Alarmed by farmland conversion, growing food insecurity, and increasingly threatened resources, multi-stakeholder groups seek to improve access to fresh food and protect farmland’s multiple benefits.

Data Collection and Analysis Methods
Transdisciplinary research is framed by agroecological resilience principles to study complex systems.

Nested Multi-level Case Study Design

From a list of 100 direct-to-consumer (DTC) market farms, 23 diverse farms, selling fruits, vegetables, and/or nuts were selected.

Primary data collection: semi-structured interviews and farming system assessments on 23 farms; two farmer-only roundtables; and participant observation in activities involving farmers (markets, workshops...).

A farm resilience assessment tool (FRAT) framework with 29 indicators across agronomic, economic, environmental, and social realms was developed to gather, quantify, and analyze data from the study farms.

Analysis of public data compiled from multiple sources documented the high rate of farm turnover, a steady loss of agricultural capacity across all operational scales, and data insufficiencies.

Results
Secondary data revealed a 16% reduction in cropland acres in the County, 2012—2017. About 6,600 acres of productive land was converted to urban and/or suburban development, 2001—2016 [1].

Study farms implement a diversity of innovative agroecological and marketing strategies to help overcome risks—important factors for farm resilience and a sustainable local food movement. Despite scoring well by these criteria, 11 of the 23 study farms no longer produce food commercially.

Local farms, popular with consumers and networks, are only marginally resilient, at best [2].

This research found an urgent need to redesign local policies, public institutions, and support networks in accordance with stated farmer needs.

Conclusions:

• Farmers “Love farming”
• Farmers can do everything right at the farm-level
• High turnover of farms at study, County, State levels
• County agriculture is vulnerable & under-supported;
• Limited land tenure, water access, protections
• Portland Metro urban agro-ecosystems are vitally connected as a city-region foodshed.

References


Acknowledgements

• Farmers
• Food System Stakeholders, Community Partners
• Food System Researchers [Literature]
• Washington State University (WSU): School of the Environment, Graduate School
• Ph.D. Dissertation Committee
• WSU Extension (Food System Team, Clark County)
• Ronin Institute
• Portland & OSU food system innovation

Purpose

To study farm-level resilience within the fragmented, sprawling, understudied Clark County of SW Washington, across the Columbia River from Portland.

To inform the allocation of scarce resources needed to sustain local food production.

Research Questions (RQ):

1. Given vulnerabilities, what will be needed to retain and enhance local food production capacity for the long term?
2. What are useful indicators of agronomic, economic, environmental, and social resilience for food-producing farms in rapidly urbanizing contexts such as Clark County (in SW Washington)?

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