

Midwest Specialty Crop Growers' Views on Climate Change Impacts

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Introduction and Rationale

A warm spring followed by late frosts decimated Michigan's tree fruit crop in 2012. This weather pattern may become more frequent under climate change, which would increase fruit growers' risk. Additional risks faced by other Midwest specialty crop producers are not well understood. This research is a preliminary investigation into what specialty crop growers perceive to be their biggest upcoming challenges under climate change, which can be used to inform both future survey development and other extension research.

Experimental Procedure

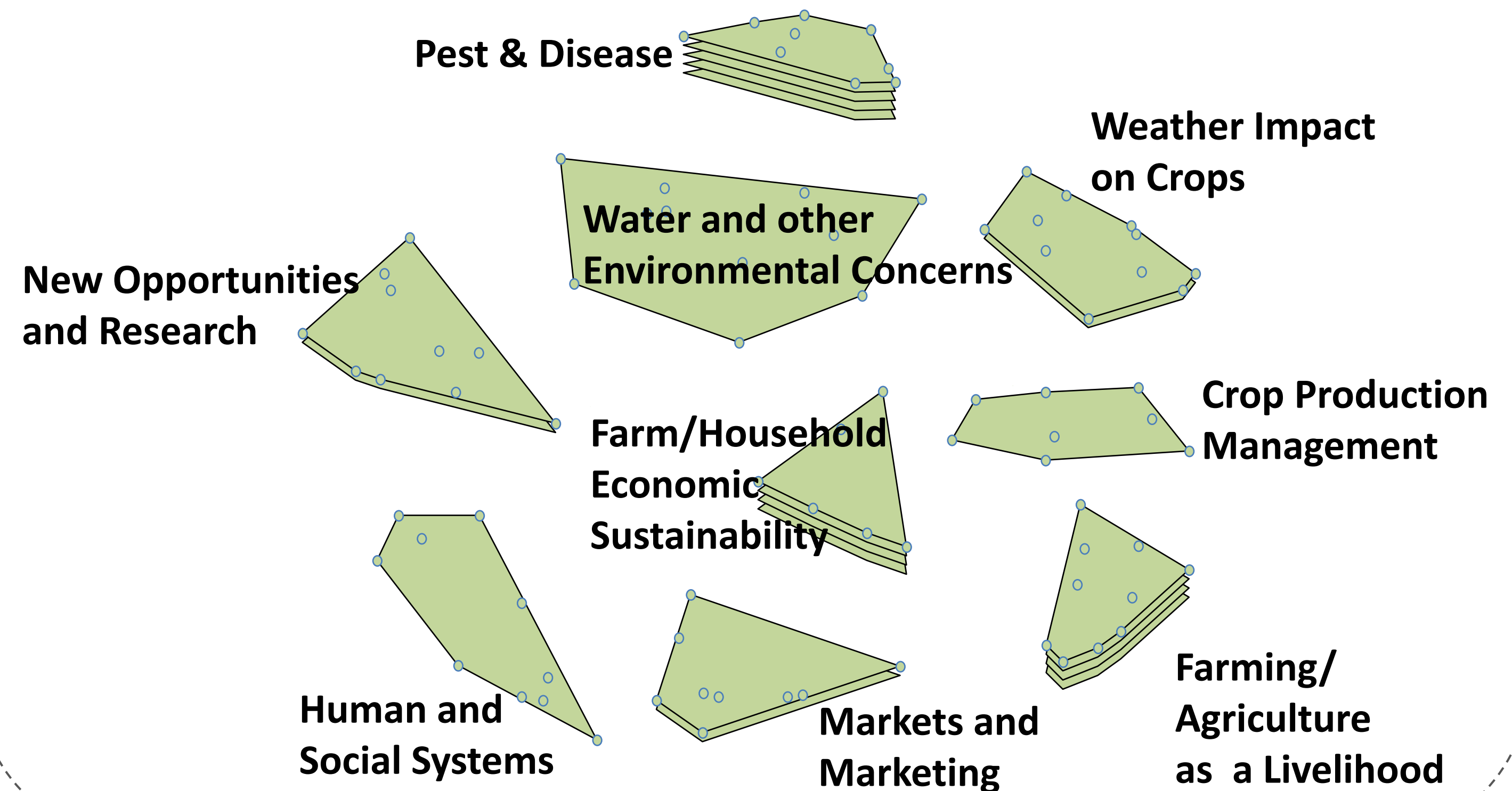
- Twenty-five participants at a meeting in Toledo (growers, researchers, industry representatives) brainstormed concerns for climate change impact on specialty crop agriculture in the Midwest. 85 statements/concerns were collected overall.
- Participants *grouped* the statements by conceptual similarity and also *ranked* the importance of each statement.
- Each participant asked their grower contacts to also complete the grouping and ranking activities.

Results and Discussion

- Grouping data from only the grower participants (N = 19) were used to generate a point map through multi-dimensional scaling.
- Each point on the map represents a unique statement/concern.
- Statements close together were more likely to have been grouped together by participants.
- Hierarchical cluster analysis of point map produced the below polygons.
- Polygons represent conceptual groupings of the 85 statements.
- The clusters with higher ranked statements are depicted with more layers.



Concept Map from Grower Data: N = 19



Conclusions

Growers' greatest concerns from climate change addressed changes in pest pressures, farm economic stability, and agriculture as a livelihood.

Acknowledgements

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Recommendations

- Conduct a random-sample survey of specialty crop producers across the Midwest to gain better understanding of research needs.
- Build university and industry partnerships to improve Midwest production systems' resilience.
- Use the identified priorities to develop a Midwest region-wide plan of work to guide programming.