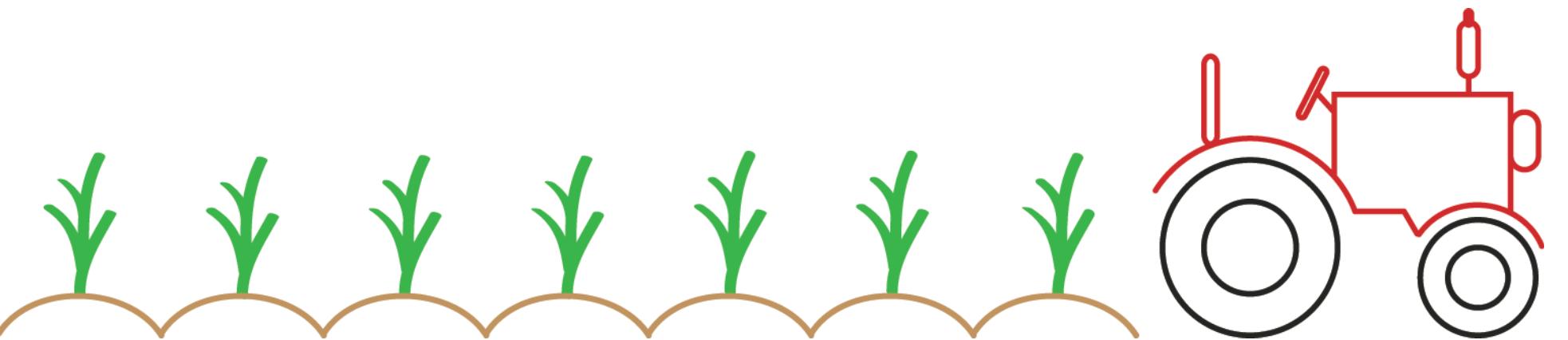


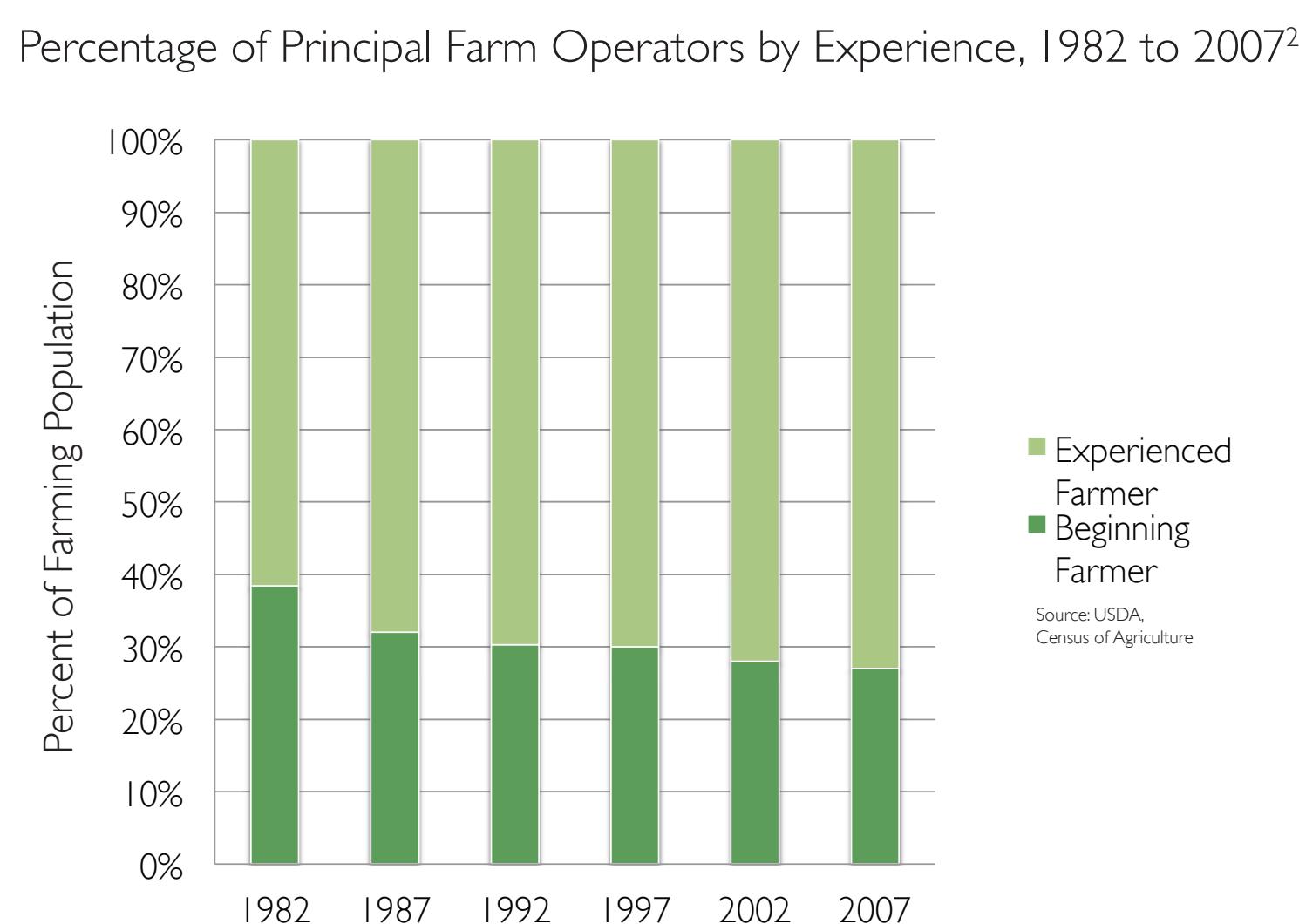
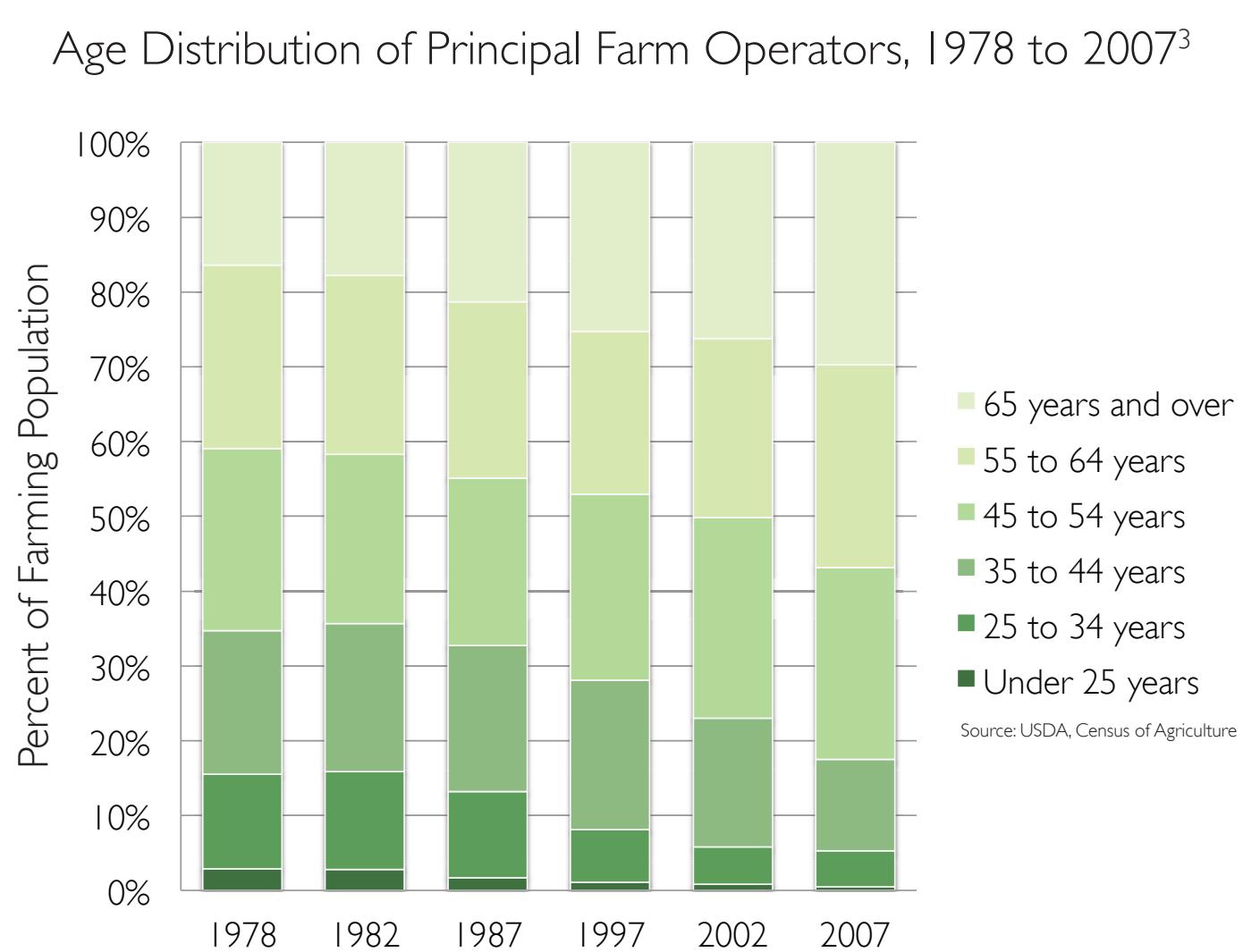
# TRAINING A NEW GENERATION OF FARMERS



DOES THE AVAILABILITY OF FARMER TRAINING OPPORTUNITIES AFFECT THE NUMBER AND DISTRIBUTION OF BEGINNING FARMERS IN THE MID-ATLANTIC?

## AMERICA NEEDS MORE NEW FARMERS

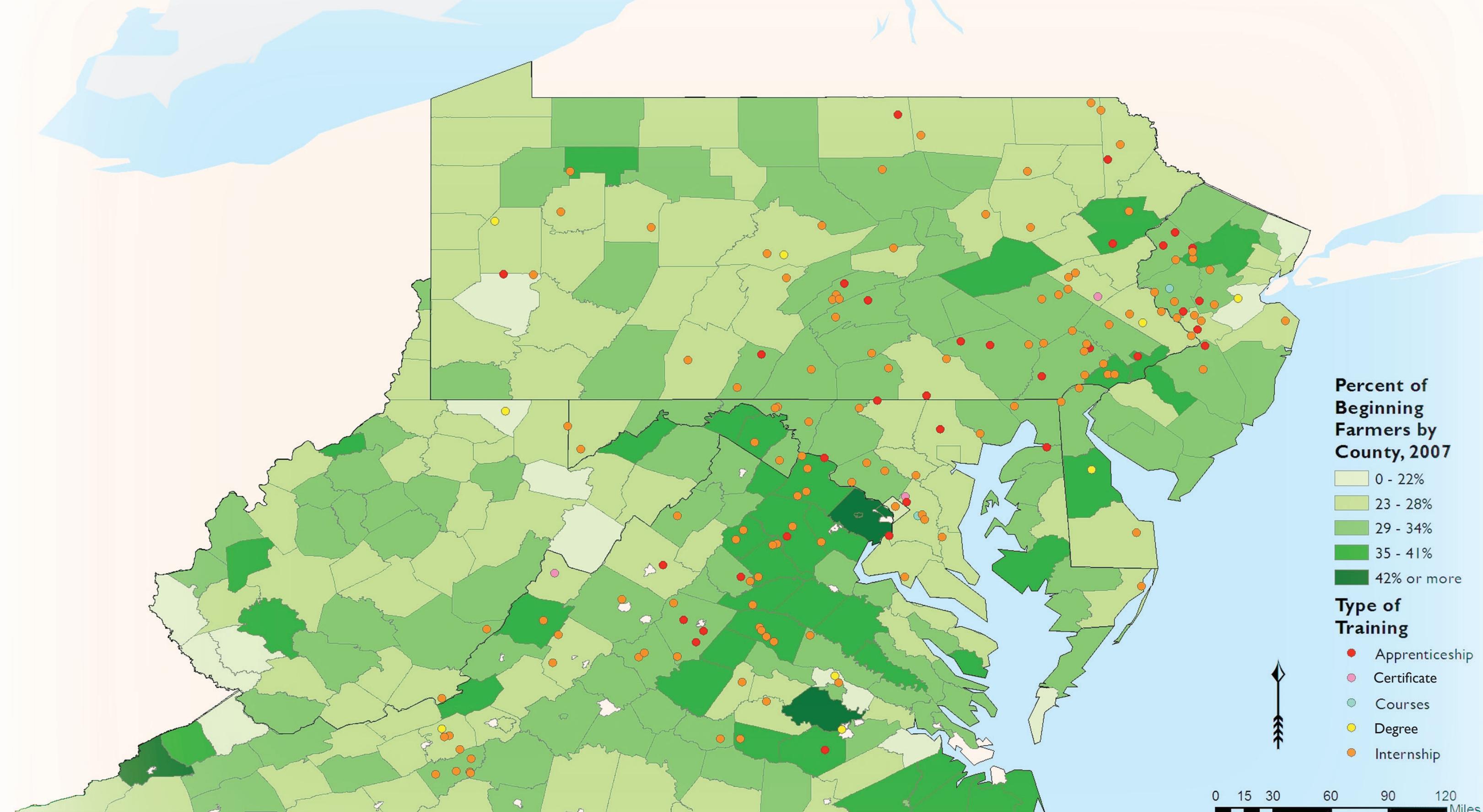
Currently, there are six times as many farmers over the age of 65 as there are under the age of 35<sup>1</sup>. As they retire, the farming population shrinks while the total population continues to grow. There are fewer total farmers – and fewer new, young farmers – each year to meet an increasing demand for food and to hopefully do so in an environmentally sound way<sup>2</sup>. Compared to the average established farmer, the average beginning farmer – that is, an individual who has been farming for less than ten years – is younger, runs a smaller operation, and faces more obstacles including limited access to credit and land<sup>3</sup>. It is imperative that beginning farmers receive the training and support they need to create viable agricultural enterprises, gain respect as professionals, and advance sustainability in the field<sup>4</sup>.



## NEW FARMERS NEED MORE TRAINING

Access to training opportunities for beginning farmers is especially important because so few people grow up on farms anymore. Agricultural knowledge is rarely passed down within families. Individuals who do turn to farming careers must seek out agricultural education elsewhere. This has led to the recent growing popularity and availability of various farmer training programs across the country, many of which focus on sustainable production methods. These range from strongly curriculum-based programs at accredited universities to training courses at non-profit organizations to less formal internships or apprenticeships on privately owned and operated farms.

## PERCENT OF BEGINNING FARMERS BY COUNTY AND DISTRIBUTION OF FARMER TRAINING OPPORTUNITIES IN THE MID-ATLANTIC UNITED STATES



## RESEARCH QUESTIONS

- Is the availability of training opportunities in the Mid-Atlantic United States correlated with the number of beginning farmers in the area?
- Could these programs be a key part of the solution to supporting a new generation of environmentally and economically sustainable farmers?
- Where are training programs and beginning farmers geographically concentrated, and is there overlap between these two variables?

This project aims to describe the relationship between the distribution of training programs in sustainable agriculture and the distribution of beginning farmers in the United States by layering the two variables on a single map. This has not been done before, and presenting the data in a spatial analysis may prove to be helpful in assessing the research questions.

A positive correlation between the presence of farmer training programs and the number of beginning farmers in a state may indicate that the availability of formalized agricultural education is a factor affecting the number of individuals who pursue farming as a career. If the correlation is strongly positive, this may suggest that a key way to support beginning farmers is to provide more training opportunities and/or focus on improving the quality of existing ones.

## OPERATIONAL DEFINITIONS

**Apprenticeship**<sup>5</sup> – A legally binding agreement in which a specific number of the apprentice's labor hours are exchanged for a specific amount of instruction in the agricultural trade. Apprenticeships are usually paid positions on farms.

**Beginning Farmer**<sup>6</sup> – Defined by the USDA as an individual who has not been farming or ranching for more than ten years, and "will materially and substantially participate in the operation of the farm or ranch."

**Certificate** – A program in which the trainee receives a certificate from an institution upon successful completion of a determined curriculum and a set number of supervised experiential learning hours. Certificate programs typically require payment of tuition.

**Courses** – Either a single class or a series of classes provided by a university, community college, extension program, government program, or non-profit organization that pertains to a specific skill or set of sustainable agriculture skills. Courses may require payment of fees.

**Degree** – A program at an accredited university in which a student receives a bachelor's or master's degree in a field related to sustainable agriculture, with an emphasis on technical skills. Degree programs require payment of tuition.

**Internship**<sup>7</sup> – A position of understudy to a farm employee in which the labor performed is similar to supervised practical training that would be given in an educational environment and is expressly for the educational benefit of the intern. Internships are rarely paid.

## METHODOLOGY

**Beginning Farmer Population** – Data from the 2007 Census of Agriculture is available through reports by the Economic Research Service and the National Agricultural Statistics Service. Due to confidentiality issues limiting access to raw population numbers, this map was generated by indexing the percent of beginning farmers as a share of all farmers in each county within Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia. Each state's list of indexed counties was joined with a map of county boundaries from the Census Bureau's 2012 Topologically Integrated Geographic Encoding and Referencing (TIGER) database. The index categories are depicted in a graduated color symbology.

**Farmer Training Opportunities** – Consolidating data on the locations of farmer training opportunities involved combing through listings of degree and certificate programs, courses, internships, and apprenticeships related to sustainable agriculture provided by the National Agricultural Library and the National Sustainable Agriculture Information Service. Each listing was reviewed for relevance to the research questions and to ensure that the program is still active, and the address and type of training program were recorded. The addresses were then geocoded using the 10.0 North America Geocode Service, and symbology differentiates color based on type of program.

## CONCLUSIONS

The spatial analysis may show a correlation between locations of farmer training opportunities and the percentage of beginning farmers per county. However, no conclusions of significance can be drawn from it. There are many variables that could be affecting the number and distribution of beginning farmers, including suitability of farmland, proximity to major highways, access to markets, price of farmland, and more. A multiple linear regression analysis is needed. Further variables to consider in this research project include changes in the number of programs over time, changes in numbers of beginning farmers over time, whether farmers are going through training programs in their own states, and the differing qualities of various training programs.

Poster Design and Cartography by Meredith Epstein  
May 1, 2013  
Coordinate system: WGS 1984  
Data Sources: USDA Census of Agriculture, Economic Research Service, National Agricultural Library, National Sustainable Agriculture Information Service, Tufts GIS Conference



<sup>1</sup> U.S. Department of Agriculture, National Agricultural Statistics Service. 2007. *Census of Agriculture: Farmers by Age*. 2007. Accessed March 12, 2013. [http://www.agcensus.usda.gov/Publications/2007/Online\\_Highlights/Fact\\_Sheets/Demographics/farmer\\_age.pdf](http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/Demographics/farmer_age.pdf)

<sup>2</sup> Economic Research Service. 2013. *Beginning Farmers and Ranchers at a Glance*. 2013. U.S. Department of Agriculture. Accessed March 14, 2013. <http://www.ers.usda.gov/media/98813/ebs12.pdf>

<sup>3</sup> Ahearn, Mary and Doris Newton. 2009. *Beginning Farmers and Ranchers*. U.S. Department of Agriculture, Economic Research Service. Accessed March 14, 2013. [http://www.ers.usda.gov/media/156049/ebs53\\_1\\_.pdf](http://www.ers.usda.gov/media/156049/ebs53_1_.pdf)

<sup>4</sup> Shute, Lindsey Lusher et al. 2011. *Building a Future with Farmers: Challenges Faced by Young American Farmers and National Strategy to Help Them Succeed*. Accessed March 12, 2013. <http://www.youngfarmers.org/newsroom/building-a-future-with-farmers-october-2011/>

<sup>5</sup> U.S. Department of Labor. n.d. *Apprenticeship*. Accessed April 30, 2013. <http://www.dol.gov/compliance/topics/wages/apprenticeships.aspx>

<sup>6</sup> U.S. Department of Agriculture. 2010. *Limited Resource Farmer and Rancher – Beginning Farmer Program Definition*. Accessed March 12, 2013. <http://www.dol.gov/vetreg/compliance/whats71.htm>

<sup>7</sup> U.S. Department of Labor. 2010. *Fact Sheet #71: Internship Programs Under the Fair Labor Standards Act*. Accessed April 30, 2013. <http://www.dol.gov/vetreg/compliance/whats71.htm>