to pay some of the lowest prices for food, in comparison to income, in the history of the world (Thompson, 2001).

In response, private companies dominate the control and sales of herbicides, fertilizers, pesticides and seeds (Pingali, 2012; Thompson, 2001). Farms have become larger in order to equalize investments, but the number of farmers in North America has decreased, despite the continued demand for food (Beaulieu, 2015; Thompson, 2001). New technologies, such as genetically modified plants (GMOs) continue to centralize food control to large agro corporations (Pingali, 2012; Woodhouse, 2010). The present food system is dependent on the use of oil to power both the large equipment that farmers use, and in transportation of produce (Pinkerton & Hopkins, 2009, 13; Woodhouse, 2010). Despite Canada's large agriculture sector, much of the food sold in grocery stores is sourced from other countries (Dunning, Bloom & Creamer, 2015).

Originally viewed as the answer, industrial agricultural has failed to solve world hunger and malnutrition continues to be a problem (Pingali, 2012). While grocery stores provide us with a world's worth of food diversity, North Americans still have many dietary-related health problems and rarely consume the recommended amount of fruits and vegetables (Dunning, Bloom & Creamer, 2015; Rehm, et al., 2016; Wilkins, Farrell & Rangarajan, 2015). Industrial farming is based on efficiency and cost, and rarely accounts for ethics, animal welfare, and equality (Follett, 2009). Environmental impacts of industrial agriculture include soil compaction, erosion and nutrient runoff into groundwater and surface water sources, loss of biodiversity from the use of chemical sprays, salinization, and climate change impacts from fossil fuel release (Pinkerton & Hopkins, 2009, 13; Woodhouse, 2010).



While most farms in Canada focus on industrial level oilseed, grain, beef, and hay production, there has been an increase in the number of certified organic growers (Statistics Canada, 2016). Between 2001 and 2011, certified organic growers have risen 66.5%, and many small farms may not have certification despite using organic methods (Statistics Canada, 2016). This move towards organic certification may still fall within the confines of industrial agriculture as price and demand regulate the market, and much of the food may still be from across the world, marginalizing the positive impacts on climate change (Thompson, 2001). The search continues to find sources of better, decentralized, healthy food and a push for local, organically grown food has arisen in North America.

## **2.2 The New Food Movement**

Over the past number of years there has been a move to improve access to organic, locally grown food and reduce dependence on industrial food systems (Follett, 2009; Pinkerton & Hopkins, 2009, 21; Ngo & Brklacich, 2014; Weiler, Otero & Wittman, 2016). Consumers who value/prioritize moral obligations above the present economic structures, and the producers that put these systems in place through small-scale sustainable farms support this alternative food system (Pinkerton & Hopkins, 2009, 21; Weiler et al., 2016). Alternative food systems are defined as the rejection of conventional food systems, bringing of wealth back to the farmer and the community, transparency and trust and the creation of new forms of political movements and market economies (Follett, 2009; Wilkins, Farrell & Rangarajan, 2015). These local food

systems put relationships, transparency, sustainability and choice above the present system, while decentralizing control from large corporations and diversifying the food market (Follett, 2009; Weiler et al., 2016). Since everyone buys food, consumer choices can play a crucial role in system changes.

A number of alternative food systems have emerged, such as farmer's markets, corporate organic food markets and community-supported agriculture (CSA) (Follett, 2009; Pinkterton & Hopkins, 2009). CSA's are an alternative food system where consumers, or shareholders, pay an upfront cost for the season or year, and in return receive a weekly or biweekly share of in-season produce (Pinkterton & Hopkins, 2009, 102; Wilkins et al., 2015). It is considered a "win-win" for both consumer and farmer, as the consumer receives season appropriate, local food while the farmer develops a direct market (Pinkterton & Hopkins, 2009, 102; Wilkins et al., 2015).

Along with this changing food movement, farmers in Canada are aging, with less young people involved (Beaulieu, 2015; Ngo & Brklacich, 2014). Most farmers are 50 years old or more, with half of all farmers being over the age of 55 in 2011 (Beaulieu, 2015; Ngo & Brklacich, 2014). In response, movements, such as the National Farmers Union and Young Agrarians, work to involve young people in agriculture and create a new generation of young farmers who are ecologically oriented (National Farmers Union, n.d.; Ngo & Brklacich, 2014; Young Agrarians, 2016;). In response, new models of agricultural education have had to be developed (Hill & MacRae, 1988; Follett, 2009; Niewolny & Lillard, 2010; Ngo & Brklacich, 2014).

Small-medium size sustainable farms have taken on the role of educator, teaching young people, many with little-to-no experience, how to farm in an ecological oriented manner (Ekers, Levkoe, Walker & Dale, 2015; Niewolny & Lillard, 2010; Ngo & Brklacich, 2014). Over the last decade there have been more and more people looking for experience on organic farms, whether through season-long internships where labour is traded for room, board and farm knowledge, or through programs such as World Wide Opportunities on Organic Farms (previously Willing Workers on Organic Farms) (Ekers et al., 2015; Perez, Parr & Beckett, 2010).

Organizations such as the Collaborative Regional Alliance for Farmer Training (CRAFT) have sprung up throughout North America in order to provide future farmers, and those interested in growing, opportunities to intern on farms throughout Ontario (CRAFT SW Ontario, n.d.). The CRAFT network links farms and interns, while also providing workshops, seminars and field trips to help supplement learning. Interns are able to network and socialize amongst each other while learning to farm. Internship programs such as these are becoming much more prevalent in Canada, the United States and Western Europe (Ekers et al., 2015; Niewolny & Lillard, 2010; Perez et al., 2010). While post-secondary schools are starting to create programs to educate new farmers, they are still far behind and other methods of pedagogy have had to be developed (Biernbaum, Thorp, & Ngouajio, 2006; Hill & MacRae, 1988; Niewolny & Lillard, 2010; Parr, Trexler, Khanna, Battisti, 2007).

### 2.3 The Legalities of Internships

A study by Ekers et al. (2015), which surveyed 139 small- to medium-scale ecologically-oriented farms in Ontario, found that 65.6% of the labour force used was non-waged workers. Historically this would have been family and friends, but more recently are off-farm workers, including interns (Ekers et al., 2015). It is therefore important to understand the legalities surrounding agricultural internships in order to provide a safe learning environment for the intern and to protect the farm business.

A guide titled *Nurturing new farmers: A practical guide to hosting interns and monitoring the next generation of farmers*, published by the Ignatius Jesuit Centre, an agricultural internship provider in Guelph, Ontario, states that interns must be included on the payroll if they are provided with a stipend and/or room and board (Hall, 2015). This way the intern can also access employment insurance. The guide also outlines that while a fulltime employee must be paid minimum wage, a farm labourer may be paid less than minimum wage. Farm operators must also consider health and safety laws while during the internship (Hall, 2015).

Ontario's Employment Standards Act, 2000 states that if a person is performing work for another person, company or organization that they are not in business with, then that person is considered an employee and is entitled to minimum wage (Ontario Ministry of Labour, 2011). A person receiving training, such as an intern, is not considered an employee if they meet all of the six following conditions:

1. *The training is similar to that which is given in a vocational school.*
2. *The training is for the benefit of the intern. You receive some benefit from the*

- training, such as new knowledge or skills.*
3. *The employer derives little, if any, benefit from the activity of the intern while he or she is being trained.*
  4. *Your training doesn't take someone else's job.*
  5. *Your employer isn't promising you a job at the end of your training.*
  6. *You have been told that you will not be paid for your time.*

(Ontario Ministry of Labour, 2011).

This must be taken into consideration when deciding how the agricultural internship will operate in terms of employment legalities. Since the intern will help with the farm work to some degree, the farmer does receive benefit from the intern, therefore not allowing all six conditions to be met. At the same time, few people can work for free, and a small stipend may provide a more attractive internship.

### *2.3.1 Operating within the Oak Ridges Moraine Conservation Plan*

The land that MWFF is on is part of the Oak Ridges Moraine Conservation Plan that provides, "...land use and resource management direction for the 190,000 hectares of land and water within the Moraine." (Oak Ridges Moraine Policy Team, 2016). Land is classified under four different land use designations: natural core areas, natural linkage areas, countryside areas and settlement areas. The farm has been designated as a natural linkage area and therefore must operate within a certain boundary. The only uses that are allowed in this designation are, "...existing uses and very restricted new resource management, agricultural, low intensity recreational, home businesses,

transportation and utility uses...and some aggregate resource operations” (Oak Ridges Moraine Policy Team, 2016). This restricted land use plan may cause issues when trying to create an internship program, especially if the owners want to partner with another institution for the program. For now, the plan will allow the farm to have their own internship program that can operate independently from other organizations but may become a concern as the internship progresses.

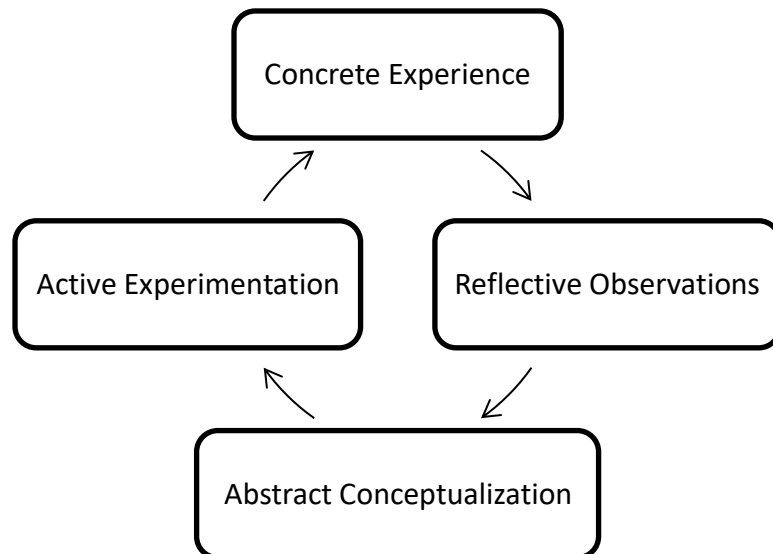
## **2.4 The Pedagogy of Agricultural Internships**

Learning as described by Bloom (1956) is broken down into three domains: cognitive, psychomotor and affective learning. Cognitive learning refers to the acquisition of knowledge, which includes memorization, comprehension, application, analysis, synthesis and evaluation (Bloom, 1956). Psychomotor learning is the acquirement of physical and mechanical skills (Bloom, 1956). Affective learning is the attitudes and feelings obtained through the learning process that bridges the gap between knowledge gained and actions taken (Bloom, 1956; Perez et al., 2010). In order to develop a meaningful agricultural internship, all three domains of learning must be addressed (Perez et al., 2010).

### *2.4.1 Experiential Learning*

Experiential learning is an integral part of agricultural internships, as skills are taught, practiced and applied in the field. Experiential learning focuses on concrete experiences, where the student is an active part in the learning experience (Kolb, 1984).

As seen in Figure 2.1, it is a positive feedback loop that describes learning as a continual process where reflection plays an important role in conceptualizing larger ideas (Kolb, 1984). Experiential learning is crucial to agroecology in providing hands-on experiences and opportunities for experimentation, and implementation outside of the internship (Lund, et al., 2013; Meek & Tarlau, 2015; Perez et al., 2010). The reflection aspect of experiential learning is important to help process thoughts and questions that arise from the experience and to start reaching for Bloom's (1956) affective learning domain (Perez et al., 2010). This is why many internship programs incorporate on-farm training and a mixture of workshops and formal classroom lessons (Lund, et al., 2013; Meek & Tarlau, 2015; Perez et al., 2010).



**Figure 2.1.** Kolb's (1982) Experiential Learning Cycle. Learning is a continual process that moves from concrete experiences, to reflecting on these experiences, to abstract conceptualization and then experimenting with the learned knowledge. Since learning is ever evolving, experimentation results in new concrete experiences, as so the loop continues. Retrieved from Kolb, D. A. (1984). *The Process of Experiential Learning in Experiential learning: Experience as the source of learning and development* (pp. 21). Englewood Cliffs, New Jersey: Prentice-Hall.

Experiential learning is the basis of most agricultural internship programs but in many cases, the teaching goes beyond simply teaching interns how to farm.

Conceptualization allows the interns to view themselves within a larger system and influences their understanding of sustainability. Sustainability is not something that can be explicitly taught in a classroom, but is inherently based on a set of values that the learner must develop for themselves through experiences and interacting with other people (Galt, Clark & Parr, 2012).

#### *2.4.2 Value-Oriented Learning*

Value-oriented learning is part of Bloom's (1956) affective learning domain and part of Kolb's reflective and action phases of the experiential learning cycle (see Fig. 1). Values are a set of beliefs that determine that something is of importance and can influence worldviews (Galt et al., 2012). Value-oriented learning, as defined by Galt et al. (2012), involves, "...paying explicit attention to the values that (1) underpin different agricultural and food systems and their governance, (2) inform and shape education strategies and experiences, and (3) are held by different individuals in various encounters in the learning environment," (p. 2). There are a number of different ways to influence and teach students about values including integrated learning, situated learning, and action learning, all which can be related to agricultural internships.

*Integrated learning* is learning that connects experiences, and their associated skills and knowledge, to theoretical frameworks and methods of teaching to develop a more aware and interdisciplinary student (Galt et al., 2012; Huber & Hutchings, 2004).



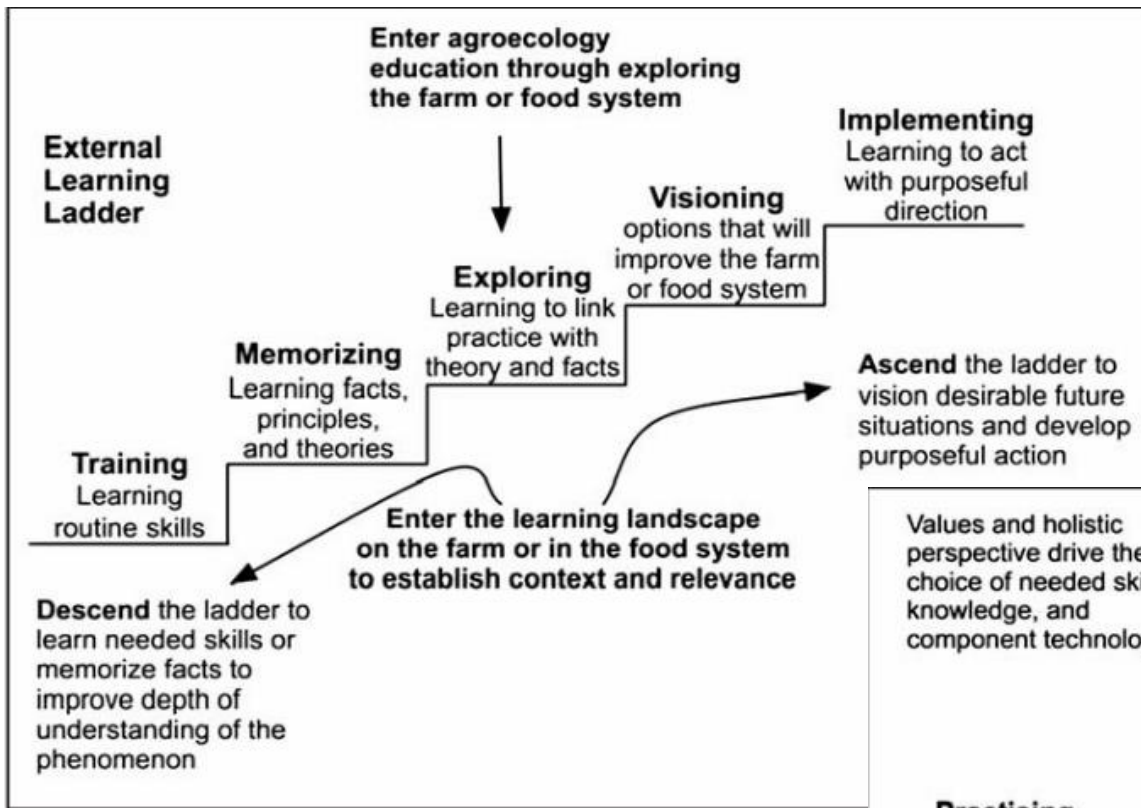
*Situated learning* develops understanding through collaboration and discussion that helps develop their perspective and change their worldview (Lund, et al., 2013). Students work alongside masters and peers to develop their own skills and create meaningful experiences (Perez et al., 2010). *Action learning* takes into account the student's feelings and values in order to solve real-world problems through experimentation and reflection (Lund, et al., 2013). Action learning works to bridge that gap between knowledge and action that is essential to sustainability (Lund, et al., 2013). All of these learning styles are forms of experiential learning and can be incorporated into a curriculum in order to influence the values of agricultural interns.

Østergaard, et al., (2010) draws on the experiential and value oriented learning methods to create a dual learning ladder specifically for agricultural education, as seen in Figures 2.2 and 2.3. The first ladder is the external learning ladder, as seen in Figure 2.2, where the student receives knowledge through training, memorization and experimentation. From here, the student envisions their place in the greater food system, and begins to implement their knowledge purposefully. The second learning ladder is the internal learning ladder, which is the idea-making process, as seen in Figure 2.3 (Østergaard, et al., 2010). The student goes through a series of steps that connects learned knowledge in food systems with the wider world, which results in the student acting on the new values that have been imparted on them (Østergaard, et al., 2010). This model draws on Kolb's learning cycle, while also bringing it beyond where the student's values are changed and worldview shifts. Østergaard, et al., (2010)

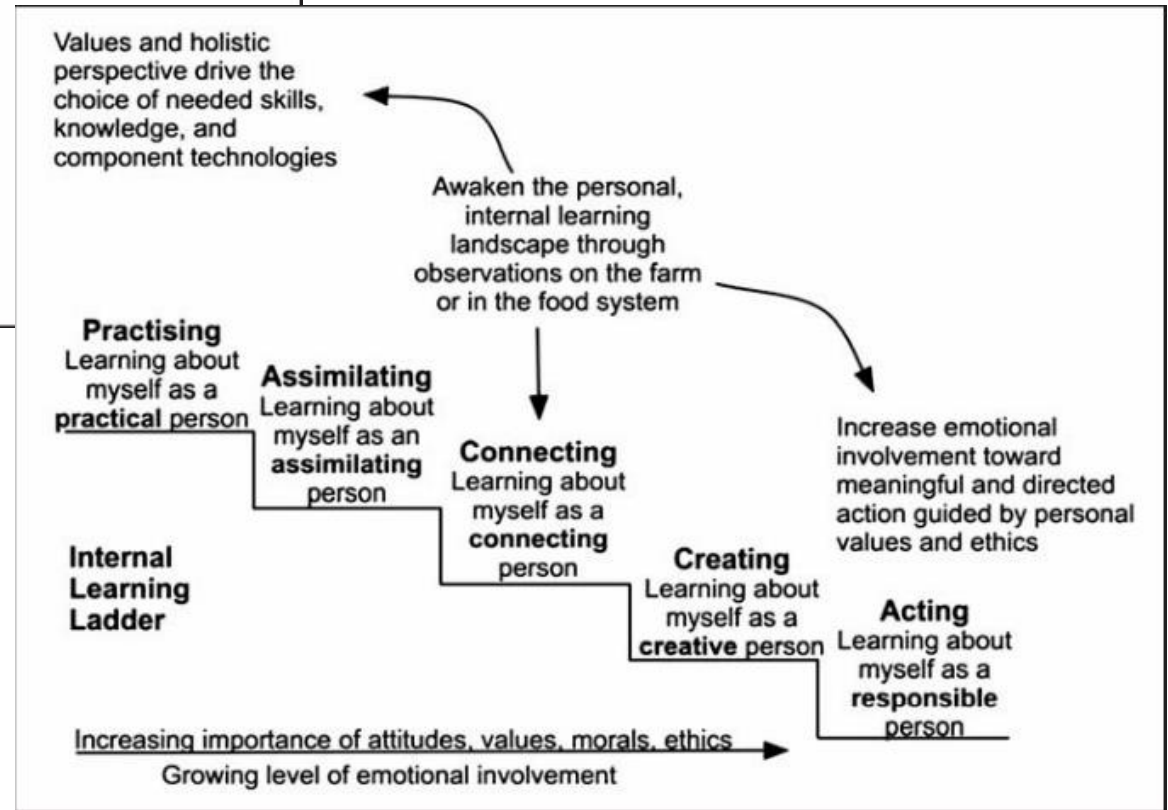
incorporates a system's thinking approach into their model to help students understand the complexities of the food system.

### *2.4.3 Systems Thinking*

Systems thinking, also known as resilience thinking (Walker & Salt, 2006, 31), is connected to value-oriented learning, as it helps students deal with and manage system complexity (Galt & Clark, 2012; Østergaard, et al., 2010). Systems thinking recognizes that food systems and sustainability are complex, and that there is not one “fits-all” solution to the industrial food system (Walker & Salt, 2006, 2-10). Food is linked to culture, ecological systems, human health, government and the economy, creating widespread and complex problems and solutions. By teaching interns about complexity, they are more prepared to becoming activists for change within their communities (Galt & Clark, 2012; Kay, 2008, 3; Østergaard, et al., 2010). This can result in the scaling up of their effects on the overall system, an important aspect of systems change and resiliency (Kay, 2008, 11).



**Figure 2.2.** The first learning ladder that involves the basic experiential learning process, including training, memorization, exploration and experimentation, and finally visioning and implementation. Retrieved from Østergaard, E., Lieblein, G., Breland, T., & Francis, C. (2010). Students Learning Agroecology: Phenomenon-Based Education for Responsible Action. *The Journal of Agricultural Education and Extension*, 16(1), 23–37.



**Figure 2.3.** The second, internal learning ladder, which involves elements associated with learning a new skill and knowledge base. The ladder includes practicing and assimilation of new knowledge, connecting it with the outer world, creating and finally acting on values obtained from the learning process. Retrieved from Østergaard, E., Lieblein, G., Breland, T., & Francis, C. (2010). Students Learning Agroecology: Phenomenon-Based Education for Responsible Action. *The Journal of Agricultural Education and Extension*, 16(1), 23–37.

## 2.5 MWFF as a Social Innovation

Social innovations are ideas that “...challenge and change the very institutions that created the social problem which they address,” (Westley & Antadze, 2010, 2). Institutions are, “...rules, norms, and beliefs that describe reality for... [an] organization (group or individual), explaining what is and is not, what can be acted upon and what cannot,” (Hoffman, 1999, 351), including cultural norms, political and economic realities and laws (Moore & Westley, 2011). Social innovations must be resilient/durable, be cross-scalar and have impact. While social entrepreneurs are focused on the creation of new organizations that create a profit and offer a social service to the market, social innovations move beyond profit building and focus on system changes at multiple levels (Westley & Antadze, 2010).

MWFF could be thought of as an emerging or potential social innovation and entrepreneurship. As a business, the farm is focused on creating a profit, but the values that the farm is built upon has the implications to create system changes and move beyond operating a business. The farm’s goal is to be able to replicate itself across the landscape and create network of local food. From here, the objective is to change the identity of the landscape and create community and a sense of place for residents. The internship program, the focus of this research, is a tool that the farm will use to move beyond operating a business and begin creating social and system changes. This will provide a framework to assess the characteristics of the internship that is required to advance the social innovation of the farm.

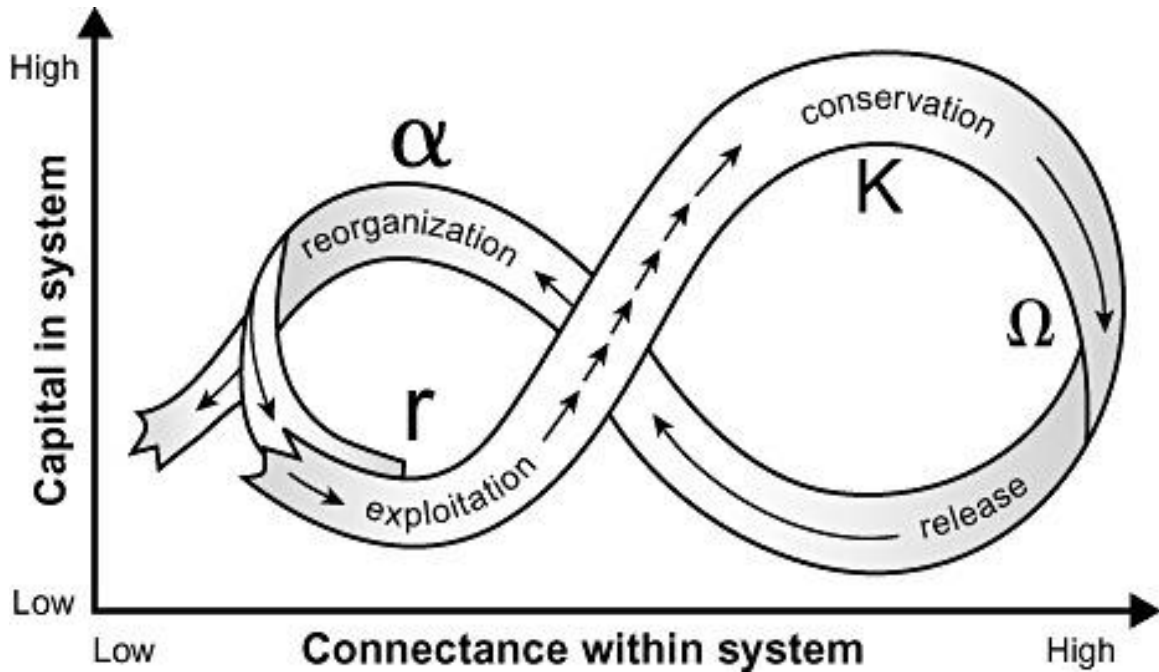
### *2.5.1 Resilience*

Resiliency is defined as, “...the capacity of a system to absorb disturbances and still retain its basic function and structure,” (Walker & Salt, 2006, xiii). It can be described using the Adaptive Cycle, as seen in Figure 2.4. Holling and Gunderson developed the Adaptive Cycle to describe ecological system cycles and their ability to absorb change and disturbance (Walker & Salt, 2006, 75). It was then applied to socio-ecological systems and is used to describe resilience in systems at all levels. Social innovation requires resiliency in order to have long lasting impact. If it falls apart at the first disturbance, then the social innovation will not succeed.

The fear of the present industrial agricultural system is that it has become too stable and efficient, or rigid (Dunning, Bloom, & Creamer, 2015). Based on resilience theory, when systems become too efficient, and resources and energy become tied up, the system will enter a release phase and disperse (Dunning, Bloom, & Creamer, 2015; Walker & Salt, 2006, 84). To apply this to current agricultural practices in North America, we rely on fossil fuels to operate machinery on farms and to make chemical pesticides and fertilizers. If fossil fuels become too expensive due to scarcity, then industrial agriculture methods become obsolete, creating vast food shortages. The local food movement seeks to minimize the impacts of this by diversify food sources and the market, decentralizing power, creating community networks and increasing ecological viability (Dunning, Bloom, & Creamer, 2015).

### 2.5.1.2 The Adaptive Cycle

The Adaptive Cycle involves four phases that will be described in relation to the farm: the rapid growth phase, the conservation phase, the release phase and the reorganization phase, as seen in Fig 2.4.



**Figure 2.4.** The Adaptive Cycle: a theory based on Holling's analysis of ecological systems and resiliency. Systems move through a series of exploitation, release, conservation and reorganization. Retrieved from Carreiro, M., & Zipperer, W. (2011). Co-adapting societal and ecological interactions following large disturbances in urban park woodlands. *Austral Ecology*, 36(8), 906.

#### 2.5.1.2.1 Rapid Growth Phase (r Phase)

The r phase, or the rapid growth phase involves the exploitation of energy and resources as they become available to the socio-ecological system (Walker & Salt, 2006, 76). The r strategists are entrepreneurs who seize opportunities to create new markets and new products, making them available to the public (Walker & Salt, 2006, 76). Upon success, their businesses or ideas grow quickly, utilizing the resources and market to

their fullest extent. MWFF falls in this category, as their business operation is new and innovative. They are providing new products and ideas to their customer base, using the resources that they have and opening up new opportunities for growth.

#### 2.5.1.2.2 Conservation Phase (K Phase)

As the farm increases in age and experience it will shift into the conservation phase, or K phase of the adaptive cycle. This process develops slowly as the business or social innovation becomes more stable and conservative in their actions (Walker & Salt, 2006, 76-7). At this point the farm has acquired wealth, has a balanced movement of resources in and out, as well as a solid customer base. The farm plays a larger role in the political economic plans of the ORM as their business and values scale up.

#### 2.5.1.2.3 Release Phase (Omega Phase)

During the release phase, or omega phase, the steady system that was accumulating wealth in the K phase breaks apart and energy is released through a disturbance (Walker & Salt, 2006, 77-8). The longer the farm stays in a steady conservation phase, the easier it will be for a disturbance to push it into this phase of release. The farm could lessen the impact of the release phase by having support systems in place and being adaptable to changes as they occur. It should also be constantly looking for new ways to diversify the business and make it more resilient to disturbance.

#### 2.5.1.2.4 Reorganization Phase (Alpha Phase)

In the final reorganization, or alpha phase, the system is open to new opportunities and ideas (Walker & Salt, 2006, 78). Reorganization can take place at very small scales, for example, a crop failure, or at large scales, such as the farm changing market distribution technique. Being prepared and recognizing new opportunities that this phase brings to the table is essential in creating a durable and resilient innovation. From here, the system repeats, starting once again in the rapid growth phase.

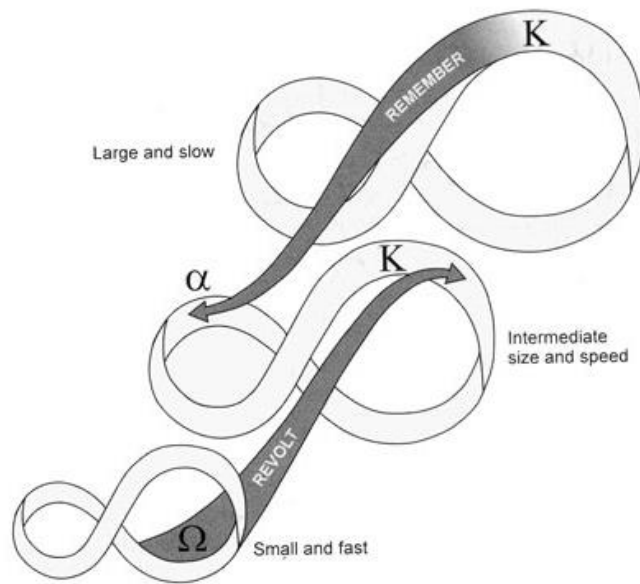
#### 2.5.2 *Cross-Scalar*

Social innovations must cross scales in order to create system changes on local, regional, national and global scales (Westley & Antadze, 2010). There are two ways that the farm can be cross scalar, by scaling out and by scaling up. Scaling out involves a social innovation replicating itself across social boundaries, leading into social diffusion (Moore & Westley, 2011). Replicating the farm over the landscape of the ORM is an example of scaling out. Scaling up refers to, "...moving an innovation into a broader system and creating transformation through the linking of opportunities and resources across scales," (Moore & Westley, 2011). This would involve the farm changing the political-economic systems of the ORM region by working to change and create new laws, legislation, funding and economic organization.

Scaling-up can be attributed to the Panarchy model, which takes the idea of the adaptive cycle and spreads it across multiple scales (Resilience Alliance, 2015). Referring to Figure 2.5, the farm would operate at the initial cycle at the bottom, and by changing



the mindsets and worldviews of the people living in the ORM, they would move into the larger cycles of political and economic change. Changing the political-economic systems of the regions is a much slower process than the yearly cycles of the farm business, but it transcends social boundaries and inherently changes the food system of the ORM.



**Figure 4.5.** Panarchy model of resilience and social innovation. Smaller resilience feedback loops scale up to larger feedback loops. Retrieved from Holling, C.S., & Gunderson, L.H. (2001). *Panarchy: Understanding transformations in Human and Natural Systems*. Island Press. <https://www.ecologyandsociety.org/vol15/iss3/art24/figure2.html>

### 2.5.3 Impact

By creating a resilient system and scaling the social innovation out and up, the social innovation will have impact on a large scale. Social innovations are disruptive to social systems and change the way other systems react within it, such as the economic and political systems, as well as basic beliefs that define the system (Westley, 2008). If the farm values are stretched across the landscape and start changing the way people

interact with their food sources and start to develop a new identity, then the social innovation has had impact and the system shifts into a new reality.

#### *2.5.4 Pedagogy as a Tool for Social Innovation*

The internship, that this research will provide recommendations for, is a key tool for the broader systems change that the farm wants to create. By teaching interns about their place in the larger system and inspiring them to create change and participate in their communities, the values of the farm will have impact, as well as scaling out and up. Teaching values and using models such as Østergaard, et al.'s (2010) dual learning ladder will be key in this social innovation. Referring to Figures 2.2 and 2.3, it is critical that interns are taught how to implement their ideas on system changes and to match their own values and morals to those of the farm's (Østergaard, et al., 2010). By exporting these interns and providing them with the skills and knowledge of how to change the industrial food system, they will who will help to scale out and up the social innovation that is MWFF.

### **3.0 Methods and Methodologies**

#### **3.1 Methodological Framework**

MWFF was used as a case study to develop an internship program for a small-medium scale CSA farm business. A case study is appropriate in this situation as the program will be developed and researched within a real-life applicable context for a specific group (Yin, 1994: 6). Research into agricultural internship design is also limited,

another indicator that a case study is the preferred method of research (Eisenhardt, 1989). This research can also be classified as participant action research (PAR) as it involves gathering research and developing a framework with MWFF as a partner. This research can lead to social change if implemented and helps build relationships between MWFF, as a place of research, and the University of Waterloo, as a provider of researchers (McIntyre, 2008: ix).

### **3.2 Methods**

A literature review was completed to obtain foundational material on the state of current food systems, overarching pedagogical research and the present legal landscape that internships and MWFF operate in. This information was used to create a conceptual framework to frame the research outcomes within a social innovation and resilience-thinking context. The literature review was then used to frame data collection design, questions, and possible organizations of interest. Internet searches for possible internship curriculum experts or organizations were used to find programs available in Ontario and the rest of the world. Organizations, independent farms, universities and networks were all possible experts that can provide data in designing internships and curriculums, as well as explaining pedagogical methods in practice.

Background information and possible sources of contact were collected at a workshop titled *Ecological Farm Internship Workshop: Models, Experiences & Justice* on October 13, 2016. This conference provided information on the current state of agricultural internships in Canada and around the world, including providing contact

information for key informants and experts. It stressed the legal issues surrounding internships, as well as failed and successful internship programs and their related curriculums.

Interviews were done with MWFF operators and owners to determine what their goals and objectives are for an agricultural internship on their farm. Interviews were also held with internship experts and representatives of organizations with existing internship programs, those that have experience running their own internships or are part of an organization that helps organize new farmer training. Interviews were chosen as a means to collect information, allowing the researcher to develop a better understanding of what MWFF wants from an internship program and to determine the strengths and weaknesses faced by internship programs (Gill, Stewart, Treasure, Chadwick, 2008). A semi-structured method was used as to provide the researcher with the ability to ask the interviewee to clarify or diverge more information (Gill, Stewart, Treasure, Chadwick, 2008). It also provided an opportunity for more natural discussion and to help develop a better understanding of the phenomenon for the researcher (Gill, Stewart, Treasure, Chadwick, 2008). A snow-ball method of data collection was used to find possible literature and points of contact that may be of service to the research. Interviews were completely transcribed.

Due to the time frame provided for the research and the reliance on participant cooperation, only three expert interviews were completed. In order to reconcile this lack of data, the grey literature was consulted. The grey literature was made up of two handbooks published for farmers who are interested in running their own internship

program, as well as a podcast about internships that included three key informant interviews that was recommended in a number of websites and at the attended conference. The two handbooks were titled *Internships in Sustainable Farming: A Handbook for Farmers* (Jones, 1999) and *Nurturing New Farmers: A practical guide to hosting interns and mentoring the next generation of farmers* (Hall, 2015). The podcast was part of the *Ruminant* series and was titled *Episode 39: Farm interns, labour laws, and fair compensation for your farm help* (Marr, 2015).

Coding was used to determine themes from the expert interviews and grey literature that was found regarding creating and hosting an internship on a small-medium scale organic farm. Coding involves grouping data and responses within themes in order to conceptualize theories and concepts in qualitative research (Bryman, Teevan & Bell, 2009: 253). This allows major themes from the interviews and grey literature to be discerned and used to create meaningful recommendations for MFWW. Nodes were created from the major topics that were discussed in the data and then were broken down into related themes (Bryman, Teevan & Bell, 2009: 261). Each node and theme was given an associated number value. These number codes were then added up by how often they appeared in the literature or transcripts (Bryman, Teevan & Bell, 2009: 261). Data was presented in a chart and included the number of times a theme appeared in the interviews, the grey literature, and a combination of both. The combined values were converted into percentages of the whole for each theme as to better conceptualize the data.

Information was gathered from internship providers on the logistical and curriculum components of their programs in order to gain an understanding of the major themes of the curriculums, and how different organizations operate their programs. Ignatius CSA Farm, Everdale Organic Farm and Fertile Ground are all part of the South-West Ontario CRAFT network. Three of these programs took place at higher education organizations: University of Santa Cruz's Apprenticeship in Ecological Horticulture, Sir Sandford Fleming College's Sustainable Agriculture Co-op, and University of British Columbia's Farm Practicum in Sustainable Agriculture. These university-run programs were assessed as MWFF has shown interest in being affiliated with a higher education institute. Information about fees, remuneration, program length, curriculum themes and methods of teaching were all compared. This information was used to guide recommendations for MWFF.

In the discussion, the results were evaluated and compared to the overarching goal of the research, to the literature review and the conceptual framework. Recommendations were produced that will help MWFF create a resilient and replicable agricultural internship program. These recommendations were then presented to the farm operators, who can use the information to create an internship.

## 4.0 Results

The following results are broken up between farm and expert interviews and grey literature comparison, as well as the program comparison.

### 4.1 Results of Mount Wolf Forest Farm Interviews

Interviews were done with four of the owners MWFF. Their visions for the internship were similar, most stressing similar concerns and objectives. Overall, the farm wants to be able to replicate itself and its values, "...which [are] ecological and social sustainability, respect for the land, allowing the land to heal...yet having a viable business," (interviewee, 2017) across the landscape of the ORM.

*The idea of replication - that we are developing new farmers who have the skill set who could in fact go out to another farm on the Moraine and have the knowledge of how this runs and be able to replicate it and watching that spin off"*  
*(farm owner, 2017),*

is the main goal of the internship.

In terms of running an actual internship on the farm, there was consensus that much of the farm skills learning would be done in the field, shadowing the farm manager and having them explain their actions as they go about their day. The farm owners wanted to be able to produce a well-rounded farmer who has farming knowledge and skills, basic mechanical and carpentry skills, sound understanding of

ecology and land management for sustainable futures, and able to use systems thinking to change the current food system. There was interest in being able to partner with a larger organization, higher education institute and/or provide a certificate or diploma upon completion. There was concern about infrastructure and the capital to be able to host and teach interns, as well as legality issues on bringing in larger institutions as a partnership with the farm, as the ORM Plan is limiting, as discussed in Section 2.3.1. This information will be used to help frame the discussion of the expert interviews and grey literature analysis.

## **4.2 Expert Interviews and Grey Literature Analysis Results**

Table 4.1 summarizes the coded interview and grey literature analysis results. 4 key themes were highlighted from the data: internship logistics, educational components, transparency, and challenges facing new farmers.

### *4.2.1 Internship Logistics*

The first section is based on questions regarding the logistics, or program details, of running an internship program. Most mentions are concerning monetary compensation in interviews, and monetary compensation and living arrangements in the grey literature. 39.5% mentioned monetary compensation for work done by the intern, while 25.6% mentioned providing room and board. Some interviewees provide a stipend to their interns while some pay minimum wage and take off living and education costs. Most season lengths discussed were between 4 months to a year, many programs



offering the ability to lengthen the stay into the late fall and winter periods if the intern is keen. Some programs charged a fee for their interns, although this was only mentioned once in the grey literature and once in an interview. Providing interns with free time and, the ability to leave the farm during that time was mentioned four times between all the sources.

#### *4.2.2 Educational Components*

Section 2.0 of Table 4.1 addressed teaching and educational components of internship programs. Interviews and grey literature focused on the intern understanding the rhythms of farm life, having set curriculums, feedback and evaluation programs, and the use of mixed teaching methods. Multiple sources stressed the importance of allowing interns to create their own learning goals. Feedback and evaluation and mixed teaching methods had the highest amount of mentions between the grey literature and the expert interviews, with 25.5% of total mentions for each. Set curriculum was the second highest, making up 23.2% of all mentions. When broken down into grey literature or interviews, these three sections had the most mentions as well, although for the interviews, set curriculum and mixed teaching methods were the highest, with feedback and evaluation being third.

#### *4.2.3 Transparency*

The need for transparency was a common theme from both the interviews and the grey literature. The analyses highlighted that there are various ways to address the

transparency issue that include: writing and agreeing to a contract for all parties involved in the internship; using an organization that acts as a go-between for farms and interns; understanding that interns are not farm labour; and clear, regular communication between the farmer and intern. The most mentions were by far the need for communication for both the grey literature and interviews with 36.8% of mentions addressing it. While it has more mentions in the grey literature, communication is on par with themes 3.3 and 3.1 for the expert interviews. The second highest amount of mentions was the need to have a contract between the farmer and the intern, with 26.3% of mentions. Grey literature stressed the need for contracts and both handbooks had outlines for creating one.

#### *4.2.4 Challenges for New Farmers*

All interviewees were asked what they believed to be the prevalent hindrances to new farmers being able to farm. The major limitations were found to be access to land, access to capital and access to farming knowledge and skills. The importance of business skills was also brought up in one of the interviews. The farm owners also identified access to labour as another possible limitation.

### **4.3 Comparison of Internship Programs**

An analysis was completed to show comparisons between six internship or apprenticeship programs throughout Canada and one from the United States, as seen in Table 4.2. Each organization has their own way of running sustainable agriculture

programs although overall, the themes covered in the curriculums and the methods of teaching are all very similar, with the CRAFT farms having the added bonus of being able to participate in CRAFT days. It should be noted that Everdale Organic Farm's program is based off of the University of Santa Cruz's curriculum for their apprenticeship course (Everdale, 2017).

Tuition for programs ranges anywhere from free to \$6000 US, with the highest tuitions being those that are affiliated with a higher education institutes. It should also be noted that the CRAFT farms offer a stipend to the interns while the higher education institutes do not. This is new for Everdale, as they are about to go into their first season offering a stipend to their interns. This stipend does not account for the fee at the beginning of the season. While all CRAFT farms offer housing and food to their interns, Santa Cruz is the only higher educator that does this, and students must pay extra fees for their food. Almost all the programs run between March and May until October or November. The only exception to this is Fleming's program, which is a full year program with only 21 weeks spent on the farm during their co-op course. Everdale Organic Farm is the only program that offers a certificate upon completion that is not associated with a high education institute.

**Table 4.1. Coding results of the expert interviews and relevant grey literature analysis on running an internship.**

| Coding for Interviews and Grey Literature                         | Interviews | Grey Literature | Total | Percentage of Total Mentions |
|---|------------|-----------------|-------|------------------------------|
| 1.0 Internship Logistics  | 19         | 24              | 43    |                              |
| 1.1 Charging a program fee  | 1          | 1               | 2     | 4.7%                         |
| 1.2 Live on site  | 3          | 8               | 11    | 25.6%                        |
| 1.3 Monetary compensation (stipend or wage)                       | 8          | 9               | 17    | 39.5%                        |
| 1.4 Free time/time off/access to vehicle for interns              | 2          | 2               | 4     | 9.3%                         |
| 1.5 Season length   | 5          | 4               | 9     | 20.9%                        |
| 2.0 Education Components  | 15         | 28              | 43    |                              |
| 2.1 Rhythm of farm life/farm life style                           | 2          | 3               | 5     | 11.6%                        |
| 2.2 Set curriculum with clear goals                               | 4          | 6               | 10    | 23.2%                        |
| 2.3 Feedback and evaluation                                       | 3          | 8               | 11    | 25.5%                        |
| 2.4 Mixed teaching methods  | 4          | 7               | 11    | 25.5%                        |
| 2.5 Classroom to field component                                  | 2          | 4               | 6     | 12.5%                        |
| 3.0 Transparency  | 15         | 23              | 38    |                              |
| 3.1 Contract with clear roles for intern and farmer               | 4          | 6               | 10    | 26.3%                        |
| 3.2 Use of organization who sets up interns, provides programming | 3          | 3               | 6     | 15.8%                        |
| 3.3 Interns are not farm hands                                    | 4          | 4               | 8     | 21.1%                        |
| 3.4 Communication   | 4          | 10              | 14    | 36.8%                        |
| 4.0 Challenges for New Farmers                                    | 10         |                 |       |                              |
| 4.1 Access to land  | 3          |                 |       |                              |
| 4.2 Access to capital   | 3          |                 |       |                              |
| 4.3 Access to farming knowledge                                   | 3          |                 |       |                              |
| 4.4 Business skills   | 1          |                 |       |                              |

|   | Ignatius (CRAFT)  | Everdale (CRAFT)   | Fertile Ground (CRAFT)   | University of Santa Cruz<br>Apprenticeship in Ecological<br>Horticulture   | Fleming College<br>Sustainable Agriculture Co-op   | UBC Farm<br>Practicum in Sustainable<br>Agriculture   |
|---|---|--|--|--|--|---|
| Fees  | \$0   | \$977  | \$0  | \$6000 (US)*   | \$6,400  | \$4,160   |
| <b>Table 4.2. Comparison of logistical and curriculum components of other agricultural internship providers</b> |   |  |  |  |  |   |
| Stipend (per month)   | \$000   | \$370  | \$400  | \$0  | \$0  | \$0   |
| Dates/Program Length  | April 17 - November 10<br>April 17 - August 25  | Mid-April to Mid-November  | May 1 - November 1<br>May 1 - Sept 1   | Mid-April to Mid-October   | 1 year   | March 18 - October 28   |
| Days per week working   | 4   | 4  | na   | 4  | 21 weeks on farm   | 12-25 hours/week  |
| Days per week classroom/educational   | 1   | 1  | na   | 1  | 2 semesters in the classroom   |   |
| Certification?  | No  | Yes  | No   | Yes  | Yes  | Yes   |
| Themes of curriculum  | <ul style="list-style-type: none"> <li>- business and farm planning</li> <li>- greenhouse management</li> <li>- seedling production</li> <li>- bed preparation</li> <li>- use of tractors</li> <li>- use of tractors and machinery</li> <li>- weeding</li> <li>- transplanting</li> <li>- harvesting and post harvest handling</li> <li>- working with colunteers</li> <li>- CSA dsitribution/farmer's market</li> <li>- facilitating a workshop</li> </ul> | <ul style="list-style-type: none"> <li>- Greenhouse seed management</li> <li>- field bed preparation</li> <li>- tractors</li> <li>- compost</li> <li>- seed saving</li> <li>- weed and pest management</li> <li>- harvest and postharvest handling</li> <li>- irrigation</li> <li>- cover crops</li> <li>- poultry</li> <li>- crop planning</li> </ul> | <ul style="list-style-type: none"> <li>- Greenhouse management &amp; seedling production</li> <li>- Weed management and pest control</li> <li>- harvesting and postharvest handling</li> <li>- soil building practices and fertility management</li> <li>- pastured poultry care</li> <li>- irrigation</li> <li>- infastructure building and maintenance</li> <li>- wolunteer supervision and mentoring</li> <li>- CSA distribution</li> </ul> | <ul style="list-style-type: none"> <li>- soil management</li> <li>- composting</li> <li>- pest control</li> <li>- crop planning</li> <li>- irrigation</li> <li>- farm equipment</li> <li>- marketing techniques</li> <li>- CSA practices</li> <li>- farm labour issues</li> <li>- food policy</li> <li>- equity and access within the food system</li> </ul> | <ul style="list-style-type: none"> <li>- community and agriculture</li> <li>- livestock management</li> <li>- business and marketing skills</li> <li>- greenhouse management</li> <li>- principles of sustainable agriculture</li> <li>- seed production and saving</li> </ul> | <ul style="list-style-type: none"> <li>- soil management and science</li> <li>- seed sourcing, production, etc.</li> <li>- crop rotation</li> <li>- compost</li> <li>- equipment use and maintence</li> <li>- plant biology</li> <li>- marketing</li> <li>- weed and pest management</li> <li>- irrigation</li> <li>- poultry</li> <li>- bee keeping</li> <li>- harvesting and post harvest handling</li> <li>- food soverighnty and justice</li> <li>- record keeping</li> </ul> |
| Methods of Teaching   | <ul style="list-style-type: none"> <li>- In-field</li> <li>- Field trips</li> <li>- Workshops</li> <li>- CRAFT days</li> <li>- Field demonstration</li> <li>- Project work</li> </ul>   | <ul style="list-style-type: none"> <li>- Seminars</li> <li>- Field demonstrations</li> <li>- Field trips</li> <li>- Project work</li> <li>- Assignments</li> <li>- Readings</li> <li>- Worksheets</li> <li>- In-field</li> </ul>   | <ul style="list-style-type: none"> <li>- CRAFT trips</li> <li>- 3-4 farm tours</li> <li>- Workshops</li> <li>- In-field</li> </ul>   | <ul style="list-style-type: none"> <li>- In-field</li> <li>- Lectures</li> <li>- Workshops</li> <li>- Field Demonstrations</li> <li>- Field trips</li> </ul>   | <ul style="list-style-type: none"> <li>- Co-op program on farm for 21 weeks</li> <li>- 2 semesters in-class on campus</li> <li>- Field trips</li> </ul>  | <ul style="list-style-type: none"> <li>- In-field</li> <li>- In-class</li> <li>- Guest-speakers</li> </ul>  |

\* Tuition in US dollars for domestic students. Tuition is much higher for international students.

Data from:

Ignatius Jesuit Centre. (2016). *Ignatius Farm internship package 2017* [PDF]. Retrieved from <https://ignatiusguelph.ca/wp-content/uploads/2014/07/Intership-Package-2017.pdf>

Everdale (2017). *Everdale sustainable farming certificate program* [PDF]. Retrieved from [http://everdale.org/files/2017/01/SFC-Program-Description\\_2017.pdf](http://everdale.org/files/2017/01/SFC-Program-Description_2017.pdf)

Unviersity of Santa Cruz (2017, March 16). *Apprenticeship Information*. Retrieved March 18, 2017, from <http://casfs.ucsc.edu/apprenticeship/apprenticeship-information/index.html>

Sir Sanford Fleming College. (2017). *Sustainable Agriculture Co-op Curriculum*. Retrieved March 18, 2017, from <https://flemingcollege.ca/programs/sustainable-agriculture-co-op/curriculum?start=january-2018>

University of British Columbia. (2017). *UBC Farm practicum in sustainable agriculture 2017 overview* [PDF]. Retrieved from <http://ubcfarm.ubc.ca/community/practicum-in-sustainable-agriculture/>

Fertile Ground. (2014, October 12). *Internships*. Retrieved March 18, 2017, from <https://fertilegroundcsa.com/content/internships>

## **5.0 Discussion**

The following section will discuss internship logistics, curriculum components, ways to reduce the barriers associated with becoming a new farmer and the limitations of the research.

### **5.1 Internship Logistics**

#### *5.1.1 Compensation*

Living arrangement and monetary compensation were very important in the interviews and the grey literature. As noted in section 2.3, there are certain legalities that must be followed in order to operate a legal internship program on a farm. For MWFF, it is critical that all laws are followed and the interns feel that they are receiving fair compensation for their work. The farm owners are interested in having the intern live on and be immersed in farm life, although living arrangements and possible infrastructure will have to be accounted for. It is also recommended that there should be monetary compensation to some degree, in order to follow proper legal requirements in Ontario. All of the CRAFT farms outlined in Table 4.2 offer interns a stipend while working on the farm to meet legal requirements, and because many people cannot afford to go without pay for long periods of time.

Offering a wage does not account for the addition of a program fee, such as the one Everdale charges to interns. Since Everdale offers a solid curriculum to their interns, who also come out with a certification at the end of the internship, the organization

does charge a fee. This was also recommended by one of the internship experts, who recommended,

*If it is a ... full-year program where you come out and you've been exposed to everything you need to know to be a farmer, then I think it should be for a fee. I think it can be offset by the work that they contribute to the farm*  
(internship expert, 2017).

As the farm gains more experience and a reputation of producing well-rounded future farmers from their program, then a fee should be charged that could then be offset by wages. A certification may be used to help the intern when they go to find, "...other farm opportunities, like employment... or if they want to go to a land owner and rent land or...potentially, financing," (internship expert, 2017). A certification could be of value to interns moving forward in their farming career.

The two grey literature handbooks had outlines for possible internship contracts that are signed by all parties involved in the education and work process. One internship expert explained,

*I think transparency and making expectations really clear is important, being very upfront about what the expectations are right from the beginning so folks understand what they're getting into and going into it freely, (2017).*

Creating a clear contract will be an important step in creating the internship for MWFF. This will also help create a legal framework for the internship to operate within.

### 5.1.2 Focus on Experienced Interns

From the interview responses, it was recommended that the internship program focus on second or third years interns. These more experienced interns are more responsive to learning the business aspects of the farm and are used to the cycles and rhythms of farm life. One respondent stated,

*The job of a first-year intern is to just experience... what the rhythm of farm life is, what farming looks like, what it feels like, how hard it is, what it involves, the rewards and the pain and the tears and the happiness and all of it... returning interns are probably the ones that could use better, structured time around more in-depth areas of the farm, (internship expert, 2017).*

Second and third year interns are more open to learning about the details and technical aspects of farming, as well as business planning and marketing. Another interview respondent said,

*I have found over the years that people have a lot of interest in the business side of how we plan a year. We found that until they have done a year or two they don't understand enough of the cycles to really grasp why we plan... it's hard to teach at that level of that first year or even second year. After that, then they have seen a few different variations and better understand why the planning is done as it is done, (internship expert, 2017).*

In order to provide the best experience to interns and to help attain the goal of scaling out the farm across the landscape, focus should be put on people who have previous experience interning on farms and are interested in becoming farmers themselves.



## 5.2 Curriculum Components

### 5.2.1 The Curriculum

There are many resources available to farmers and organizations that want to run their own agricultural internship programs. The University of California Santa Cruz's (UCSC) Center for Agroecology & Sustainable Food Systems has developed a 700-page farmer apprenticeship training manual, *Teaching Organic Farming & Gardening*, that can be used by any group or farm, to teach those interested in learning how to farm sustainably (<https://casfs.ucsc.edu/apprenticeship/TOFG-apprentice.html>) The manual covers over 40 years of experience teaching sustainable agriculture to hundreds of students and includes curriculum information about organic farming, applied soil science, and social and environmental issues related to farming (University of California Santa Cruz, 2017). Everdale's Sustainable Farming Certificate is based on USCS' program and has been adapted for Ontario's growing season (Everdale, 2017). Ignatius Farms has also developed a curriculum that is available for free called, *Oh, to grow! An educational prime for new farmers* (Fairholm, 2015), and touches on similar topics as the UCSC manual and includes worksheets for activities.

MWFF should use resources like *Teaching Organic Farming & Gardening* and *Oh, to grow!* that have been proven effective methods of teaching, in order to develop a basic internship curriculum. This can then be applied and adapted to MWFF's values and larger pedagogical goals. Using a well-developed curriculum will also take pressure off of trying to teach everything too quickly, overwhelming both the instructor and the intern. The curriculum should still be adaptable and willing to change on a seasonal basis,

depending on the feedback received from the interns and through accumulated experience. This will help monitor the resiliency of the program by being able to change and adapt as need be.

In terms of actually teaching the intern, it was recommended that the farm should,

*...have a balance of theoretical learning but have a strong component of hands on work, and not just hands on work where you may have looked at something in theory, but also something that gives you an experience of what the particular form of agriculture you are in (internship expert, 2017).*

This coincides with Kolb's learning theory of experiential learning by acquiring knowledge in a classroom, practicing it in the field and then reflecting and experimenting with it. As noted in section 2.4.1, hands on learning is the basis of agricultural education and can then be supplemented with course work. Another internship expert noted,

*We tend to do the more practical stuff at the beginning of the season, like farm safety and orientation of different areas of the farm, a little bit about soil and organic agriculture, and the different crops that we grow and why we choose to grow them. Then we delve into the more complex stuff later on in the season like farm finances and crop planning... (2017).*

This would be an important aspect when creating a curriculum for the farm, where the intern starts off learning the basic components of farming and, as the season progresses, delves into more complex aspects of farming and food systems.

MWFF may also consider joining the CRAFT network. CRAFT takes on some of the broader topics of agricultural education, while also offering interns opportunities to see other farm operations (CRAFT SW Ontario, n.d.). Almost all of the programs outlines in Table 4.2 used field trips to other farms as a method of teaching and expanding the knowledge of the intern. Field trips and the use of CRAFT days are also an excellent way to create social networks, a very important aspect of new farmer training that is usually overlooked, as found by Niewolny & Lillard (2010). CRAFT improves the social connectivity of interns with each other, with other farmers and with the wider communities, which is incredibly important in a food movement that is based on relationship building and local economies (Niewolny & Lillard, 2010). Joining the CRAFT network would also allow MWFF to connect with other farms in the area and share resources across the region.

Many programs, as seen in both Tables 4.1 and 4.2, use mixed teaching methods. Experiential learning can be taught in a combination of ways in order to help move from hand-on, in-field teaching to theoretical framework, which Østergaard, et al. (year) also outline in their dual learning ladder framework. Using a mixture of CRAFT days, field trips to other farms, workshops, readings, exercises, and field demonstrations, allows interns to learn in a variety of different ways. Some of the learning aspects, such as applied soil science, is better taught through lecture and readings than in the field, while topics such as the best way to plant seeds and care for growing plants can be taught in the field. Topics based in systems thinking and the intern's place in the wider food system may be discussed as work takes place in the field and also through in-class

discussions and readings. Weekly or daily reflections are recommended both by Kolb as part of the Learning Cycle (1984) and by Costa & Kallick (2008). Keeping a book of reflections may help the intern to process what they have learned, keep notes to refer to later and develop questions and feedback to discuss with the farmer (Costa & Kallick, 2008). Reflection is an integral part to learning and should not be overlooked if MWFF wants to have a lasting impression on interns.

### *5.2.2 Goals and Communication*

While the internship program that MWFF will have a set curriculum, there should be room to tailor the internship to the intern. Respondents to the interviews stressed the importance of having the farmer and intern sit down and develop learning goals that will be reached throughout the season. One respondent said, “We put a lot of energy into helping people develop their goals at the beginning of the year, and following up with those goals to make sure that we are meeting them,” (internship expert, 2017).

Another interviewee said,

*...we do education interviews where during their first couple weeks we will sit down and talk to them about what they want to learn, and then we will try to keep those as little learning points that we can try to teach on farm for them and tailor to them, (internship expert, 2017).*

Regular feedback, both from the farmer and the intern is outlined in the grey literature handbooks and podcast, was noted as being incredibly important to avoid conflict and to make sure that learning goals are being reached. Feedback can be given in the form

of scheduled feedback sessions, and on a daily basis through conversations while in the field (Hall, 2015).

Communication was continually outlined in the interviews as being incredibly important to creating good working relationships and making sure that all parties involved have a positive experience. To avoid conflict from the outset of the internship, most farms conduct interviews in order to see if the intern is a good match. One intern expert recommended that during the interview process, "...we do a lot about interpersonal dynamics, we talk about conflicts with other people, about working with people who may not have the same perspective..." (2017). The grey literature handbooks also outline the importance of in-depth interviews to reduce possible conflicts from the start of the internship.

While not discussed in the interviews and the grey literature analyzed, the workshop attended brought up the importance of connectivity and networking after the intern leaves the farm (personal communications, *Ecological Farm Internship Workshop: Models, Experiences & Justice*, 2016). Niewolny & Lillard highlight in their study the importance of social networks for new farmers and how forums and discussion between farmers is important for continuing education (2010). A study by Bloom & Young also highlights the necessity for communication networks and farmer-to-farmer mentorship (2012). Interns should have a way to stay connected to the farm, whether through social media or other methods of communication, so that when they begin their own farm operations, they can reach out to MWFF if questions arise or they are looking for resources. This will help increase the resiliency of the new farmers and the farms they

are operating and allow them to continue learning and creating change. It will also strengthen the bonds between communities and increase social capital on the ORM.

### **5.3 Reducing Barriers for New Farmers**

There are a number of barriers that new farmers face in Ontario as identified from the interviews with the internship experts and the farm owners. In order to help new farmers be successful and be able to change the larger food system, these inhibitors must be overcome to improve the resilience of the new farmers. While the internship will help increase farming knowledge and business management through its curriculum, land is expensive, especially when capital must also be used to build and purchase infrastructure, tools, etc. (Learmonth, 2011; Niewolny & Lillard, 2010).

The National Farmers Union found that of a 1500 respondent national questionnaire, 68% of respondents were not raised on a farm and 73% stated that they wanted to grow ecologically sustainable food (Wiggans & Wildeman, 2016). 80% of the 1500 respondents that operated a farm for less than 10 years used direct market sales techniques. The study shows that many farmers are in fact, new farmers who are interested in local, organic practices and sustainable food systems. Considering farmers make up 1.6% of the population of Canada, there is a great need for new policies, food networks, farmer-to-farmer relationships and access to land and capital (Niewolny & Lillard, 2010; Wiggans & Wildeman, 2016). New farmers are not as interested in the industrial agricultural system and therefore the policies and resources in place are not helpful to them (Niewolny & Lillard, 2010). Farmland in Southern Ontario is increasingly

expensive, and new farmers can have trouble trying to access loans from banks, as direct market sales are not as common as other methods of agriculture sales used by the industrial system (Dunning, Bloom, Creamer, 2015; interviewee, 2017; Marr, 2015).

Policies that support new farmers, and their want to develop different food networks in their communities, must be created. The rigidity of the present, industrial system is not sustainable and has resiliency implications. As systems become more resilient and consume resources, they enter the conservation phase of Holling's Adaptive Cycle (see Fig. 2.4). When there is a disturbance, such as an economic or resource collapse, the system falls apart. This could prove disastrous for the economy and the farmers of Ontario and Canada. By acting to reduce the barriers for new farmers, such as access to land and capital, the system will diversify and be more resilient during release and reorganization phases.

Until policies can be put in place to protect land from industrial and residential development and be provided to new farmers at affordable prices or in provincial land agreements, farmers and land owners have develop their own ways of accessing land. An information book written by Pat Learmonth has developed resources in order to help farmers find land, whether through purchasing land or renting it from a landowner (2011). Other organizations, such as Farmlink.net, also help link farmers with landowners (<https://farmlink.net>). As MWFF builds relationships and power within the ORM communities, they may be able to create a database of landowners who would be interested in letting graduates of the MWFF internship grow on their land. This will help reduce start-up costs and capital pressure on graduates and new farmers alike, and

allow the farm to be replicated across the landscape, fulfilling their wider vision of replication.

#### **5.4 Limitations of the Research**

Time, resources and scope limited the research. Ideally, I would have liked to include more expert interviews in order to gain a more holistic view of farm internships, but due to time constraints and having to rely on people to respond to emails, only three people were able to complete an interview. It was noted in an expert interview that it would be wise to include interviews with people who have previously interned on other farms in order to have another view on the topic. Interns may have different insights into what they deem a good internship program. The scope of the research only focused on groups and farmers who had held their own internships, and time constraints did not allow for new interview questions to be processed by the ethics office. Only internship providers were interviewed, and although programs were compared to University agricultural programs, future research may wish to interview people from the higher education institute portion of agriculture education.



## 6.0 Conclusion and Recommendations

MWFF wants to create an agricultural internship program that is both resilient and replicable. This internship will be used to create a network of farms across the ORM by giving interns the skills they need to begin farming in the region. In doing so, MWFF will change the face of the food system, disrupting the industrial food system and the political and economic drivers that protect it. MWFF is a social innovation, and the internship is a tool that it will use to scale out and scale up from their present place. The research produced through this thesis has set out 10 recommendations that the farm should consider when they choose to begin planning the running an agricultural internship.

If the internship can create a curriculum that can successfully be integrated into practice, then the farm will have the ability to be resilient, cross scales and have impact. By teaching interns how to be farmers and providing them with resources and mentorship as they start their own businesses, the farm will have lasting impact on the landscape. As MWFF's values and goals spread throughout the landscape, to as far as Peterborough, the economy and identity of the ORM has the ability to change and adapt to a new food system. This food system will be a stark contrast to the present industrial agriculture system and will have the ability to outlast possible disturbances and changes that might happen. If MWFF can change the food system for the communities of the ORM, then the social innovation will be a success.

## 6.2 Recommendations

The following recommendations have been provided to Mount Wolfe Forest Farm based on the research:

### *Internship Logistics*

1. Interns should be reimbursed for work done on the farm by means of monetary compensation and access to room and board.
2. MWFF should design a clear and concise contract for interns, outlining expectations for intern and farmer, compensation and educational outcomes.
3. MWFF should focus on recruiting(?) experienced interns who have previous experience working on ecologically oriented farms.

### *Curriculum Components*

1. Use or adapt curriculum programs that are already available for use and integrate values and goals of MWFF into the program.
2. Use a mixture of teaching methods including, but not limited to: field trips, field demonstrations, workshops, readings, lectures, etc.
3. Join the CRAFT network to access resources, possible interns and CRAFT education days.
4. Let interns create learning goals at the beginning of the season and provide feedback in relation to these goals and learning as a whole. Allow interns the ability to give regular (perhaps anonymous?) feedback to the farm.

5. Create a way for interns to stay connected the farm, its resources and expertise after they graduate.

#### *Decrease New Farmer Barriers*

1. Create a network of landowners who have land available to farm to help graduates of internship program.
2. Work to affect change on the political economic systems of the ORM that will help out new farmers by creating funding schemes and possibly laws and regulations.

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