



Middle Cedar Watershed
Management Authority

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CEDAR RAPIDS, IA

MIDDLE CEDAR WATERSHED: FORESIGHT AND PARTNER COORDINATION WORKSHOP

March 12, 2018

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This report summarizes the foresight and partner coordination session held in Cedar Rapids, Iowa, on March 12, 2018. Approximately 40 local and regional stakeholders, participated in the workshop. They represented a cross section of industry and institutional representatives, all who shared an interest in the future of the Middle Cedar Watershed.

REPORT PREPARED BY:



WORKSHOP HOSTED BY:



**Middle Cedar Watershed
Management Authority**

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1.0 INTRODUCTION

Future of Midwest Agriculture Project

The University of Minnesota has a deep interest in the challenges facing Midwest Agricultural industries and landscape management issues. As part of this interest, the University convened a Think Tank workshop during 15 and 16 June, 2017. This Think Tank explored the broader topic of the Future of Midwest Agriculture. Key features of the workshop included:

- Gathered approximately 100 key stakeholders from across the Midwest, and across a range of disciplines.
- Explored future scenarios for the Midwest Agriculture landscape out as far as 2040.
- The workshop examined scenario implication on the key dimensions of:
 - Food Production Systems
 - Environmental and Landscape
 - Community and Societal

The full report on this workshop is available at <http://future-iq.com/project/u-s-midwest-agriculture-scenarios-future-2016-17/>

Middle Cedar Watershed Workshop

Subsequent to the Think Tank scenario based workshop, it was felt important to validate the outcomes in a watershed or sub-regional context. The Middle Cedar watershed area collaborated in hosting a workshop on 12 March 2018, to deepen the scenario implications locally, and explore more collaborative approaches to the Middle Cedar watershed management. This workshop drew together a cross section of organizations and stakeholders.

The purpose of the workshop was to:

- Introduce the range of watershed management initiatives underway and being developed in the Middle Cedar Watershed.
- Review the Future of Midwest Agriculture scenario outcomes, and explore local implications at a local level.
- Explore and prioritize possible local strategic actions that could progress the work within the Middle Cedar Watershed, and build stronger integration and collaborations.



1.1 MIDDLE CEDAR WATERSHED - WORKSHOP ATTENDEES

The following stakeholder representatives attended the Middle Cedar workshop:

Names	Affiliation
Fred Abels	Black Hawk Creek/Middle Cedar
Marty Adkins	USDA-NRCS
Tariq Baloch	City of Cedar Rapids
Les Beck	Linn Coop Oil Co.
Matt Becker	Linn Coop Oil Co.
Sherry Biggart	Cargill
Gregory Bohrer	Environmental Initiative
Pat Conrad	EOR/Middle Cedar WMA
Emery Davis	Pheasants Forever
Mark Deutschman	Houston Engineering, Inc.
Mario Fenu	HEI
Jonathan Geurts	Keystone Policy Center
Ben Gleason	Iowa Corn
Jason Gomes	Middle Cedar Partnership
Jack Gregersen	Cedar Falls Dry Run Creek Advisory Board
Steve Hershner	City of Cedar Rapids
Pat Higby	Sierra Club - Master River Steward
Jim Jordahl	IAWA
George Kadrmas	Monsanto
Andy Knepp	Monsanto
Liane Kroemer	Ingredion Incorporated
Mike Kuntz	City of Cedar Rapids
Nick Longbucco	TNC
Sean McMahon	IAWA
Will Myers	Iowa Dept of Ag.
Derric Pennington	WWF
Brian Perry	Land O'Lakes SUSTAIN
Phillip Platz	City of Cedar Rapids
Clark Porter	Black Hawk Creek Water + Fowl Coalition
Sandy Pumphrey	City of Cedar Rapids
Shawn Richmond	AAI
Marybeth Stevenson	Iowa DNR
Denise Strohbehn	Cargill
Jessica Turba	IA HSEM
Shelby Williams	Benton/Tama Project
Ron Woeste	Linn Coop Oil Co.
Len Youngblut	Len Youngblut Farms



2.0 FUTURE OF MIDWEST AGRICULTURE - SCENARIO MATRIX

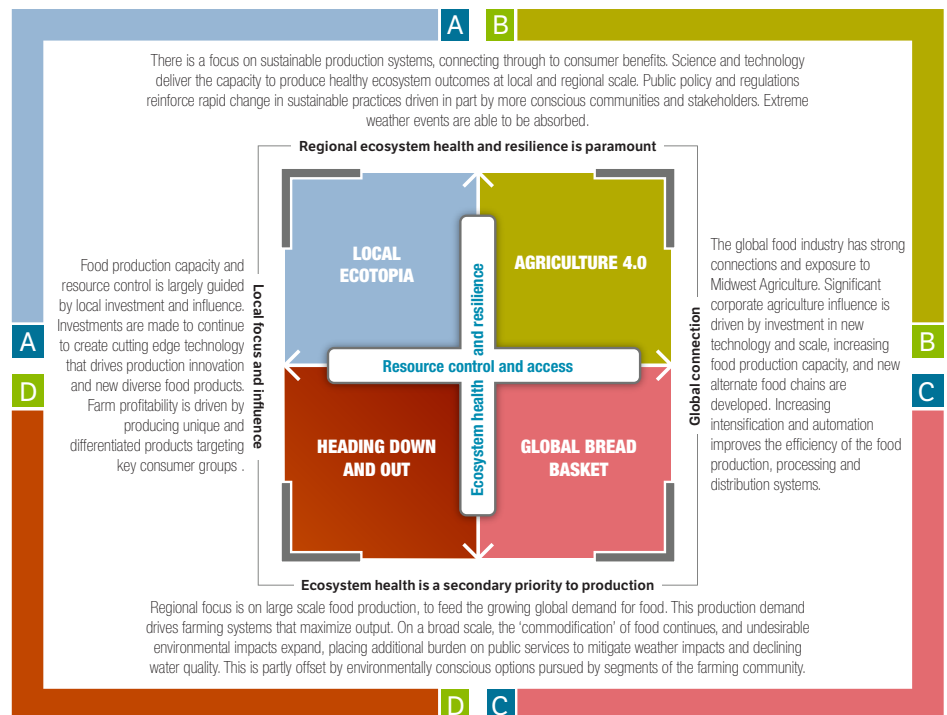
The Future of Midwest Agriculture scenario matrix was developed at the June 2017 Think Tank workshop. Through a facilitated process, data was presented on key future trends and emergent issues. The data was discussed at small group level and then whole group level. The discussions examined the trend information, and explored 'what does this mean for the future of Midwest Agriculture?'

Presentation material was drawn from various studies and included topics such as:

- Demographics, population and urbanization
- Food security and human health
- Macro-economics and shifting power
- Technology driving change
- Energy, food, water & extreme weather patterns
- Consumers of the future

Workshop participants explored key drivers shaping the future, and constructed the scenario matrix, based on the emergent macro themes. The scenario matrix was defined by two major axes. These were further defined by descriptions of the potential implications and outcomes at the ends of the scenario axis. In this way, each axis represents continuums of possible futures. The scenarios, as described by the workshop participants define an approximate mid-point in their allocated scenario space.

More information can be found in the full report. <http://future-iq.com/project/u-s-midwest-agriculture-scenarios-future-2016-17/>





3.0 MIDDLE CEDAR WATERSHED - SCENARIO ANALYSIS

These four scenarios developed at the Future of Midwest Agriculture Think Tank paint very different plausible futures. The Think Tank participants considered them all as largely plausible futures, as in, they could actually happen. Narratives and descriptions of each scenario, as developed by the workshop participants, are included in the full report. Each scenario has its subsequent consequences and impacts on the future of Midwest Agriculture. No one future is the 'perfect' future, as each comes with its attendant challenges and implications. The process, however, does provide a way to tease out the future scenarios and examine them from a speculative standpoint. They represent different possibilities for the future, and are not predictions.

The Middle Cedar Workshop took these scenarios, and their detailed descriptions, as a starting point, and then explored potential local implications. The Middle Cedar workshop looked at local implications out to 2025, to gain an insight into the medium term implications. They explored the implications at the level of:

- Food Production Systems
- Environmental and Landscape
- Community and Societal

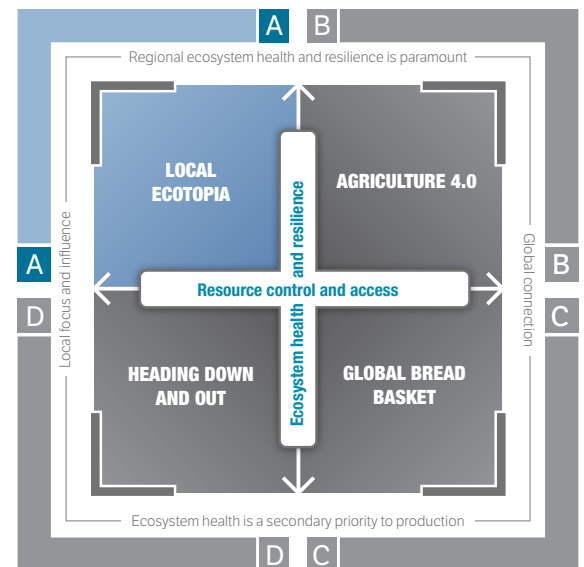




3.1 SCENARIO 'LOCAL ECOTOPIA' – LOCAL IMPLICATIONS

BROAD MIDWEST SCENARIO DESCRIPTION

The scenario presented in this quadrant is defined by resilient regional ecosystem health and a strong focus on local resource control and influence. This future scenario is characterized by diverse crops, healthy soil, and integration of livestock. Food is not only grown regionally, but it is also processed regionally in closed loop systems with zero environmental impact. Consumers lead this trend by demanding full transparency from seed to final product destination – powered by precision technology. Public private partnerships will be structured in ways that encourage and allow co-op models to thrive in all sectors of the agricultural landscape. Farm transfers will increase and farmer average ages will decline. More money will be spent on education and research and a strong focus will be placed on equity and civic engagement.



MIDDLE CEDAR WATERSHED IMPLICATIONS

Food Production Systems - Local Characteristics 2025

- More Winter plants (roots) on the land
- Diversity of farms – crops
- Niche markets
- Land owner engagement
- More ruminants
- More local employment

Environmental and Landscape - Local Characteristics 2025

- Improved water quality
- Soil health
- Outdoor recreation opportunities
- Less flooding
- Diverse wild life & fish

Community and Societal - Local Characteristics 2025

- Urban people taking interest in the land
- More education of food production even in rural areas
- Educate consumers and landowners on sustainability
- More community gardens & green houses
- Leach beds on parking lots

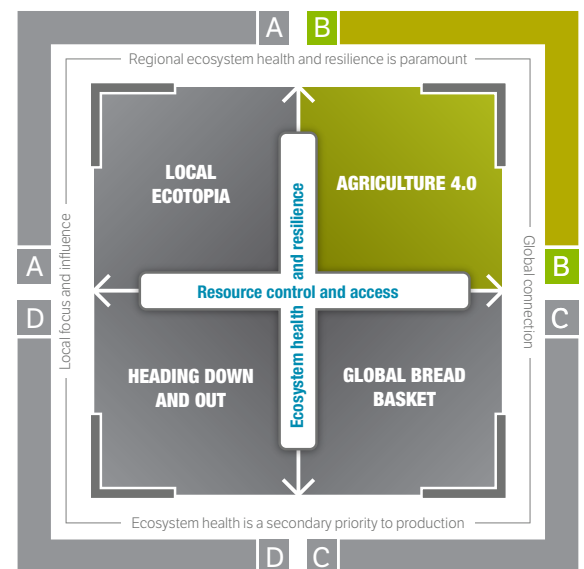


3.2 SCENARIO 'AGRICULTURE 4.0' – LOCAL IMPLICATIONS

BROAD MIDWEST SCENARIO DESCRIPTION

The scenario presented in this quadrant is defined by global focus, connectivity and resilient ecosystem health. Corporate responsibility is a foundational block of this scenario which envisions a dual tracked system: local products for regional consumption and global structure for the global marketplace. Consumers locally will demand natural designer foods with a high level of customization, while global markets will provide to local farmers and food producers a stable and established demand. Precision farming will allow for a more intelligent and sustainable production system, which will be led by medium and large sized corporations. Corporations – by consumer demand and changes in the farm bill and other regulations – will be incentivized to be environmentally conscious and reduce food and water waste.

Ecosystem health will be a strong focus, with cover crops eventually defining the landscape. Healthier consumers will drive down the demand for meat down and growth of protein rich alternative crops will increase. Rural communities will count on vigorous watersheds and will be on the receiving end of strong workforce development efforts by public-private partnerships. Healthy and employed communities will result.



MIDDLE CEDAR WATERSHED IMPLICATIONS

Food Production Systems - Local Characteristics 2025

- Vertical Integration – product sourcing from grower to consumer
- Company certifies product or regulations from government
- Food Safety issues increase
- Complex change would be needed
- R&D, inputs, research
- Gunsmoke farms – General Mills + Midwest Bio Ag - organic wheat

Environmental and Landscape - Local Characteristics 2025

- Continuous cover crops + other environmental interventions
- Will public demand “green” & pay for it?

Community and Societal - Local Characteristics 2025

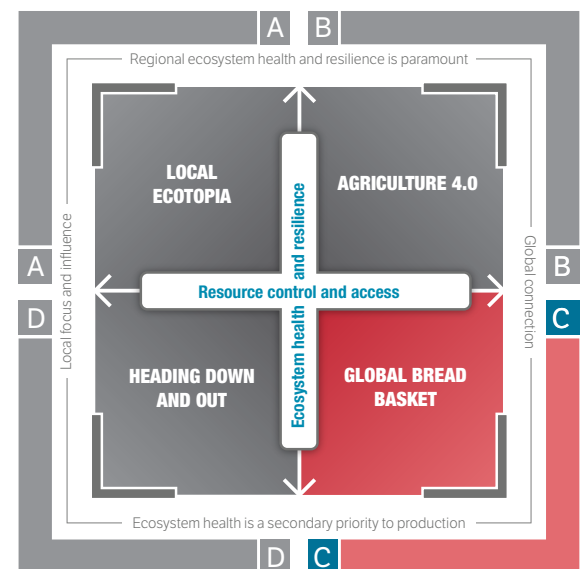
- Farmers could have a growing contract – opportunity
- But farmers could have little or no control or connection to consumers
- Need – an educated, informed public through the whole supply chain
- Scenario would require political support at global level – not allowing one country or company to undersell others



3.3 SCENARIO ‘GLOBAL BREAD BASKET’ – LOCAL IMPLICATIONS

BROAD MIDWEST SCENARIO DESCRIPTION

The scenario presented in this quadrant is defined by a focus on global demand coupled with a strong focus on production. Industry will see a shift toward calorie and protein rich foods and away from fresh foods. Global base consumer demand will translate into highly processed and automated production and distribution. Corporate ownership of farms will lead to large operations being controlled by corporations and disappearance of food industry family farms. Farm corporate ownership will also lead to investment in soil health to sustain production, but there will be a notable divergent split in terms of farm sizes – very small farms coupled with very large ones. Global prosperity will mean demand in animal agriculture. There will be a notable increase in private sponsorship of research as well as private ownership of information. Corporations will eventually feel pressure in the environmental landscape area which will lead to increased transparency in the system. Regional centers will thrive with available jobs and education opportunities. Small rural communities will become obsolete and will start to disappear.



MIDDLE CEDAR WATERSHED IMPLICATIONS

Food Production Systems - Local Characteristics 2025

- More automated and consolidated farms
- Larger and more widespread CAFOs
- Value of water captured in commodity prices

Environmental and Landscape - Local Characteristics 2025

- Biofuel innovation / animal waste
- Economics drive integration of cash cover crop – seed / varieties owned by corporate
- Soil health linked to land value; create new soil asset classes

Community and Societal - Local Characteristics 2025

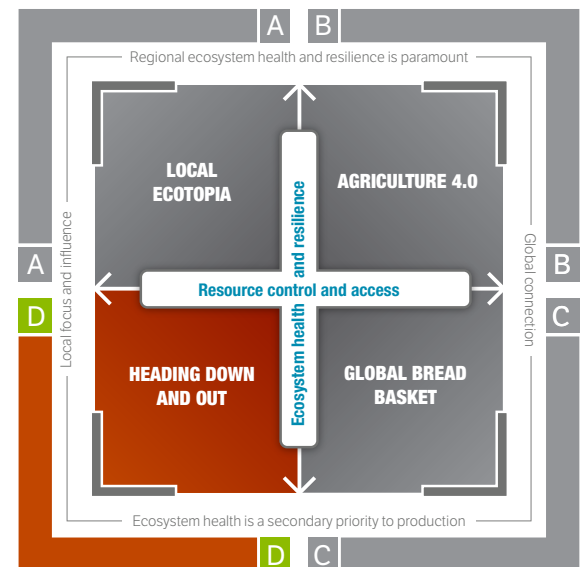
- Continued loss of population in rural communities
- Rural areas more “wired”
- More urban / vertical farming
- More foreign ownership / influence of supply chain
- Supply chain requirements barriers to market influence farm management



3.4 SCENARIO ‘HEADING DOWN AND OUT’ – LOCAL IMPLICATIONS

BROAD MIDWEST SCENARIO DESCRIPTION

The scenario presented in this quadrant is defined by a focus on local control and influence coupled with a strong focus on production. This scenario increases the relevance and size of regional food processing centers, which will grow and eventually become the sole hub of jobs in rural communities. Smaller rural towns will disappear or become bedroom communities for nearby regional centers. Regional centers will face labor, housing, and infrastructure shortages. The relevance of these centers will serve as a push for better infrastructure surrounding them and universities will retool their programs to meet the labor shortages. Corporations will feel pressure from local consumers that demand a more transparent process and environmental protection. Environmental protection response will be a “one step forward, two steps backward” as corporations work to meet the production needs of this scenario. Global demand will be mass driven and many producers will choose to bypass local demands by targeting global markets. Water quality, quantity, and soil quality will decrease. Dead zones downstream will increase with a decrease in aquatic ecosystems. Use of technology will exponentially increase and food grade will also be increased. Small niche urban farms will grow to meet specialized local consumer demand. Self-regulatory bodies will become more prevalent, and farm certification programs will grow.



MIDDLE CEDAR WATERSHED IMPLICATIONS

Food Production Systems - Local Characteristics 2025

- Larger farms / concentrated production
- Growth in national markets / reduction in international
- Processing facilities in CR continue to expand
- Continued primacy of “rent seeking”
 - Absentee landlords
 - Monopoly pricing of inputs

- Increase in specialty farms (livestock and crop)
- Improve soil health becoming a long-term approach

Environmental and Landscape - Local Characteristics 2025

- “Divorce” from the landscape
- Less habitat
- Source water degradation
- Continued flooding (riverine + flash)

Community and Societal - Local Characteristics 2025

- Smaller communities are less viable
- Larger metro “footprint” / balanced by higher density urban cores
- Higher demand for mental health / social services in metro areas
- Higher cost for source water treatment



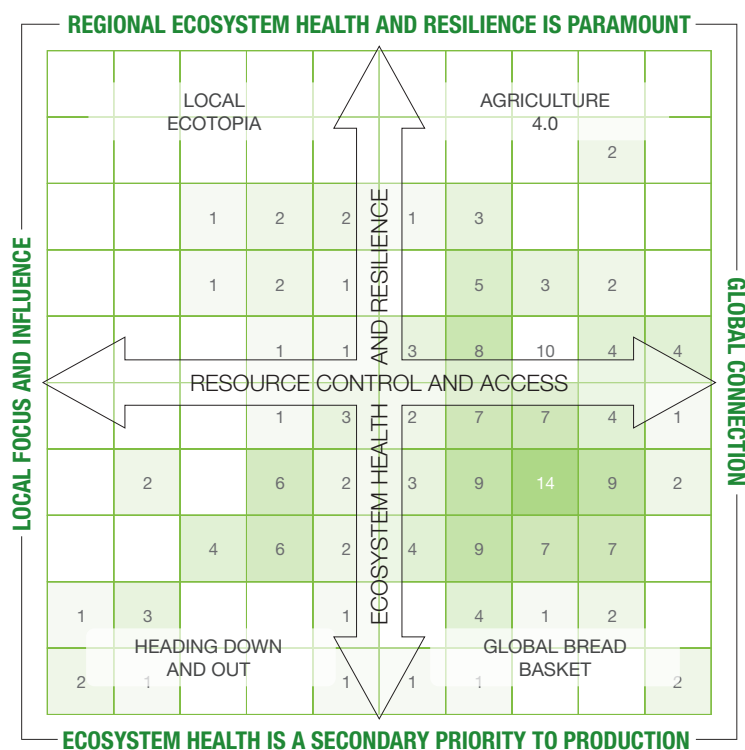
4.0 EXPECTED AND PREFERRED FUTURES – MIDDLE CEDAR WATERSHED

Following the exploration of the local implications of each of the macro Midwest scenarios, participants were asked to consider their view of the 'Expected Future' and their 'Preferred Future', in relation to the Middle Cedar Watershed. Participants individually assessed the plausibility of the scenarios across a 100-cell matrix. This information was collated to produce 'plausibility heat maps', providing insight into what was considered the most likely scenario version to eventuate, if nothing changes, and which scenario is preferred. For both the expected and the preferred scenarios, each participant identified the cell representing the most plausible future in their view (given a weighting of 2); then the next most 4 plausible cells (given a weighting of 1). These results were aggregated across all workshop participants to produce a single number for each cell.

4.1 EXPECTED FUTURE

FUTURE OF MIDDLE CEDAR WATERSHED

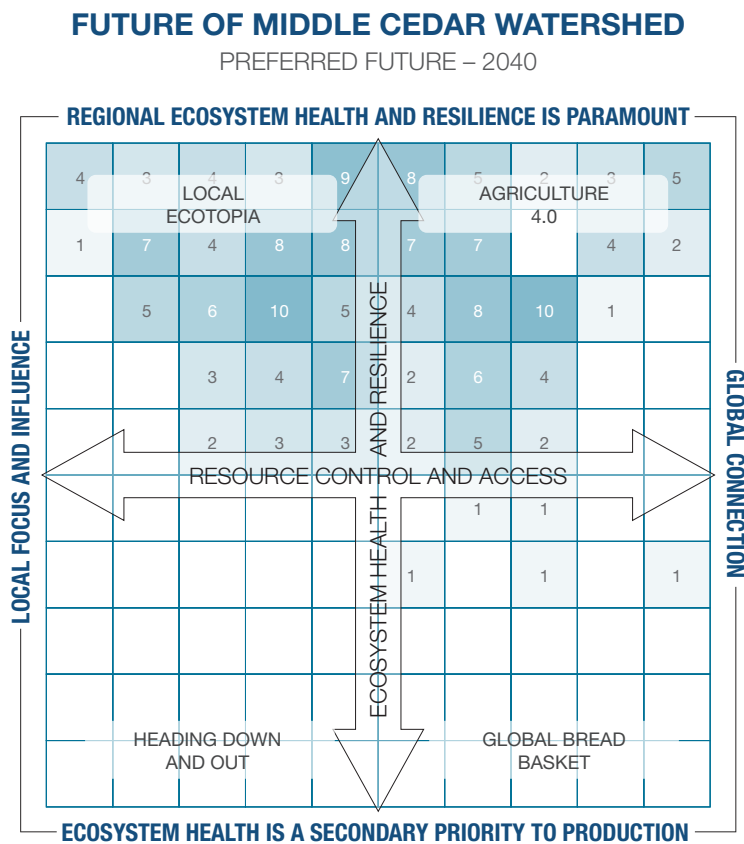
EXPECTED FUTURE – 2040



Expected Future is defined as the future that will likely eventuate, if nothing changes in what we are doing. It represents the future defined by our current trajectory.



4.2 PREFERRED FUTURE



Preferred Future is defined at the future that represents the optimal outcome.

PLAUSIBILITY MATRIX

This grid displays the plausibility level assigned by the workshop participants. The darker the color, the greater the aggregate weighted plausibility score.

The Expected and Preferred Future 'heat maps' closely mirror the outcomes from the Future of Midwest Agriculture Think Tank participants. This provides an important validation to the scenario framework and the 'views of the future' it reflects. In both bases, there is a significant difference between the Expected and Preferred Futures, highlighting the need for coordinated and bold action. Especially important is the shift on the vertical axis, to ensure that ecosystem health and resilience is addressed.



5.0 STRATEGIC PRIORITIES

5.1 STRATEGIC PRIORITY DEVELOPMENT

With the Preferred Future scenario as a backdrop, workshop participants were asked to collectively develop strategic priorities. These strategic priorities are what needs to be addressed as it moves from its “Expected Future” (one that would eventuate if no change happens) to the “Preferred Future.” Through a facilitated process in small groups, participants developed strategic priorities and each group reported its top priority. Once all groups had a chance to report, the participants as a whole discussed the need to add / merge some priorities.

The seven Strategic Priorities developed by the participants were:

1. Land Owner Engagement
2. Market channels for additional products
3. Land valuation linked to soil health
4. Connect sustainability to consumer demand
5. Innovation in watershed planning
6. Technical assistance to deliver conservation
7. Public / Private Partnerships

These priority areas specifically related to the target area, the Middle Cedar Watershed.



5.2 STRATEGIC PRIORITIES – IDEAS FOR ACTION

Participants self-selected into groups that would discuss big ideas relating to each of the seven strategic priorities. The ideas for action developed by the groups are outlined below, and recorded as summary bullet points.

5.2.1 LAND OWNER ENGAGEMENT

- Land owner / tenant meeting sessions
 - Outreach via Mailings and Technology (forums / Twitter / Facebook)
 - Include in contract language
 - Promote the value – education about cover crops and \$ benefits
 - Explore financial paybacks for soil health
 - Teach farmers that change can be valuable
- Goals:
 - Develop partnership to gather and distribute funding and knowledge (to include: extension, ag retailers, non-profits, outreach affiliates)
 - Gather market data to support concept

5.2.2 MARKET CHANNELS FOR ADDITIONAL PRODUCTS

- Pilot Project – Proof of Concept:
 - Could state land be a site for a pilot land project?
 - Field days to present opportunities for participation
 - From production to end uses for product
 - Farm level: producing cash cover crops and other options
 - Trucking and Storage: important infrastructure
 - Processor: critical role: providing a market
 - State working lands initiative: collaboration?
- By July 10, convene a planning group for a cash cover crop pilot project.
- For the watershed initiative farmer(s) supply chain + marketers
 - Possible pilot project on DNR property ?
 - Watershed cooperative covering some costs
 - Corporate advisory panel



5.2.3 LAND VALUATION LINKED TO SOIL HEALTH

- Gather background information to help support concept
- Need soil health metric to complement Corn Suitability Rating (CSR2), and to measure differences resulting from management practices"
- Add components to land valuation formula reflecting inputs / actions that support soil health or practice installation
- Reduce proposed property tax rate increases for acres that are under active soil health programs
- Producers without soil health practices would pay full increase
- Water quantity / infiltration might be another factor for future land valuation calculation

5.2.4 CONNECT SUSTAINABILITY TO CONSUMER DEMAND

- Documentation, verification of conservation practices to enable differentiation of product
- Differentiation in marketing of products to consumer regarding sustainability
- Education of consumers on environmental outcomes behind a label
- Find an appealing label (eg: regenerative) to compete with "organic"
- Make the connection for consumers between big brands and their investment in resource improvement
- Add a value-added tax to products based on the externalities of soil conservation long term
- Pay farmers for the data needed for brands to substantiate their sustainability claims

5.2.5 INNOVATION IN WATERSHED PLANNING

- Technology facilitates faster, cheaper more effective watershed plans to target practices where they can be most effective
- Watershed coordinators
- Create blueprint for success



5.2.6 TECHNICAL ASSISTANCE TO DELIVER CONSERVATION

- Increase TA to Farmers to reduce the risk of changes in farming operations & realize the agronomic benefit) * Idea: Train and educate the ad service providers (CCA, Ag service providers), others) to provide technical assistance and advice on practices to farmers
- Start to engage farmers with agricultural CCAs
- Use CCAs continuing education units to educate ad service providers
- Increase access to farm data analysis interpretation
- TA Delivery to farmer that focus on farmer ROI and sustainability (Ag fiduciary) pilot program or grant
- Encourage more participation of farmer / ag service providers / farm management at peer-to-peer learning events/ Soil health partnership, field days, etc.
- Provide sales training to conservation Technical Advisory staff

5.2.7 PUBLIC / PRIVATE PARTNERSHIPS

- Corporate interests, WMA, local provider -> how to connect and plug into one another's activities
- Corporate advisory council
- Conservation clearinghouse – dating service for conservation. How to match potential donors with specific projects? We need a framework to build those connections with understanding of the measurable environmental benefits.
- Formalized structure for incentivizing ag retail sector (LLAs, Coops, etc.) for promoting conservation activities Examples: NRCs now with EnviroMark, MLW / IAWA donation for TA, Hartland Co-op, Ag Clean Water Alliance.

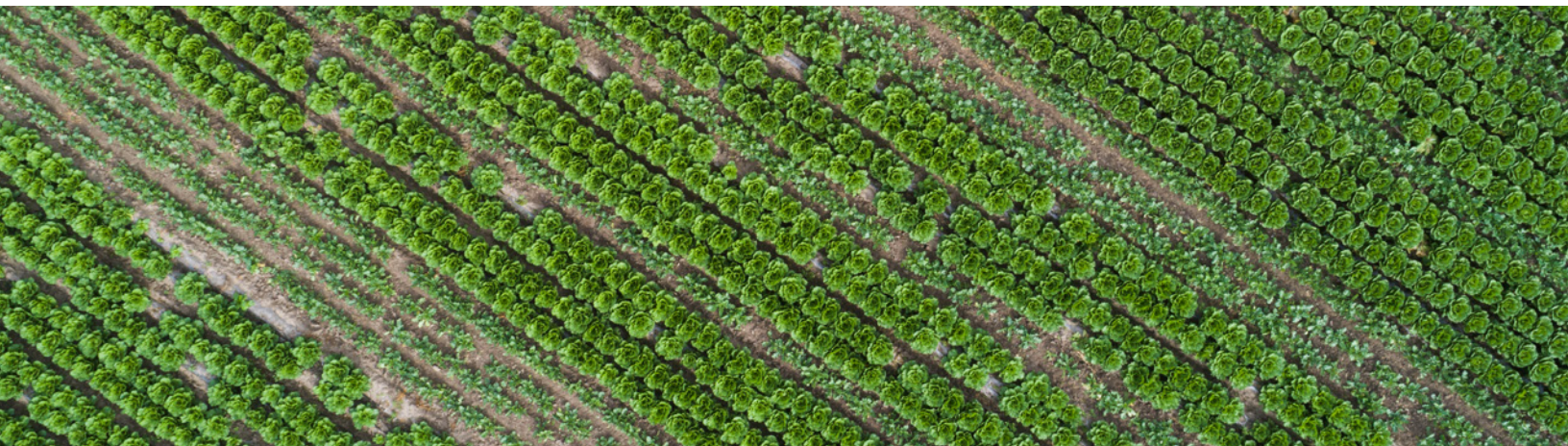


5.3 STRATEGIC PRIORITIES - PRIORITIZATION

Once the strategic priorities big ideas had been shared with the workshop, participants were asked to prioritize each strategic priority over the next five years. This exercise aimed at understanding what participants viewed as the sequence of immediate priorities for it to move towards its Preferred Future. They were able to allocate a certain number of votes per year, and allocate them between strategy areas and years, to reflect priorities and sequence.

Priorities for Action – by Strategy Area and Year

Strategy Area	2018	2019	2020	2021	2022
Land Owner Engagement	13	15	9	8	4
Technical assistance to deliver conservation	13	11	10	10	6
Public / Private Partnerships	11	10	10	8	11
Innovation in watershed planning	9	7	3	5	5
Market channels for additional products	8	7	7	6	7
Land valuation linked to soil health	6	14	7	10	8
Connect sustainability to consumer demand	6	5	7	6	7





6.0 CONCLUSION AND MORE INFORMATION

The Middle Cedar watershed provides a nationally-unique opportunity to explore and implement collaborative solutions to challenges facing Midwest agriculture. The watershed has a significant record of accomplishment already in developing these collaborative solutions, and there is potential to achieve much more, given the range of efforts underway. These efforts range for those of individual farmers, to sub-watershed and watershed-scale work, to collaboration among leading national food and agriculture firms.

This scenario planning workshop was convened by the University of Minnesota. The University is collaborating with many partners to develop new crops that can help provide additional economic and conservation options for Midwest farmers. Workshop participants included stakeholders from the private, public, academic and non-profit sectors. The local scenario implications were developed by the participants, and strategic action ideas were a result of the group deliberations. Results from the workshop will support further efforts, over the coming months, to explore innovative and collaborative solutions for Midwest agriculture, building upon efforts underway in the Middle Cedar.

For more information on this Middle Cedar Watershed Workshop report, and the Future of Midwest Agriculture project please contact:



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Reports on Future of Midwest Agriculture Scenarios can be accessed at <http://future-iq.com/project/u-s-midwest-agriculture-scenarios-future-2016-17/>

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