Reviewer 1

Overview:

This paper takes a document analysis approach to assess and understand the data needs of agricultural producers in the Corn Belt region of the Midwest U.S. Results aim to inform the development of future decision support tools to aid farmer production decisions. Specifically, results will be used to develop the Dashboard for Agricultural Water use and Nutrient management (DAWN), which will generate climatic forecasts communicated to stakeholders through a decision support tool.

We thank the reviewer for their feedback. Individual comments are addressed below.

Major Comments:

1. Why only focus on the corn belt, would insights on the data and information needs of producers outside of the Corn Belt region not apply at least somewhat to the producers of the region? I suppose I am not convinced that the data needs of Corn Belt producers are so different than the data needs to row crop producers from other regions of the U.S. or other industrialized nations.
    1. *We focused on the Corn Belt for two reasons. First, as stated in the introduction and methods, this study was motivated by the DAWN Project, which seeks to meet agriculturalists' climate information needs in the U.S. Corn Belt specifically. Second, although row crop farming might be similar between regions or between countries, climate data needs are influenced both by the current climate and by the projected changes under climate change. These are unique to each region. We therefore focus this specific study on the unique climate data needs of Corn Belt producers, and we chose to keep the scope within reason and applicable to the project at hand.*
    2. *The reasoning presented in (a) was added to Section 2.1 with the following sentence, "Although agriculturalists in other regions beyond the Corn Belt also face challenges and have data needs in the face of a changing climate, we excluded these documents both because of the scope of the DAWN project and because climatic processes and changes are region-specific."*
2. "Information practitioners need" I find this subsection heading misleading. The text within this section merely overviews the types of data the analyzed documents mention w.r.t. information use. The section does not begin to treat what information corn belt producers need – and it likely shouldn't as this would inherently be a value statement. I suggest revising the title to "Sources of information"
    1. *Section 3.2.1 was renamed to "Sources of information", while section 3.2.2 was renamed to "Data and information types"*
3. "What documents say" "what practitioners say"? Throughout the results and discussion section the paper mentions examples of practitioners saying X (e.g., "Practitioners mentioned both reducing the risk of natural events and making management decisions that are the least risky."). Does practitioners refer to the researchers writing the analyzed documents or the farmers? If practitioners refers to farmers, then a caveat is needed as this paper only reports what researchers write about farmers saying. If this information about farmer preferences, etc is based on survey results, then the paper should be upfront about mentioning that.
    1. *"Practitioners" refers to, collectively, agriculturalists, water managers, and rangeland managers. This is outlined in Section 4.2.3, but was not made clear earlier in the paper, and we thank the reviewer for drawing attention to the oversight. The following sentence was added to Section 2.2, Coding, "Therefore, wherever "stakeholder" or "practitioner" input is mentioned throughout this document, it is taken from one of these three contexts. "Stakeholder" and "practitioner" can refer to agriculturalists, water managers, and*

rangeland managers." In addition, the first paragraph of Section 4.3 highlights the limitations of using document review to infer stakeholder needs, as opposed to directly interviewing stakeholders.

2. *Some of the papers included survey results and others were the result of stakeholder engagements, which we explained in the first paragraph of Section 3.1 - Summary statistics.*

4. Difference between results and discussion section? Both sections give high level information on the frequency of differing codes and differ very little from one another. What I was expecting from the paper based on the introduction was a discussion section distilling the information gathered in the document analysis into some guidelines for creating a decision support tool. The second paragraph of section 4.3 does this in the very limited way. I suggest rethinking the discussion section to 1) reduce redundancy with the results section and 2) fulfil the objectives outlined in the introduction.
    1. *Thank you for the feedback. To distinguish the results and discussion sections and make the paper align with what was suggested in the introduction, the following changes have been made:*
        1. *Introduction - The introduction was edited to read, "The discussion section interprets the results in the context of risk management, hypothesizes explanations for why some codes appeared more than others, and outlines the implications of this work for the DAWN project and scientists in other regions or sectors who are planning to conduct similar user-driven research and decision-support tool development."*
        2. *Results - We deleted some interpretive sentences that were repeated in the discussion section, such as "Together, these themes indicate that the most frequently mentioned concerns were those related to practical decision-making," in Section 3.2, and "The most common focus was the relationship between those who supply the information and those who use it," in Section 3.2.1. We also moved some sentences to the discussion section, such as, "The lack of desire for a "clearinghouse" of information echoes the emphasis on communication channels and personal communication." After these edits, the results section is now a simple description of codes that were most (in)frequent, and the context in which they were mentioned.*
        3. *Discussion - We deleted sentences that repeat results already outlined in Section 3. We also added additional interpretation throughout the discussion section, which has been highlighted in yellow. The discussion section is now primarily focused on interpretation in the context of Kuehne et al.'s paper.*

5. It seems a major oversight to only rely on peer-reviewed academic literature for the document analysis. State level extension services throughout the Corn Belt region produce information for agriculture producers in their state – these documents (i.e. extension publications) are a vital data for understanding the information producers need and the best means to communicate that information. Additionally, there are both state and federal data collection efforts (surveys—e.g. the census of agriculture, irrigation and water management survey) focused on sources of information for farmer decision making. These also seem vital for understanding the landscape of farmer information use.
    1. *The reviewer is correct that there is an abundant body of literature from extension services and state and federal efforts, but these publications did not suit the needs of the study, as we found they primarily provided information to agricultural practitioners, rather than collecting information about their needs. In addition, the reports that we identified primarily summarized research that had been conducted elsewhere. To reduce redundancy, these papers were omitted. This has been clarified in Section 2.1 - Document Selection with the following text, "We defined a "document" as original, peer-reviewed,*

published research. Document retrieval focused on peer-reviewed literature, despite an abundant body of extension literature, because extension documents primarily focused on lending advice to agricultural practitioners, rather than surveying their needs. In addition, identified state and federal reports primarily summarized research that had been conducted elsewhere, so these documents were eliminated to reduce redundancy."

Minor Comments:

1. What is meant by a "paper" in the document analysis? Is it only peer reviewed publications? White papers? Extension publications? More detail on this seems warranted and needed.
    1. *A clarification was added at the beginning of Section 2, "We defined a "document" as original, peer-reviewed, published research."*
2. Was 'coding' documents based on the appearance of specific text strings (e.g., "research") or based on the coders subjective opinion regarding whether the document fit into a given criteria?
    1. *Thank you for the clarification question. Coding was primarily applied to explicit mention of codes in the schema, but some interpretation was necessary for codes that could be expressed in a variety of ways, such as communication channels. Therefore, a clarification was added to the end of Section 2.2, "In most instances, codes appeared explicitly, such as with "precipitation", "forecast", and "data source." In some instances, however, such as with communication channels, coders applied codes based on interpretation."*
3. I suggest using the same word to refer to the sources of information throughout.
    1. *We are unsure whether the reviewer is referring to "Source of Information" as presented as a theme in the document, or sources of information such as "paper", "document", etc. We interpret this comment to refer to the latter, and have changed the term "paper" to "document" throughout the manuscript.*
4. "Installing irrigation requires up-front costs that will only be recouped if weather becomes unpredictable enough to necessitate its use." What information is this based on? At the very least this sort of statement needs a citation. Even better would be an explanation of what the authors mean by "unpredictable?" Isn't growing season precip always unpredictable? I think "variable" might be a better word to use here.
    1. *This sentence was reworded to say, "Installing irrigation requires up-front costs that may only be recouped during dry years, or if the climate becomes increasingly dry with time (Van Dop 2015)."*
5. "In addition, most practitioners indicated that they get their information from a human source such as a trusted advisor, Extension agent, private company, or consultant, although this is highly variable by farm scale and type, because very large farms might have data scientists on staff." -- The final clause seems to be based on conjecture. I suggest providing a citation.
    1. *This statement was based on personal communication, for which a citation has been added.*

Reviewer 2

This is a pleasant article. No major issues with it.

We thank the reviewer for their review and kind words.