

Intervale Community Farm: Alternative Business Model for Resilient Farming

Intervale Community Farm (ICF) is a member owned, community supported agriculture cooperative. The cooperative began in 1990, and has been farming at the Intervale in Burlington, Vermont since it began. They lease 60 acres from Intervale Center, a nonprofit that stewards land along the Winooski River. Twenty-five of those acres are currently being farmed. A Board of Directors elected by members governs ICF. They employ two full time staff to manage the farm. Becky Maden is one of the Farm Managers, and has been with ICF for ten years.

Production

ICF focuses on vegetables, but they also grow herbs, fruit, and cut flowers. They have 550 community supported agriculture shares.

Practices

ICF is a certified organic farm through Vermont Organic Farmers.

Climate Impacts Seen

Flooding has had a major impact on ICF. The farm has been affected 6 out of the last 10 years by flooding. The year 2010 was the first big economic hit (Becky estimates that they had \$30,000 in damages). Serious losses followed in 2011 from early spring floods and then Tropical Storm Irene in August.¹ While Becky points out that her ability to identify long term trends is limited as she has only been farming with ICF for 10 years, she does notice that in recent years the flooding seems to come at more variable times during the season. Flooding in



ICF was one of the first CSA programs in Vermont

the spring is to be expected on a floodplain such as the Intervale, but there have been several floods later in the summer, which interferes more with Vermont's growing season.

Becky also notices an increase in the intensity of precipitation. "Its not so much the volume of rain, but the severity of downpours." Last summer was the first time she noticed soil crusting, when a hard layer is formed on the surface. This can affect plant germination and seedling emergence². While intensive tilling can contribute to soil crusting, it is also caused by soil drying out after heavy downpours.

One of the advantages of farming in Vermont with a shorter growing season is a very cold winter that helps control diseases and pests. The milder winters in recent years, with the exception of 2013,

The Community Supported Agriculture (CSA) model first took hold in the U.S. with two New England farms in the 1980's, one in Massachusetts and one in New Hampshire.⁵ Since then the model has expanded greatly throughout the region (and country). The Intervale Community Farm is just one example; Vermont alone is home to over 65 Organic CSA farms.⁶ In New England, there are over 1,600 farms that report at least a portion of their market as CSA.⁷

are threatening to decrease this advantage. "I think all that stuff is pretty scary," says Becky. ICF farmers have noticed new insects arriving in the last few years. The spotted winged drosophila is a big issue; this pest has been moving up the east coast and damaging soft fruit. It arrived in New England in 2013. Many diseases arrive from the south, and farmers track their movement. "They are arriving earlier, so a lot of pests have more generations," says Becky. ICF is also affected by swede midge, which damages brassica (i.e. the cabbage and broccoli family), and the leek moth, which attacks crops like garlic and onions.⁴ Interestingly, both of these invasive species arrived from Canada.⁴ Becky wonders if their arrival has more to do with an increasingly global economy and less to do with warmer temperatures. For example, increased shipping of produce across state, regional, and international borders means greater opportunity for the spread of pests.

Response

ICF has adapted its business model in order to be more resilient to flooding, particularly after Irene in 2011. One action they are taking is working towards an income framework that is longer than 12 months. This means finding a way to capture income from excess produce during a good year and save it as a buffer for following years. Traditionally, ICF provides a bonus to members every year. Now, they are taking about a third of the produce that would usually be a member's bonus, selling it at wholesale, and putting this money into savings.

Another resilience strategy is ICF's plan to maintain the CSA year round. They are calling this the Fourth Season project. To achieve this goal, ICF has built several new greenhouses and added a cooler. They will store more produce, try to grow more greens under high tunnels, and freeze some fresh produce. This, along with the increased production in the new greenhouses, should push ICF into year round production. "Right now there is just a March through June gap," says Becky. "It shouldn't be too tricky." However, this expansion into a year-round model has been expensive (an estimated \$120,000 without labor). Because they do not own the land and have very little collateral, bank loan availability is limited. To successfully finance the project, ICF took loans from coop members, a resource which has turned out to be a nice benefit of their business model.

The farmers at ICF are also trying to take greater advantage of income generating opportunities other than production. This involves utilizing their human resources and knowledge. Right now, ICF is working with the University of Vermont Farmer Training program. The farmers get paid to host participants and give talks. After Irene, Becky says that she began to value this type of activity.

Even with the security of the greenhouses, a large part of farming is risk management, especially when farming on a floodplain. Becky says that this year, they put their early greens on the lower acreage. If



Penny believes that many farmers are forcing crops to grow earlier in the season, which can affect their taste and quality. The Jordan family tends to wait until they feel conditions are right.



While warmer temperatures are problematic for some crops, like cabbage, other crops such as melons do well with more heat. As part of the Fourth Season Project, ICF has added several greenhouses on higher land

the lettuce floods, they can replant and harvest in a few weeks. They are also planning to incorporate more grains into the business; grains require less input and are less susceptible to flood damage. If they are damaged, there is still some benefit; grains can be sold as animal feed or left as cover crops. “We also make sure to evaluate what is a keystone crop for us, and not put that in the fields at the greatest flood risk.”

To give themselves a small amount of flexibility with water levels, the farmers at ICF are experimenting with raised beds. Planting in higher beds will allow for drainage during very minor floods. They bought a raised bed former, an investment of several thousand dollars. Does it help? “It’s hard to say this year,” says Becky. However, “they are pretty cool beds.”

Challenges

Flooding is definitely the biggest challenge for ICF. Nevertheless, Becky notes that every challenge comes with benefits. For example, there is high risk of flooding at the Intervale, but they also have superb soil and flat fields to farm on. The urban location close to Burlington can mean theft and vandalism, but it also means access to a great market.

Recommendations

“I would recommend some sort of financial buffer,” says Becky. Diversity of cropping is very important in that sense. “If you have one crop that’s ripe at a certain time and that goes, you are lost.” Greenhouses, given that they are on secure land, also provide a buffer. Farmers can control the environment in a greenhouse, and even if all other crops are lost due to extreme weather, they should be able to sell some produce of value.

For ICF, being a cooperative CSA that is part of a strong community provided them with the needed buffer to survive the damage from Irene in 2011. ICF has a system of policy governance by the board of directors, and a lot of time goes into thoughtfully structuring safety and support networks. “That saved us.”

Becky also believes that the effort of the ICF farmers to think about which crops are going where, and the timing of planting and harvesting, pays off in the long run. Once again, this comes back to planning for long-term survival, being able to cut losses, and having a multi-year business plan.

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Identified Needs and Opportunities

Becky noted a few suggestions that she believes would help ICF and other farms.

- Extension and researchers need to clearly communicate pest and disease issues to farmers. Farmers also need more access to resources and tools that help with control.
- Farmers need accessible information on how they can be better land stewards. For example, soil techniques to help with carbon capture and storage. As Becky asks, “rather than just letting ourselves get knocked around by climate change and adapt to the forces, how can we be a positive force?”

Resources

- The Vermont Food Atlas has drafted a report outlining the impacts of Climate Change on Vermont Food Systems: <http://www.vtfoodatlas.com/assets/resources/files/Climate%20Change%20and%20Vermonts%20Food%20System.pdf>
- Becky finds the University of Massachusetts Vegetable Notes helpful: <https://extension.umass.edu/vegetable/publications/vegetable-notes-newsletter/archives>
- Intervale Center is a nonprofit that is committed to strengthening community food systems: <http://www.intervale.org>

References

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This case study was researched and written by UNHSI’s 2014 Thomas W. Haas Climate Fellow, Ruby Woodside. Ruby’s fellowship focused on documenting and communicating climate impacts and adaptation strategies for New England farmers and fishermen. Ruby is currently working on a Masters of Environmental Science and Policy as well as an MBA in Sustainability at Clark University. The fellowship is based at the UNH Sustainability Institute, and hosted in collaboration with Food Solutions New England (FSNE). FSNE is a regional, collaborative network organized around a single goal: to transform the New England food system into a resilient driver of healthy food, sustainable farming and fishing, and thriving communities. Learn more at www.foodsolutionsne.org.