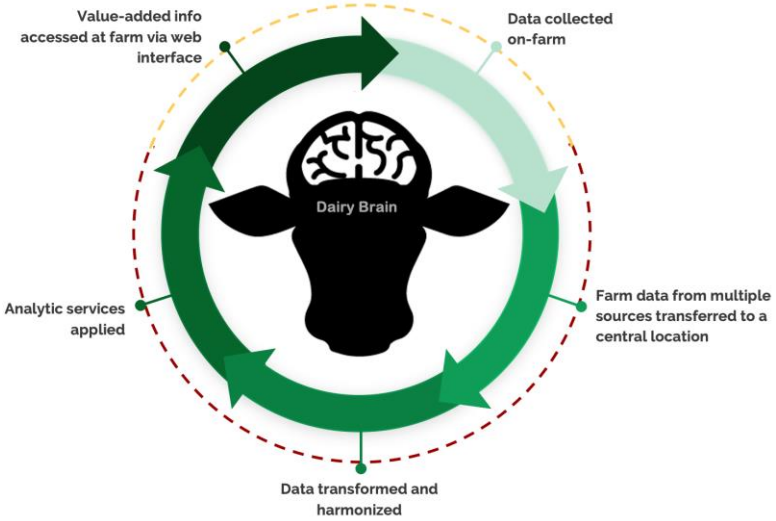
Challenges and possible solutions for data integration and use on dairy farms



DairyBrain.Wisc.edu

Victor E. Cabrera

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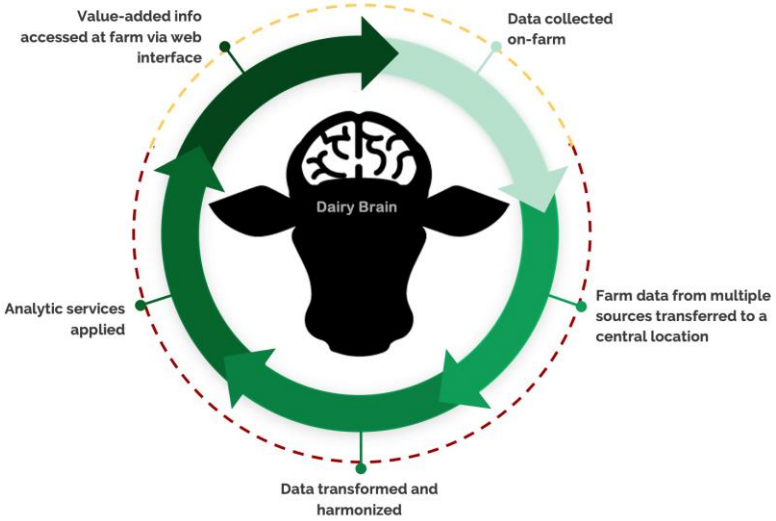

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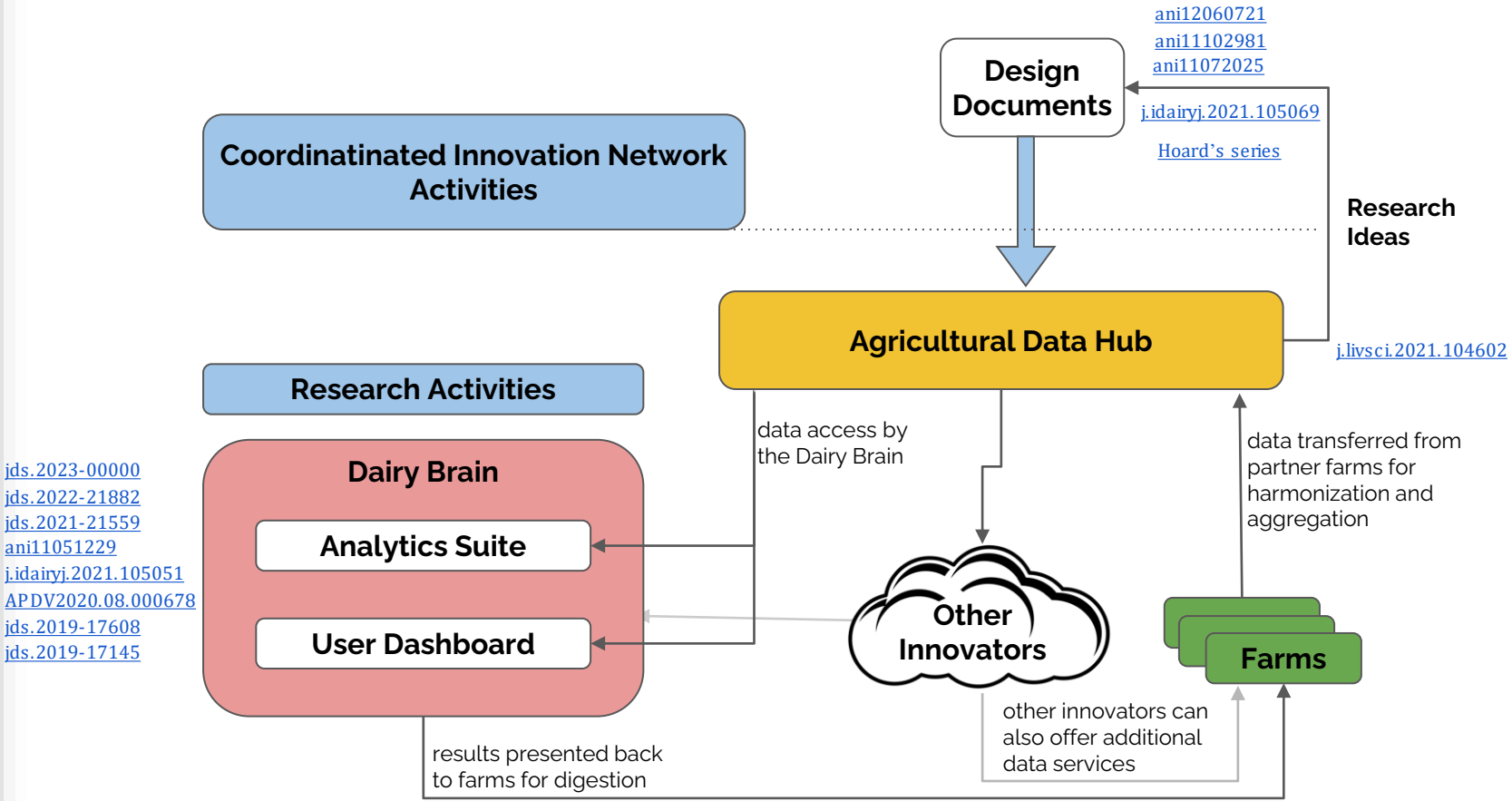
Ecosystem of Exchange of **Dairy Data and Insights**



Data Collection

Challenges

- Diversity of data sources
- Lack of accuracy and consistency (standards)
- Different frequency of data recording and collection
- Data prepared for human consumption

Overcoming Collection

- Automated data collection systems
- IoT devices
- Invest on APIs and cloud systems
- Develop and apply standardized protocols

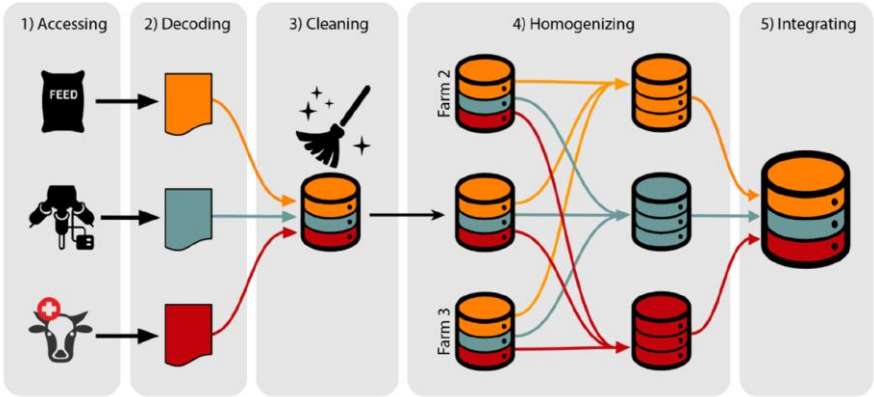
Data Integration

Challenges

- Heterogeneous data formats and systems
- Non transferable scripts
- Data silos within and between farms

Streaming Integration

- Unified data platforms
- ICAR data standards
- Interoperable systems



Data Quality

Challenges

- Incomplete
- Inconsistent
- Erroneous/Noisy
- Repeated

Ensuring Quality

- Validation
- Cleaning
- Governance practices
- Quality control
- Promote standardization

Data Analysis

Challenges

- Big data issues
- Lack of professionals with combined skill sets

Unlocking the Potential

- AI, ML
- Capacity building

Security and Privacy

Challenges

- Ownership
- Data breaches
- Unauthorized access
- Data loss
- Regulatory considerations
- Ethical considerations
- Extreme IP concerns

Safeguarding Data

- Clear data transfer agreements
- Robust data security
- Anonymization
- Sharing agreements
- Foster trust with companies

Decision Support

Challenges

- Translating data into actionable insights
- Bridging the gap between data and farm management
- Adoption dilemma and sustained adoption

Enhancing Decision

- Develop relevant DSS
- Predictive and prescriptive analytics
- Decision maker education

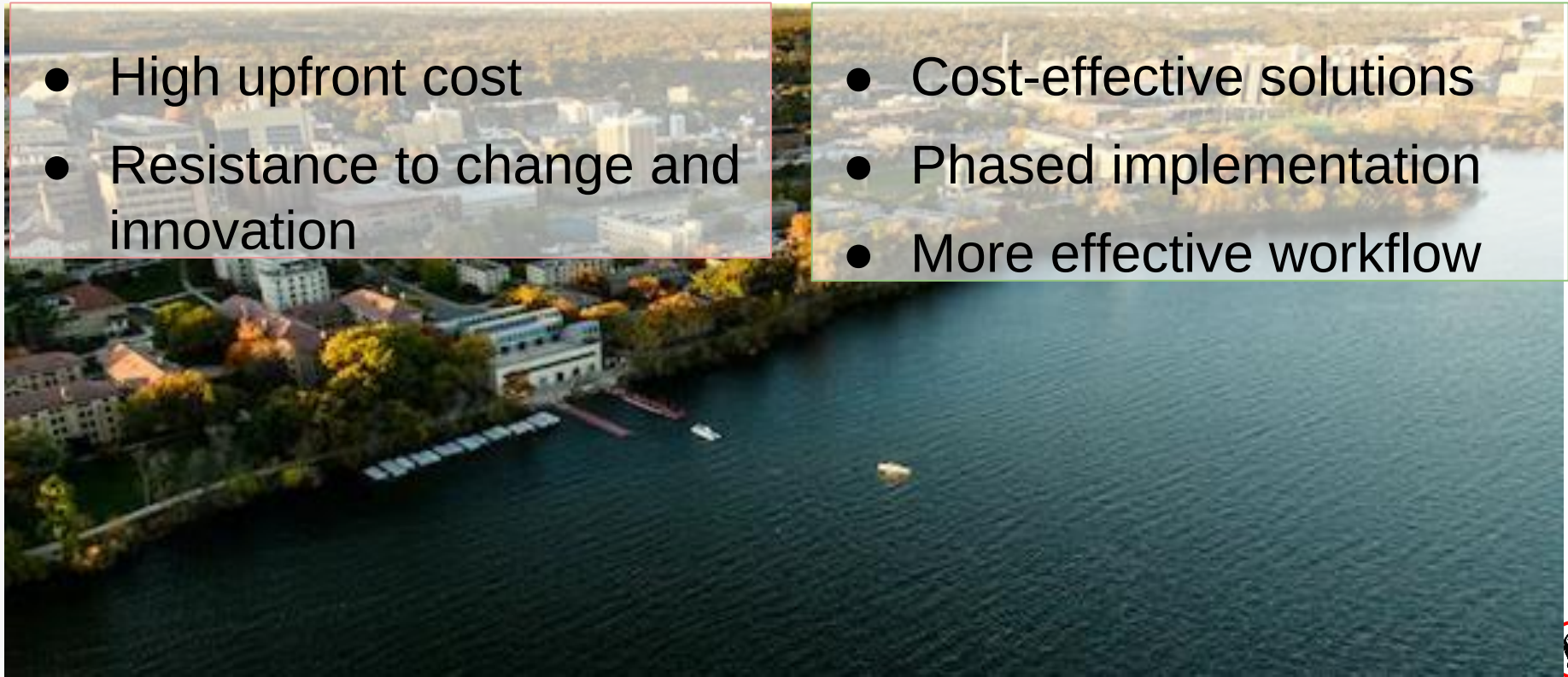
Implementation

Challenges

- High upfront cost
- Resistance to change and innovation

Navigating Roadblocks

- Cost-effective solutions
- Phased implementation
- More effective workflow



Collaboration

Challenges

- Collaboration among farmers, industry, and academia
- Sharing data, knowledge, and best practices
- Difficult to align interests

Fostering partnerships

- Industry partnerships
- Cooperative models
- Open data initiatives
- Create value/incentives

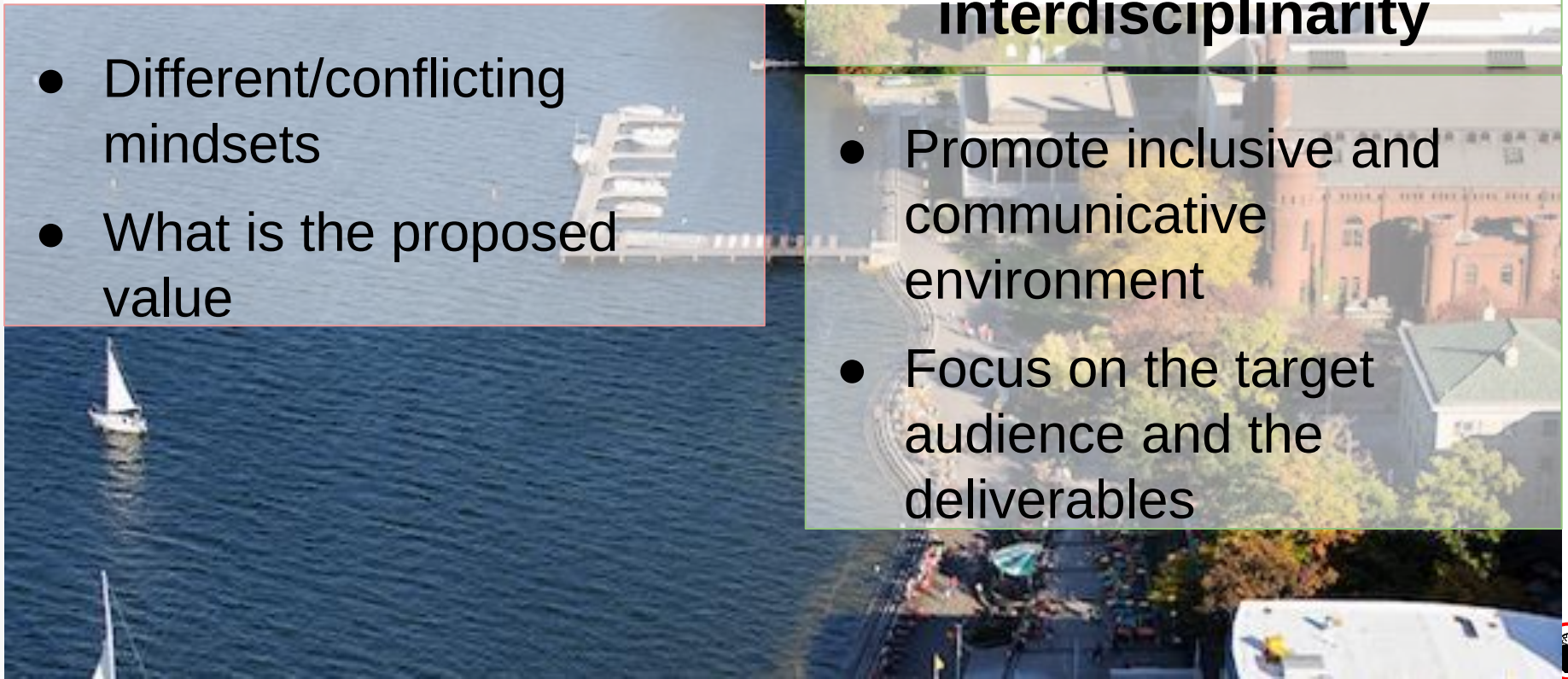
Interdisciplinarity

Challenges

- Different/conflicting mindsets
- What is the proposed value

Nurturing interdisciplinarity

- Promote inclusive and communicative environment
- Focus on the target audience and the deliverables



Sustainability

Challenges

- Expensive development
- Most work under the hood
- Funding uncertainty

Unlocking funding

- Company contracts
- Pay per service fee
- Develop a consortium

The Future of Data Integration on Dairy Farming

- Integrated data plays a critical role in sustainable dairy farming
- It is required to embrace new technologies and practices for data-driven decision making
- It is crucial to continue ongoing research and innovation for improved data integration solutions

TOPICS | PROGRAMS | GRANTS | NEWSROOM | IMPACTS | RESOURCES

HOME › PROGRAMS › FOOD AND AGRICULTURE CYBERINFORMATICS AND TOOLS INITIATIVE

Food and Agriculture Cyberinformatics and Tools Initiative

The Agriculture and Food Research Initiative's Food and Agriculture Cyberinformatics and Tools (FACT) initiative seeks to catalyze activities that harness big data for synthesizing new knowledge, making predictive decisions, and fostering data-supported innovation in agriculture.

Project supported by Agriculture and Food Research Initiative Competitive **Grant No. 2019-68017-29935** (2019-2023) from the USDA National Institute of Food and Agriculture

ADSA Discover Conference on Food Animal Agriculture:

Milking the Data – Value Driven Dairy Farming

May 6-9, 2024
Eaglewood Resort & Spa in Itasca, IL
Hosted by the American Dairy Science Association®

SAVE THE DATE!

Potential Conference Topics

- Data integration across the entire dairy chain
- Adoption of technology
- Disruptive technologies
- Data governance & cybersecurity
- Mining the value of data

For complete conference information go to:
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Victor Cabrera, University of Wisconsin

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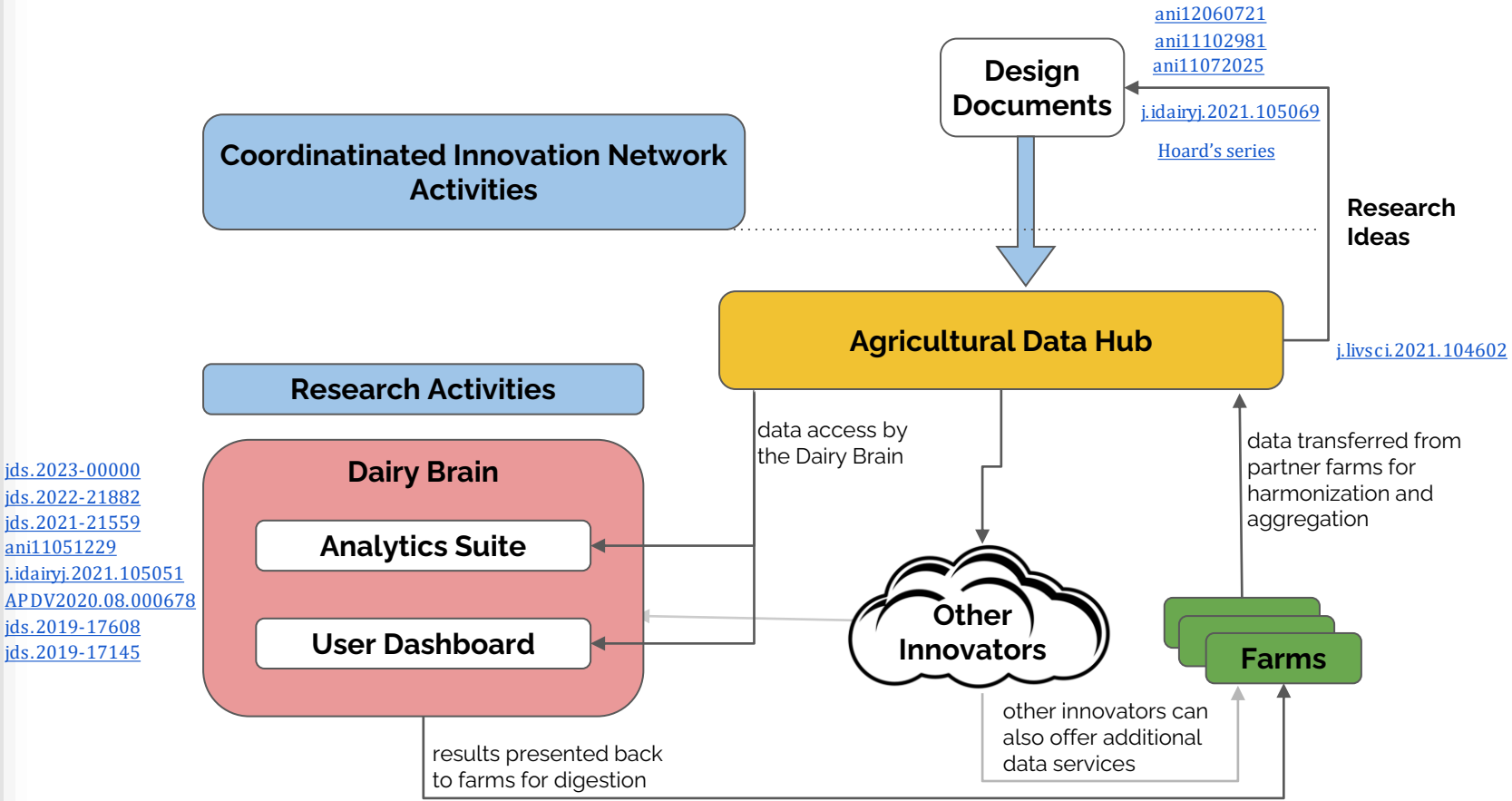

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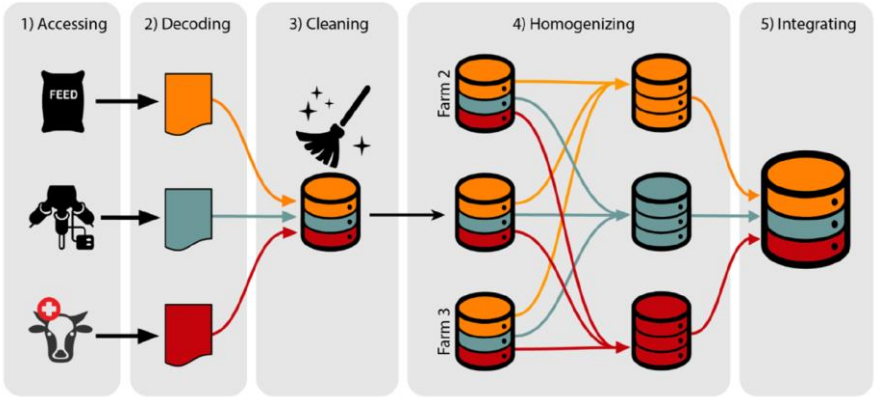

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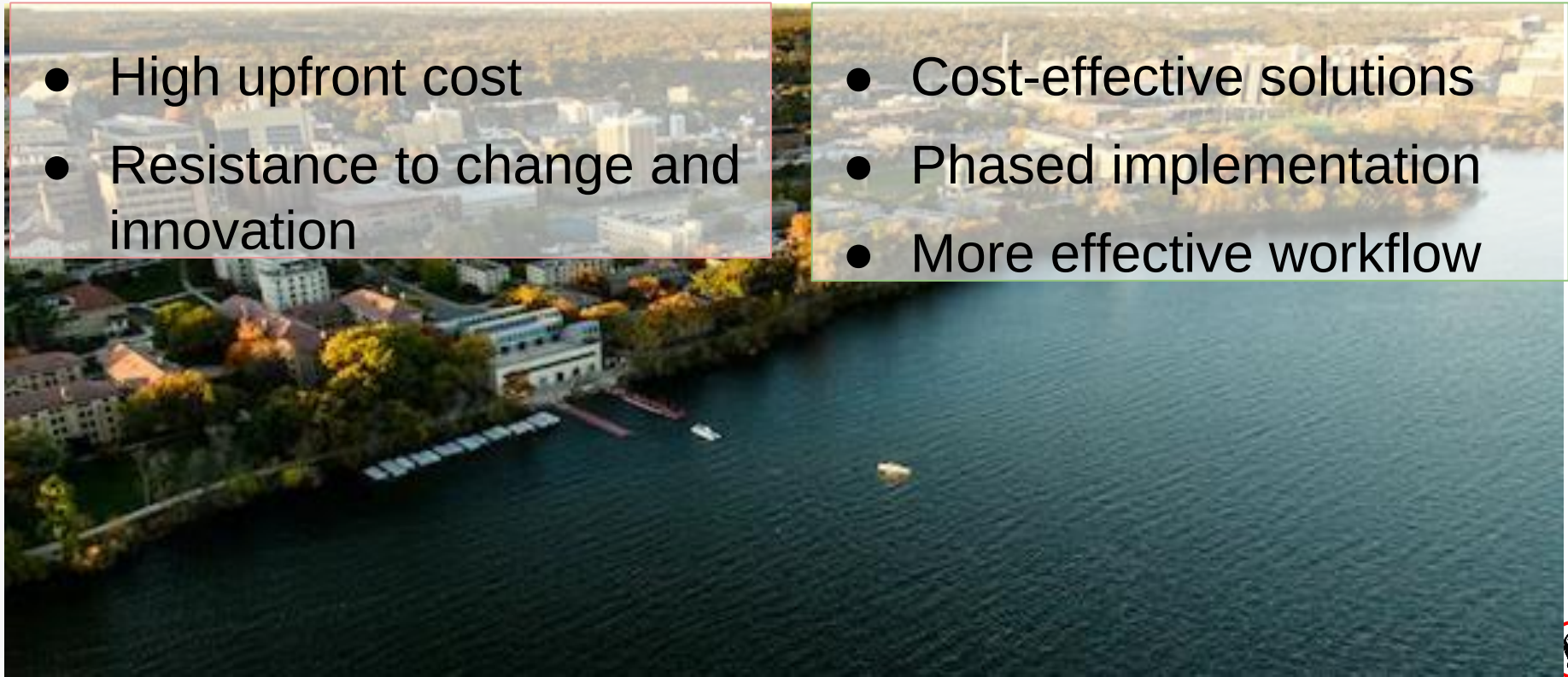

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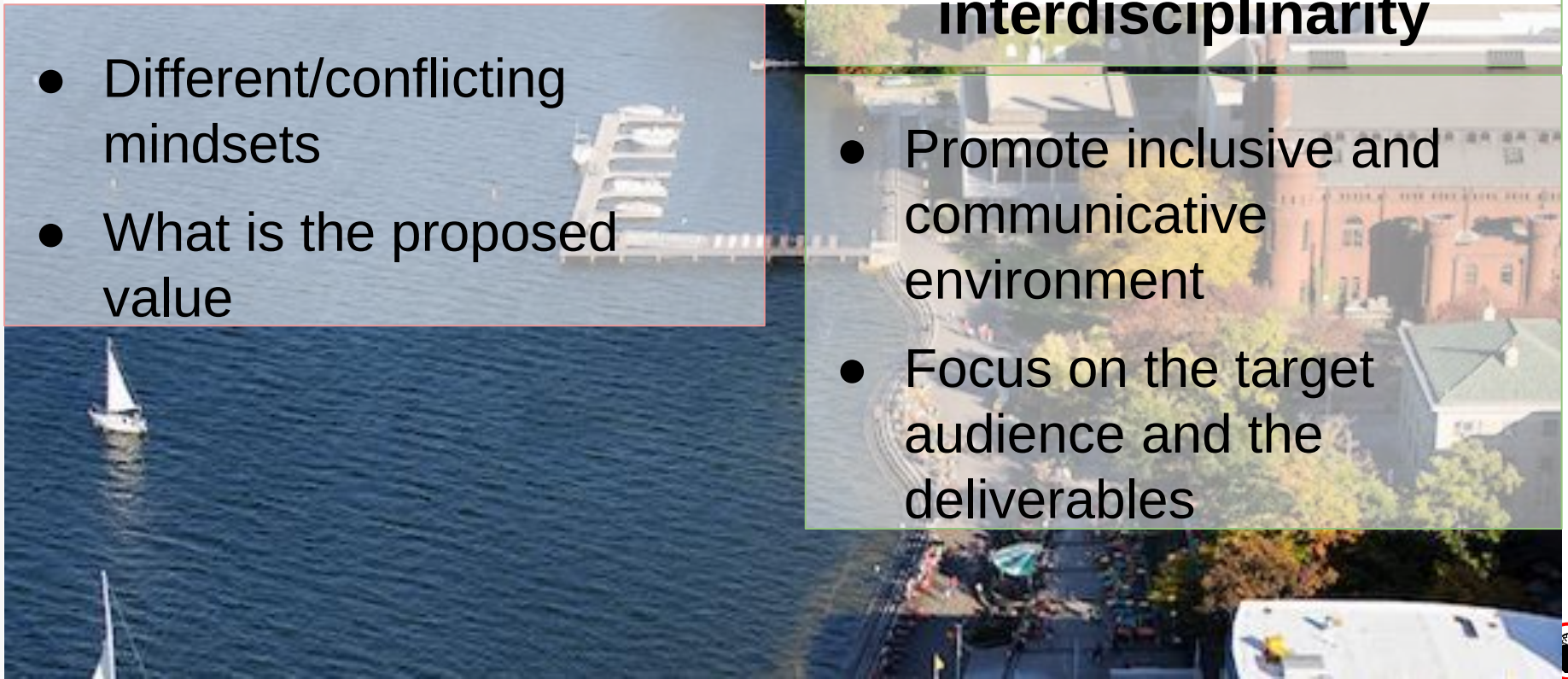

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