Journal of Rural and Community Development

# Generational Continuity of Small Dairy Farms in Southern Idaho: An Exploration of Programs to Help Them Stay in Business

**Authors: Mario de Haro-Martí, Henri Sivula, Michael Overton, Lilian Alessa, & Andrew Kliskey**

**Citation:**
de Haro-Martí, M., Sivula, H., Overton, M., Alessa, L., & Kliskey, A. (2023). Generational continuity of small dairy farms in southern Idaho: An exploration of programs to help them stay in business. *The Journal of Rural and Community Development*, *18*(1), 51–69.

**Publisher:**
Rural Development Institute, Brandon University.

**Editor:**
Dr. Doug Ramsey



ISSN: 1712-8277 © Authors
www.jrcd.ca

# Generational Continuity of Small Dairy Farms In Southern Idaho: An Exploration of Programs To Help Them Stay in Business

**Mario de Haro-Martí**
University of Idaho Extension
Gooding, Idaho, United States
mdeharo@uidaho.edu

**Henri Sivula**
University of Idaho
Moscow, Idaho, United States
henri@uidaho.edu

**Michael Overton**
University of Idaho
Moscow, Idaho, United States
overton@uidaho.edu

**Lilian Alessa**
University of Idaho
Moscow, Idaho, United States
alessa@uidaho.edu

**Andrew Kliskey**
University of Idaho
Moscow, Idaho, United States
akliskey@uidaho.edu

## Abstract

The loss of small-size farms is a critical issue facing farming communities across the United States. The Magic Valley, Idaho, is one of the largest dairy-producing regions in the country, and loss of small dairy farms is occurring rapidly. This topic has local authorities, researchers, and community members searching for solutions to maintain farm size diversity in the region. This review considers programs aimed at assisting farmers with succession, profitability, management, and attracting new entrants to agri-business and uses those examples to create a framework that could be applied in the Magic Valley, Idaho. The results show that programs that utilize resources spanning local extension, state, regional, and national administrative scales are effective, and farm incubation programs and advising and mentorship programs have been highly effective in other agricultural contexts. These results have applicability to dairy farming and transgenerational continuity in the Magic Valley, Idaho and other regions, and could be a significant aid in addressing the loss of small-sized dairy farms.

**Keywords**: Small farm loss, brain drain, agri-business, dairy farm, human capital, farm management, succession

# Continuité générationnelle des petites fermes laitières dans le sud de l'Idaho : une exploration des programmes pour les aider à rester en affaires

**Mario de Haro-Martí**
University of Idaho
Moscow, Idaho, United States
mdeharo@uidaho.edu

**Henri Sivula**
University of Idaho
Moscow, Idaho, United States
henri@uidaho.edu

**Michael Overton**
University of Idaho
Moscow, Idaho, United States
overton@uidaho.edu

**Lilian Alessa**
University of Idaho
Moscow, Idaho, United States
alessa@uidaho.edu

**Andrew Kliskey**
University of Idaho
Moscow, Idaho, United States
akliskey@uidaho.edu

## Résumé

La perte des petites exploitations est un problème critique auquel sont confrontées les communautés agricoles à travers les États-Unis. La Magic Valley, dans l'Idaho, est l'une des plus grandes régions productrices de produits laitiers du pays, et la perte de petites fermes laitières se produit rapidement. Ce sujet concerne les autorités locales, les chercheurs et les membres de la communauté à la recherche de solutions pour maintenir la diversité de la taille des exploitations dans la région. Cette analyse examine les programmes visant à aider les agriculteurs dans la succession, la rentabilité, la gestion et à attirer de nouveaux entrants dans l'agro-industrie et utilise ces exemples pour créer un cadre qui pourrait être appliqué dans la Magic Valley, dans l'Idaho. Les résultats montrent que les programmes qui utilisent des ressources couvrant les échelles administratives locales, étatiques, régionales et nationales sont efficaces, et les programmes d'incubation agricole et les programmes de conseil et de mentorat ont été très efficaces dans d'autres contextes agricoles. Ces résultats sont applicables à l'élevage laitier et à la continuité transgénérationnelle dans la Magic Valley, l'Idaho et d'autres régions, et pourraient être une aide importante pour faire face à la perte des petites exploitations laitières.

**Mots-clés** : Perte de petite ferme, fuite des cerveaux, agro-industrie, ferme laitière, capital humain, gestion agricole, succession

## 1.0 Introduction

Idaho is the fourth largest dairy producer in the United States, is the top per-capita milk-producing state, and the third largest cheese producer in the United States, representing a billion-dollar industry (Idaho Dairymen's Association, n.d.; Idaho State Department of Agriculture, 2022). Consolidation and loss of small dairy farms is an ongoing phenomenon that has been going on for decades (Hennessy & Feng, 2018; MacDonald et al., 2020). Figure 1 showcases the extent of this consolidation and the subsequent loss of small dairy farm operations. Idaho has followed this trend, especially in the last two decades (Vermeer, n.d.). The loss of small farms is sometimes taken as a normal consequence of modern agricultural farming, competition, globalization, market conditions, and the increased complexity and expense of farming, especially in the dairy industry. The continuous loss of small farms significantly impacts agricultural communities, individual farmers and their families, and contributes to a loss of diversity and knowledge. This can be considered a brain drain situation since most of the farmers leaving the industry remain in their communities but lack the venues to transfer their knowledge and experiences to younger farmers (May, et al. 2019). Some of the contributing factors to the loss of small producers are market and cost-driven. This includes (a) the cost reduction of economies of scale; (b) lack of credit when collaterals are aging facilities and machinery; (c) feed, labor, and other operational costs; (d) new regulatory or market pressures; and (e) increased land value that makes selling attractive, among others. A critical driver in the decision to sell a farm is the aging of farmers in the United States and the lack of interest in farming from younger family members who pursue other endeavors and lifestyles (May et al., 2019; University of Minnesota Extension, n.d.). The traditional transfer of farms from one generation to the next in the family is in many cases inviable, and farm owners find themselves at a loss on how to keep their farms working. Usually, this is accompanied by a considerable amount of emotional, economic, and societal stress (May et al. 2019; Wyoming Agriculture and Natural Resource Mediation Program, 2011).

On the other hand, newcomers to dairy farming find themselves hunting for educational and training resources and can be discouraged from starting a dairy business by the complexity inherent to modern dairy production and the high price tag of such an enterprise (Haan n.d.; May et al. 2019). As a result, legislators, communities, agricultural organizations, and individual farmers in the Magic Valley and other parts of the United States look for solutions to mitigate the loss of small farms and encourage newcomers to agriculture to start or maintain agricultural businesses, including small-sized dairies. (Bunting, 2022, Kliskey et al. 2019; Kliskey et al., 2023).

Evaluation of a small dairy's economic situation, succession plans, costs for keeping the farm running, and costs for newcomers to start a new dairy farm or take ownership of an existing one in a methodic way are much-needed information and education. Many of the programs mentioned in this paper address those topics, as well as how to increase and transfer the farming, management, economics, marketing, and other knowledge needed by newcomers to succeed and existing small farmers to keep staying in business. Small dairy farms can still be profitable when managed well, taking advantage of available federal and state support programs, and diversify by adding other activities like milk processing (cheese, bottled, etc.), agrotourism, specialty crops, advanced manure management, high-quality or specialty calf or cow's breeding, and so on. (MacDonald et al., 2020).

## 2.0 Methods

This paper explores the training, educational, networking, and mentoring opportunities tha are available at diverse scales to farmers and people interested in starting or continuing as owners of a dairy farm operation as an essential element to address a critical aspect of small dairy farm losses. The hypothesis is that increasing knowledge of available options, increased personal knowledge and practical how-to, and fostering interaction between the aging dairy farm population that is contemplating exiting the business and newcomers or long-time agricultural employees who consider owning a dairy business can set in motion alternatives for renewed small dairy businesses that thrive and maintain size and operational diversity in agricultural and peri-urban communities.

Niewolny & Lillard (2010) explored several beginning farmer programs in their review, serving as a framework for evaluating and exploring available programs that can be taken directly or as a guide to serving the target audience of dairy farmers and aspiring dairy farmers defined here. They employed a standardized review process for compiling research relevant to beginning farmer programs and adult farmer training and identified 33 initiatives that illustrated the best practices currently in their area. All programs were offered between 1999–2009 to account for progression in training and programming alterations over the decade. Projects or programs which treated beginner farmers as subjects and one-time training events were excluded, as they were interested in programs that provide a continuum of education. This paper will include training that offers resources and contacts after the program, even if they are one-time training events.

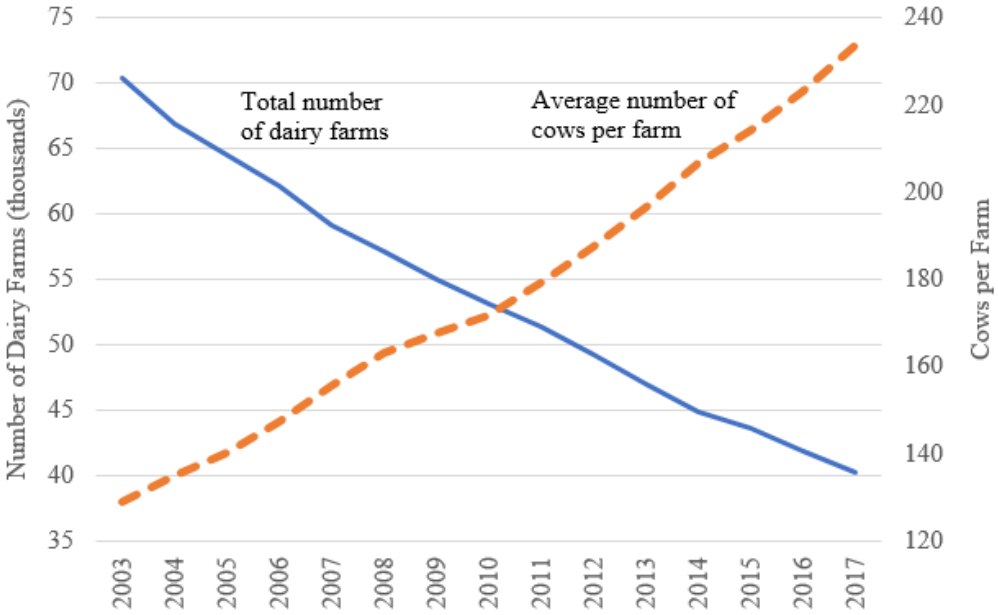
The synthesis of relevant programs and their results addresses how initiatives aimed at beginning farmers and farm succession could be used to craft a framework to alleviate the loss of small dairy farms, and how those programs can guide individuals who want to enter the dairy production industry as owners and operators. To address this, a sample of 10 programs from Niewolny and Lillard (2010) was taken comprising those programs for which evaluation data was available, and then we searched for more up-to-date programs and data available on those programs. Quantitative and qualitative data were collected on several programs. The programs and their evaluation results were standardized based on the distinct services offered and their scale of administrative operation. These synthesized findings were used to construct a framework that could apply to Idaho. Few of the programs analyzed are strictly built around dairy production, most of them are set to help beginning farmers in diverse agricultural enterprises, and some are more specific to crop or horticultural production but have principles that can be transferred to livestock production. We then demonstrated the framework at work in a case study in Skagit County, Washington. The short case study of Skagit County illustrates how the results of the programs can be used to guide grassroots and policy solutions to help mitigate the loss of small farms.

### *2.1 Analysis*

The synthesis outcomes distinguish which program services were effective and the administrative scale at which it was provided (see Table 1). Evidence of program success comes from 10 of the 33 programs examined initially by Niewolny and Lillard (2010) that have thus far been evaluated. For this paper, the administrative scale refers to distinctions in spatial reach, resource availability, and the bureaucratic needs of different programs. For example, a national-level program may have a large

spatial reach and substantial resources, but the bureaucracy needed to maintain collaboration and communication across that reach is significantly more than that of a local university or state program. For programs that utilize cooperation or resources from a variety of administrative scales, this paper has designated them as hybrid programs. A great deal of context is lost when the scale and the program effect are all under evaluation. Therefore, this paper elaborates on the unique context of each of the programs below, organized by administrative scale, and then uses a case study of Skagit County, Washington, to illustrate the applicability of the results to counties of the Magic Valley and the state of Idaho.

*Figure 1.* Number of dairy farms versus average number of cows per farm in the USA 2003-2017.




Source: The National Agricultural Statistics Service of the U.S. Department of Agriculture: https://www.nass.usda.gov/Quick_Stats/index.php

Table 1: *Reported Successes of Program Services Addressing Small Dairy Farm Loss*

| **Program Service** | **New Entrants to Farming** | **New Farms Established** | **Adoption of Desired Practices** | **Participants Continued in Ag.** |
|---|---|---|---|---|
| **Education** | **X** (GrowNYC, n.d.; Strochlic & Wirth, 2005; U.I. Extension, n.d.; Wardynski et. al., 2018) | | **X** (Bauman et al., 2019; GrowNYC, n.d.; Perez et. al., 2010; U.I. Extension, n.d.) | **X** (Nebraska Extension. n.d.; Perez et. al., 2010; UI Extension, n.d.) |

***Table 1 continued***

| | | | | |
|---|---|---|---|---|
| **Advising and Mentorship** | **X** (Duke, 2018) | **X** (Duke, 2018,) | **X** (Duke, 2018) | **X** (Nebraska Extension, n.d.) |
| **Networking and Farm Transfer** | | **X** (Nebraska, n.d.) | | **X** (Nebraska, n.d.) |
| **Farm Incubation** | **X** (Duke, 2018; Lowcountry Local First, n.d.) | **X** (Duke, 2018; Lowcountry Local First, n.d.; NSAC, 2017) | **X** (Duke, 2018) | **X** (NSAC, 2017; Strochlic & Wirth, 2005) |
| **Funding** | | | **X** (Bauman et al., 2019) | **X** (Bauman et al., 2019) |

## 3.0 Discussion

One of the main barriers aspiring or beginner farmers face is the cost of starting or acquiring a dairy production business. In this sense, we argue that this challenge presents an opportunity for transfer of ownership from existing dairy farmers to the new owners who are starting their ag-business journey. This model has been explored in several succession programs and reports (May et al., 2019; University of Minnesota Extension, 2022; Wyoming Agriculture and Natural Resource Mediation Program, 2011). When done correctly, it is a viable and productive way of allowing a coherent exit strategy for aged dairy owners who can systematically transfer ownership, train, and help to grow new dairy farmers. This option works very well with family members and inexperienced farmers entering the industry, especially with employees who want to own the business over time.

Another option is to form cooperatives where a portion or the whole of the business is owned and managed by diverse individuals who otherwise could not afford to own the company. Whatever the ownership situation or how the ownership is achieved over time, the following programs, separated by administrative scale, can help facilitate a successful dairy enterprise.

### *3.1 National-Level Programs*

National-level organizations leading the education and resources, economics and available human resources, and expertise include several United States Department of Agriculture (USDA) divisions. The USDA Farm Service Agency loans provide essential access to capital to help agricultural producers start or expand their farming operations, purchase equipment and storage structures, or meet cash flow needs (Farm Service Agency, n.d.). The Natural Resources Conservation Service can help

farmers with conservation projects by providing cost-share and technical expertise. This support can become paramount when beginning dairy farmers are taking over legacy farms that will need major modifications in their water, nutrient, and manure management. USDA has specific programs to help beginning, minority, veteran, women-owned, and youth farmers. These programs include grants, cost sharing, networking, and technical expertise and can be a fundamental asset for starting dairy enterprises or during the transition from one owner to another.

Several national-level Non Governmental Organizations(NGOs) serve as a resource hub for educational opportunities. Greenhorns is an organization that specializes in online resources, a guide for new and beginning farmers, and events throughout the year to help educate and network the farming community (Niewolny & Lillard, 2010; Greenhorns, n.d.). Organizations like Greenhorns provide an example of a sustained effort to create a "welcoming and hospitable culture for new entrants in sustainable agriculture" (Greenhorns, n.d., para. 3). The Young Farmers and Ranchers (2019) Program from the American Farm Bureau Federation is similar in that it leverages the American Farm Bureau Federation's legacy of farmer networks to find and foster a community of leadership among young farmers and ranchers (Niewolny & Lillard, 2010). This effort can also be accomplished through a national organization like the National Young Farmers Education Association (NYFEA), which utilizes pre-existing networks such as 4-H and Future Farmers of America (FFA) (Niewolny & Lillard, 2010; NYFEA, n.d.). NYFEA helps connect members of these groups to an annual event, as well as the Young Agricultural Leaders Experience program, aimed at education and mentorship (NYFEA, n.d.).

National-level NGOs and federal financing can also create a foundation for successful agri-community cooperation. The Beginning Farmer and Rancher Development Program (BFRDP) is a national NGO that has served as financial support to organizations in multiple states (National Sustainable Agriculture Coalition [NSAC], 2017). The Armed to Farm project, as it was called at its inception in 2010, was funded by a BFRDP grant and aimed to get veterans and underserved populations into farming (NSAC, 2017). Armed to Farm served its participants through week-long boot camps, workshops, 4,900 hours of internships, and an online course which was provided free of charge in English and Spanish (NSAC, 2017, p. 58). The program has had an immense reach, and the networking element of the program reported that 64 percent of participants had maintained contact with others they met in training (NSAC, 2017, p. 58-59). Another BFRDP-funded organization that has had significant success is The Agriculture & Land-Based Training Association (ALBA; NSAC, 2017). Unlike Armed to Farm, ALBA not only offers a 400-hour, bilingual instruction through their *Programa Educativo para Pequeños* (PEPA) program, but also a farm incubator program (NSAC, 2017, p. 60). A farm incubator can refer to land that can be used to start an agri-business, and it can also encompass marketing and production support (Niewolny & Lillard, 2010). An incubator, in this particular sense, means a piece of land for subsidized rent available to graduates of PEPA to start their agri-business. This approach has helped 38% of former participants farm independently, and allowed 71% to still work in agriculture (NSAC, 2017, p. 60–61). The BFRDP funded a program in Idaho in 2010 but is not financing any programs in Idaho at this time. This funding gap creates opportunities for Idaho farmers (NSAC, 2017).

### *3.2 State-level Programs*

State government or state-level NGO programs for addressing farm labor have fewer resources and smaller economies of scale than national-level agencies and NGOs. Still, state programs can offer substantial expertise and resources. Though most of the programs discussed in this paper incorporate the state agencies as part of a hybridized, integrated approach to farm labor maintenance and viability, there are examples of state agencies that operate somewhat independently of other collaborative networks (Niewolny & Lillard, 2010). An example of such an agency is the Massachusetts Department of Agricultural Resources, which provides grants, and advising in business management and planning to new farmers with at least two years of experience through the Farm Viability Enhancement Program (Niewolny & Lillard, 2010; Massachusetts Department of Agricultural Resources, n.d.). Through the creation of farm viability plans, the state of Massachusetts is able to aid farmers entering the agri-business industry while simultaneously fostering increased productivity and increased environmental sustainability (Massachusetts Department of Agricultural Resources, n.d.). States like Massachusetts show that using grant funding and direct advising can help tailor the agri-business industry to the state's economic and environmental goals.

The Idaho State Department of Agriculture has programs to help farmers and agribusiness in general. Even when not tailored only to beginning farmers, these programs offer training, expertise, financing, and networking opportunities that are available locally. These programs include Idaho Preferred, Organic Transition, grants, and loans (Idaho State Department of Agriculture, n.d.).

### *3.3 Extension Programs*

Extension programs are unique in that they are tied to the USDA as well as individual universities. Extension services differ from state to state, and this differentiation is illustrated in the unique strategies employed to grow and strengthen their farm communities. The Cooperative Extension Service, through the land grant universities, has a presence in all U.S. states and territories and in most counties. For more than 100 years, the extension service has helped farmers and agricultural communities with adult and youth education and training programs and applied research. They offer a myriad of programs covering most aspects of agriculture and also partner with institutions, government, and private industry at the local, state, and national levels. For example, the University of Missouri Extension's Growing Agribusiness Sustainably program focuses not only on prospective farmers but also experienced farmers and those who want to re-strategize their operation through networking and an educational course (Niewolny & Lillard, 2010; University of Missouri Extension [UME], n.d.). And programs like Growing Farms Online and Dairy Online Certificate from Oregon State University Professional and Contiuing Education (Oregon State University, n.d.) provide workshops and networking to help new farmers enter the agri-business industry (Niewolny & Lillard, 2010; UME, n.d.). But, there is also a need to connect the more experienced and retiring farmers with those who are entering the industry, as "U.S. farmers over age 55 control more than half the country's farmland" (Center for Rural Affairs, n.d., para. 3). Extension programs like the Beginning Farmer Center in Iowa address this by providing online resources, advising and counseling, and a college seminar not only to prepare prospective farmers but also to address the need for land transfer and the legal knowledge required (Niewolny & Lillard, 2010; Iowa State University Extension

and Outreach, n.d.). Some Extension programs related to beginner farmers in Idaho include the Cultivating Success and Small Farm Entrepreneurship for Military Families. Extension Services can combine long-established connections and academic research to address the unique challenges in their states.

### *3.4 Regional Cooperative Networks*

As mentioned above, a great strength of national-level, state-level, and extension programs is that they can leverage and expand cooperative networks so that prospective, experienced, and retiring farmers can find support and broad expertise when operating their agri-business. It does not necessarily require that a regional cooperative network be established by a governmental agency or an interstate NGO. In regions across the United States, cooperative networks exist as part of larger associations, independent NGOs, and informal collectives of agri-business professionals (Niewolny & Lillard, 2010).

Collaborative farm labor programs provided by farmer networks and associations represent the needs and resources of a given agricultural region and are highly grassroots in nature. Organizations like the Collaborative Regional Alliance for Farmer Training is an association of organic and biodynamic farms that offer apprenticeships and local networking and began as a way to increase educational opportunities on farms (Niewolny & Lillard, 2010; Collaborative Regional Alliance for Farmer Training, n.d.). Regional collaborative networks can be useful in attracting and training new farmers, as exemplified by the Small and Beginner Farmers of New Hampshire. This program offers direct help to new farmers with funding, production, and marketing: aiding small farmers in their collaborative effort to overcome the challenges facing new farmers (Niewolny & Lillard, 2010; Small and Beginner Farmers of New Hampshire, n.d.).

This style of grassroots collaboration is not just helpful in sharing knowledge among the existing farm industry but also proactively working to shape the agri-business industry of the future. By creating programs and collaborative networks that focus assistance to specific demographics, a region can have a great deal of say in what its agri-business industry evolves into. For example, the Practical Farmers of Iowa began as a grassroots effort to grow the use of scientific approaches to farming and offers the Next Generation Summit to connect retiring farmers to prospective farmers (Niewolny & Lillard, 2010; Practial Farmers of Iowa, n.d.). As mentioned above, farm transfer is a critical challenge facing contemporary U.S. farmers. Still, some farmer collectives also feel they would like to see their agri-business become more inclusive (Niewolny & Lillard, 2010). The Georgia Organics Mentoring Program offers resources to limited-resource farmers, and The New American Sustainable Agriculture Project in New Hampshire worked with immigrant and refugee farmers (Niewolny & Lillard, 2010; Wall, 2017; United States Department of Agriculture, n.d.). These incorporated networks of farmers provide advising and counseling, on-farm training, workshops, and other resources to help prospective farmers overcome economic and social barriers (Niewolny & Lillard, 2010). Growing New Farmers from Farm Catskills goes a step further and directly grows the next generation of farmers through their incubator program, which has led to the creation of more than 10 new farms (Niewolny & Lillard, 2010; UME, n.d.).

### *3.5 University and Two-year College Programs*

A great deal of talent resides within the universities, colleges, and other educational institutions of the United States, and this talent can be used to bolster the farm economies of Idaho. Research has shown that higher educational attainment in a county will generally result in higher per capita income (Marre, 2014). A study of the Great Lakes region found that cattle operators with higher educational attainment managed larger herds (Feng et al., 2018). But, those with higher educational attainment tend to move to urban areas to get a greater financial return on their educational investment (Artz & Yu, 2011). Farmers and educational institutions can collaborate to create effective programs for helping those with college degrees to join or rejoin rural labor markets and agricultural enterprises ownership (Niewolny & Lillard, 2010).

There are several university programs oriented toward new farmers and programs that try to address a much broader audience (Niewolny & Lillard, 2010). The Wisconsin School for Beginning Dairy and Livestock Farmers program takes a targeted route through a series of internships, courses, and workshops that are oriented toward prospective pasture-based dairy and livestock farmers (Niewolny & Lillard, 2010), and the results show that over three-quarters of the program graduates are now farming (Wisconsin School for Beginning Dairy and Livestock Farmers, n.d.). The Apprenticeship in Ecological Horticulture program provided by the University of California Santa Cruz uses courses, workshops, and on-farm training to increase the number and diversity of individuals with access to vital horticultural and agricultural knowledge (Niewolny & Lillard, 2010; University of California Santa Cruz, n.d.). Results from this program show that over 80% of alumni go on to successfully farm and garden (Strochlic & Wirth, 2005). Striving for social change by educating the next generation of farmers may require an approach that addresses policy-making and environmental stewardship. Michigan State University offers two separate programs, the Organic Farmer Training Program, oriented toward new farmers, including community gardeners and farmers, and the Beginning Farmers Program, oriented towards new, experienced, and potential farmers, as well as educators, activists, and policymakers (Niewolny & Lillard, 2010; Michigan State University, n.d.). The Beginning Farmers program, a more broadly targeted program that utilizes webinars, has been found effective as is evident by the number of people starting or expanding farms (Wardynski et al., 2018. Largely agricultural states such as Idaho could benefit from using their universities as a conduit between legislators, administrators of environmental policy, environmental activists, and academic research to create unique educational opportunities that strengthen their farm labor supply.

### *3.6 Hybrid Programs*

A hybrid program for addressing the loss of small farms is defined in this paper as any program that seeks to combine the previously described methods of education, training, funding, cooperation, and legislation into a multi-faceted approach. These programs are dominated by cooperative work between a combination of two or more partners, including Extension, USDA, or other government agencies, NGOs, industry associations, and private ag businesses. Such programs include the ALBA program aimed toward farm workers and aspiring farmers with limited resources. ALBA collaborates with government agencies, NGOs, and university and extension associations (Niewolny & Lillard, 2010). Their courses and training focus on civics, policy education, and business management, and the results show that over 80% of

those surveyed reported doing "paid or vocational work since graduation" (Perez et al., 2010, p. 114). These collaborative hybrid programs can represent a culmination of resources and organizational goals into an online resource, such as the Exploring the Small Farm Dream (n.d.) course. This program is provided by the New England Small Farm Institute and the Pioneer Valley Enterprise Program and has been adopted in several states (Niewolny & Lillard, 2010; NYFEA, n.d.). These programs can also manifest in the form of dynamic networks for land acquisition and making connections with other members of the agri-community, like the New York Beginning Farmer Program, which provides online courses, or the social networking assistance of the Vermont New Farmer Network (Niewolny & Lillard, 2010). The former has supported 48 farmers in beginning independent operations (GrowNYC, n.d.), and the latter program has successfully connected 22 partner agencies, land trusts, and farming cooperatives (University of Vermont Extension [UVM], n.d.). Another option is to combine such approaches into classroom sessions and mentorship like the Farm Beginnings Program in Nebraska, which has successfully led 80% of survey-responding graduates of the program to enter farming as an owner or manager.

As discussed above, there are programs oriented toward what is known as farm incubation. Consider the advantages of conducting a farm incubator that utilizes a multi-scale series of networks and resources. The Seed Farm is a farm incubator that uses expertise and resources from the Penn State Cooperative Extension Service, Pennsylvania state government agencies, and NGOs to provide assistance and mentorship to new farmers at every step of their professional development (Niewolny & Lillard, 2010; The Seed Farm, n.d.). Such a program does come with the risk of investing in new farmers. Still, The Seed Farm appears to be effective, as the results show that 52 people started farming, 248 people received assistance starting their farm, and 454 people improved their farming operation thanks to the program (Duke, 2018, para. 4). Farm incubators are a reasonable option for rural areas that would like to reinvigorate their farm industry with new individuals.

Collaborative and academic work that focuses on creating new paradigms and ways to encourage different sector of the population that historically don't see themselves as beginning farmers. Based on cultural studies and discourse analysis perspectives, and invetigating how collaborative-based initiatives negotiate power relations that legitimize who can be a 'new' farmer (Niewolny & Lillard, 2010). Several hybrid groups aim to address this historical differentiation of power and access in the farm industry by tapering their programs to new farmers, women farmers, and immigrant farmers (Niewolny & Lillard, 2010). The Women's Agriculture Network conducts courses, workshops, and learning circles for prospective and beginning female farmers to create a community of support and expertise (Niewolny & Lillard, 2010; UVM Extension, n.d.-b). A program in Idaho that aids beginning and existing immigrant farmers is the Cultivating Success program (Niewolny & Lillard, 2010; University of Idaho Extension [U.I. Extension], n.d.). This program is also unique in that it is made possible through interstate collaboration between the University of Idaho and Washington State University, with heavy involvement from the NGO, Rural Roots (Niewolny & Lillard, 2010; UVM Extension, n.d.-a). Participants in the program courses, internships, and mentorship, access educational material that addresses business planning, legal hurdles, and the social issues involved with the current agri-business industry (Niewolny & Lillard, 2010; U.I. Extension, n.d.). This program has had significant success, as the majority of participants surveyed had identified their farm goals and resources, and 56% had drafted a whole farm

plan, which is a comprehensive plan to address multiple aspects of the farm's operation (U.I. Extension, n.d.).

### *3.7 Case Study: Skagit County, Washington*

The University of Idaho and Washington State University's implementation of the Cultivating Success Program, and the networks they have built and strengthened, serve as particularly applicable templates for addressing the loss of small dairy farms in the Magic Valley and across Idaho (Cultivating Success, n.d.). Cultivating Success already has administrative capabilities to operate incentral Idaho, but there has been very little participation in Cultivating Success from Magic Valley crop and dairy farmers. The data provided by Cultivating Success and the on-the-ground knowledge of those who operate the program can help researchers and stakeholders alike understand how to best adapt and utilize a program like Cultivating Success.

Note that the coursework offered by Cultivating Success is not dependent upon the scale of the farm operation, it is oriented toward farm ownership, and is offered both in-person and through online resources (K. Smith, personal communication, August 26, 2019). Cultivating Success is a flexible educational tool, and in Skagit County, it has been optimized for their community. As noted by Kate Smith, who works in small and Latino farm support for Skagit County Extension, farm operators and farmworkers in Skagit County have significantly preferred face-to-face educational opportunities rather than online ones (K. Smith, personal communication, August 26, 2019). Another critical component of Skagit County Cultivating Success coursework is that it is offered in Spanish, and Spanish speakers are invited to guest events (K. Smith, personal communication, August 26, 2019). It is worth noting that providing culturally and contextually relevant guidance in addition to resources in both, Spanish and English, makes agricultural success approachable and relatable, as well as accessible. With these adjustments and other coursework adapted from the American Farmland Trust, an organization focused on supporting and protecting American farmland sustainability, the Skagit County Cultivating Success program was labored to complement and elevate their agricultural community (K. Smith, personal communication, August 26, 2019).

Cultivating Success has been a foundational part of the efforts in Skagit County to maintain, develop, and grow their farm community (K. Smith, personal communication, August 26, 2019). In the case of Skagit County, fine-tuning the Cultivating Success coursework was one of many community-specific steps to assist their local farmers. The agricultural courses offered at Skagit Valley College serve as the first step into agriculture for many who participate in Skagit County's Cultivating Success (Skagit Valley College, n.d.). Cultivating Success is then the second step in the process in which Skagit County attracts and trains new entrants into agriculture (Skagit Valley College, n.d.). The third step in the process is to assist Cultivating Success graduates in acquiring land to grow on and markets to sell in (K. Smith, personal communication, August 26, 2019). Viva Farms is a bilingual (English and Spanish) farm incubator, similar to the ones mentioned above, that works closely with Cultivating Success and Skagit Valley College to create a streamlined means for different areas of certification and farm ownership (K. Smith, personal communication, August 26, 2019; Viva Farms, n.d.).

### *3.8 Final Thoughts*

The synthesis above shows that each level of service can aid participants in continuing their agricultural careers. It is noteworthy that farm incubation services, as well as advising and mentorship services, were successful in attracting new entrants into farming, establishing new farms, encouraging the adoption of desired farming practices, and program participants continued in agriculture. This is not to say that other program services were not successful, but the recorded success of grassroots programs in this review speaks to the important role of the regional cooperatives and hybrid programs that employ incubation and advising services. The Skagit County case study should be considered not only for its similarity to counties in the Magic Valley, but also because it can be transferred to the dairy business and illustrates how hybrid programs can use resources from different scales to complement proven services.

Using educational content from a national-level organization, the state-wide resources of Idaho (Cultivating Success, n.d.) and Washington State's Cultivating Success, the expertise and networks of cooperative extension services, and partnering with Skagit Valley College, turned farm incubation and advising into a continuum of services rather than limited events. In this case, a continuum of services, a concept often used in nonprofit service delivery or care delivery, can be thought of as a long-term relationship with the participant which evolves to meet their changing needs. This synthesis asserts that challenges with the applicability of the Cultivating Success programs and their services to the southern Idaho context are minimal when the results of this review are considered.

The crop and dairy farm operators in the Magic Valley who are in need of agricultural assistance could benefit from the availability of educational programs, advising and mentorship services, and farm incubation programs if they want to apply proven results to combat the loss of small farms, even if only to find enthusiastic and highly-skilled entrants to agri-business. This review shows that extension and hybrid programs can be used to achieve multiple programmatic goals, but a hybrid program could be constructed with a far more narrow purpose and fit the Magic Valley context. These conclusions can be considered as simply a programmatic toolkit rather than providing a tool for all situations.

If the intention of a program to combat the loss of small dairy farms in the Magic Valley, and Idaho in general, is to maintain current crop and dairy farm profitability following their current consolidation and increased size model, this seems to conflict with the applicability of many of the programs above, as they focus on growing small farm operations. The concept of farm transfer for many in the Magic Valley is a point of lineage and pride rather than a matter of economic and environmental placemaking. Diversification and new business and market models for small dairies are paramount for the success of most of the programs analyzed in this review. Government, communities, and farm operators require alternative ways of conducting agri-business to be able to sustain and encourage new operators of small dairy farms.

## 4.0 Conclusions

Programs to attract, train, and retain talented and highly motivated individuals in crop and dairy farming exist across the country. They can be used to formulate collaborative solutions to the Magic Valley and Idaho's loss of small dairy farm operations. Directly comparing the effectiveness of all the programs mentioned

above is difficult because not all have evaluation results. Despite being unable to make definitive claims about the programs that lack an evaluation, one can observe that all evaluated programs successfully worked toward their organizational goals. This evaluation provides empirical data on the effectiveness of several different programs at different scales and styles.

The results reveal that some of the program services reviewed above are more successful than others in creating a variety of different effects in their food system, but all have been shown to have impacts that could be transferable to the Magic Valley and across the state of Idaho. This synthesis provides a multi-faceted toolkit to reduce the loss of small dairy and crop farms, benefiting rural communities and their food systems that will also have applicability in other parts of the U.S. The multiple scale approach of considering local extension, state, regional, and national programs as a suite of tools offers potential universality to address generational continuity of farms in North America.

## Acknowledgments

This work was supported by National Science Foundation (NSF) award SES-1639524 through the Innovations at the Nexus of Food, Energy, and Water Systems program.

All findings and conclusions are those of the authors and do not reflect the views of NSF.

The authors are grateful to Audrey Martinez and Sarah Gilmore for their contributions to data collection for this work.

## References

Artz, G., & Yu, L. (2011). How ya gonna keep' em down on the farm: Which land grant graduates live in rural areas? *Economic Development Quarterly, 25*(4), 341–352. https://dx.doi.org/10.1177/0891242411409399

Bauman, A., DePhelps, C., & McFadden, D.T. (2019). Assessing a local food system: The Palouse-Clearwater Food Coalition assessment process. *Journal of Agriculture, Food Systems, and Community Development, 8*(C), 107–118. https://doi.org/10.5304/jafscd.2019.08C.008

Bunting, S. (2022, March 4). U.S. dairy herds fall below 30,000: Milk's changing landscape prompts lawmaker's interest in revitalizing dairy and rural economies in Southeast and beyond. *Ag Moos*. https://agmoos.com/2022/03/04/u-s-dairy-herds-fall-below-30000-milks-changing-landscape-prompts-lawmakers-interest-in-revitalizing-dairy-and-rural-economies-in-southeast-and-beyond/

Center for Rural Affairs. (n.d.). *Beginning farmer and rancher opportunities*. Retrieved February 20, 2022 from https://www.cfra.org/farmers

Collaborative Regional Alliance for Farmer Training. (n.d.). *Collaborative Regional Alliance for Farmer Training*. Retrieved February 20, 2022 from https://craftfarmapprentice.com/

Cultivating Success (n.d.). Sustainable small farms education. Retrieved February 09, 2023, from https://www.cultivatingsuccess.org/idaho

Duke, A. (2018, November 19). *Penn State extension program for beginning farmers wins national accolades.* https://www.psu.edu/news/impact/story/penn-state-extension-program-beginning-farmers-wins-national-accolades/

Exploring the small farm dream: Course & workbook. (n.d.). Retrieved February 17, 2022 from https://www.beginningfarmers.org/exploring-the-small-farm-dream-course-workbook/

Farm Service Agency. (n.d.). https://www.fsa.usda.gov/

Feng, H., Hennessy, D. A., Jia, Y., McKendree, M. G. S., & Wolf, C. A. (2018). Dairy sector consolidation, scale, automation and factor biased technical change: Working through "get big or get out". *Choices*, *33*(4) 1–8. https://www.jstor.org/stable/26758648

Greenhorns. (n.d.). *Greenhorns new farmers*. Retrieved February 20, 2022 from https://greenhorns.org/

GrowNYC. (n.d.). *Beginning Farmer Program*. Retrieved February 20, 2022 from https://www.grownyc.org/farmroots/nfd

Haan, M. M. (n.d.). 8 things you need to know before starting your own dairy farm. Penn State Extension. https://extension.psu.edu/8-things-you-need-to-know-before-starting-your-own-dairy-farm

Hennessy, D. A., & Feng, H. (2018). America's dairy industry facing difficulties from long-running structural changes. *Choices*, *33*(4). 1–4. https://www.jstor.org/stable/26758647

Idaho Dairymen's Association. (n.d.). *The Idaho Dairymen's Association*. Retrieved from https://idahodairymens.org/

Idaho State Department of Agriculture. (2022). Idaho Agriculture. Our Success Story. Retrieved February 10, 2023. Infographic. https://agri.idaho.gov/main/wp-content/uploads/2022/02/2021-Idaho-Ag-Facts-Infographic-web.pdf

Idaho State Department of Agriculture. (n.d.). *Marketing Development Division*. https://agri.idaho.gov/main/marketing/

Iowa State University Extension and Outreach. (n.d.). *Beginning Farmer Center*. Retrieved February 20, 2022 from https://www.extension.iastate.edu/bfc/

Kliskey, A., Abatzoglou, J., Alessa, L., Kolden, C., Hoekema, D., Moore, B., Gilmore, S., & Austin, G. (2019). Planning for Idaho's waterscapes: A review of historical drivers and outlook for the next 50 years. *Environmental Science & Policy*, *94*, 191–201. https://doi.org/10.1016/j.envsci.2019.01.009

Kliskey, A., Williams, P., Trammell, E. J., Cronan, D., Griffith, D., Alessa, L., Lammers, R., DeHaro, M. M,. & Oxarango-Ingram, J. (2023). Building trust, building futures: Knowledge co-production as relationship, design, and process in transdisciplinary science. *Frontiers in Environmental Science*. Advance online publication.

Lowcountry Local First. (n.d.). Growing New Farmers Program. Retrieved February 20, 2022 from http://lowcountrylocalfirst.org/gnfp/

MacDonald J. M., Law J., & Mosheim, R. (2020, July). *Consolidation in U.S. dairy farming* [Economic Research Report 274]. United States Department of Agriculture, Economic Research Service. http://dx.doi.org/10.22004/ag.econ.303971

Marré, A. W. (2014). College education in the post-recession rural economy. *Choices, 29*(2). http://choicesmagazine.org/choices-magazine/submitted-articles/college-education-in-the-post-recession-rural-economy

Massachusetts Department of Agricultural Resources (n.d.). Farm Viability Enhancement Program. Retrieved February 20, 2022 from http://www.mass.gov/service-details/farm-viability-enhancement-program-fvep

May, D., Arancibia, S., Behrendt, K., & Adams, J. (2019). Preventing young farmers from leaving the farm: Investigating the effectiveness of the young farmer payment using a behavioural approach. *Land Use Policy, 82*, 312–327. https://doi.org/10.1016/j.landusepol.2018.12.019

Michigan State University. (n.d.). *Organic Farmer Training Program*. Retrieved February 20, 2022 from http://www.msuorganicfarm.org/organic-farmer-training-program.html

National Sustainable Agriculture Coalition, (2017). Cultivating the next generation: An evaluation of the Beginning Farmer and Rancher Development Program (2009 to 2015). https://sustainableagriculture.net/wp-content/uploads/2017/10/Cultivating-the-Next-Generation-Oct-2017.pdf

National Young Farmer Educational Association. (n.d.). *NYFEA—The association for educating agricultural leaders*. Retrieved from http://www.nyfea.org/what-we-do.html

Nebraska Extension. (n.d.). *Farm Beginnings Program*. Retrieved February 20, 2022 from https://extension.unl.edu/statewide/nemaha/GarysPDFs/Farm%20Beginnings%20Brochure%202018%20Revised.pdf

Niewolny, K. L., & Lillard, P. T. (2010). Expanding the boundaries of beginning farmer training and program development: A review of contemporary initiatives to cultivate a new generation of American farmers. *Journal of Agriculture, Food Systems, and Community Development, 1*(1), 65–88. https://doi.org/10.5304/jafscd.2010.011.010

Oregon State University. (n.d.). Professional and Continuing Education. Retrieved February 10, 2023. https://workspace.oregonstate.edu/catalog-page#all-courses

Perez, J., Parr, D., & Beckett, L. (2010). Achieving program goals? An evaluation of two decades of the Apprenticeship in Ecological Horticulture at the University of California, Santa Cruz. *Journal of Agriculture, Food Systems, and Community Development, 1*(1), 107–124. https://doi.org/10.5304/jafscd.2010.011.012

Practical Farmers of Iowa. (n.d.). Practical Farmers of Iowa: History. Retrieved February 20, 2022 from https://practicalfarmers.org/about/history/

Skagit Valley College. (n.d.). *Sustainable agriculture education*. Retrieved February 20, 2022 from https://www.skagit.edu/academics/areas-of-study/food-beverage-management/sustainable-agriculture-education

Small and Beginner Farmers of New Hampshire. (n.d.). *Small and Beginner Farmers of New Hampshire*. Retrieved from https://www.sbfnh.org

Strochlic, R., & Wirth, C. (2005). *From farmworker to farmer: Findings from an evaluation of the Agriculture and Land-Based Training Association Small Farmer Education Program*. California Institute for Rural Studies.

The Seed Farm. (n.d.). Growing new farmers for the future. Retrieved February 20, 2022 from http://www.theseedfarm.org

United States Department of Agriculture, Research, Education and Economics Information System. (n.d.). *New American Sustainable Agriculture Project—N.H.* Retrieved February 20, 2022 from https://reeis.usda.gov/web/crisprojectpages/0229469-new-american-sustainable-agriculture-project-nh.html

University of California Santa Cruz, Center for Agroecology. (n.d.). *Apprenticeship Program*. Retrieved February 20, 2022 from https://casfs.ucsc.edu/apprenticeship/

University of Idaho Extension. (n.d.). *Cultivating Success: Collaborating to grow and support sustainable Idaho small farms*. Retrieved February 20, 2022 from https://www.uidaho.edu/-/media/UIdaho-Responsive/Files/Extension/admin/Impacts/2016/20-16aagenbroad-farms.pdf?la=en&hash=EC9AF94A1B14BA381F6AAA19635B1BAF46815297

University of Minnesota Extension. (n.d.). *Transfer and estate planning*. https://extension.umn.edu/business/transfer-and-estate-planning

University of Missouri Extension (n.d.). *Growing agribusiness sustainably*. Retrieved February 20, 2022 from https://extension.missouri.edu/programs/growing-agribusiness-sustainably

UVM Extension. (n.d.-a). *Resource guide for Vermont's new and aspiring farmers*. Retrieved February 20, 2022 from http://www.uvm.edu/newfarmer/?Page=resource_guide/index.php&SM=resource_guide/sub-menu.html

UVM Extension. (n.d.-b). *Women's Agricultural Network*. Retrieved February 20, 2022 from http://www.uvm.edu/wagn/

Vermeer, M. (n.d.) *Idaho State Department of Agriculture* [presentation]. https://www.acwa-us.org/wp-content/uploads/2018/10/Mitch-Vermeer-Idaha-Animal-Agriculture-Program-2018-CAFO-Roundtable.pdf

Viva Farms. (n.d.). *Farming & education.* Retrieved February 20, 2022 from https://vivafarms.org/farming-and-education-2/

Wall, M. (2017, June 13). *1-on-1 Coaching Works*. Retrieved from https://georgiaorganics.org/2017/06/lets-go-deeper-1-1/

Wardynski, F. A., Isleib, J. D., & Eschbach, C. L. (2018). Evaluating impacts of five years of Beginning Farmer Webinar Training. *Journal of Extension, 56*(6) Article 9. Retrieved from https://tigerprints.clemson.edu/joe/vol56/iss6/9

Wisconsin School for Beginning Dairy and Livestock Farmers. (n.d.). Former students. Retrieved February 20, 2022 from http://wsbdf.wisc.edu/meet-former-students/

Wyoming Agriculture & Natural Resource Mediation Program and the University of Wyoming Cooperative Extension Service. (2011, February 11). *Passing it on: An estate planning resource guide for Wyoming's farmers and ranchers*.

Young Farmers and Ranchers. (2019). Retrieved February 20, 2022 from https://www.fb.org/program/young-farmers-ranchers