

Process Evaluation: Interview Findings

May 13

2013

This report includes findings from 22 interviews conducted with the U2U project team and answers the following evaluation questions: Are grant deliverables on track for completion within an appropriate timeframe that allows subsequent activities to be completed on time? How are various tasks inter-related and dependent on others? What are team perceptions regarding how the project is going overall?

Useful to Usable
(U2U): Transforming
Climate Variability
and Change
Information for
Cereal Crop
Producers



Useful to Usable (U2U): Transforming Climate Variability and Change Information for Cereal
Crop Producers

Process Evaluation: Interview Findings

Spring 2013 (End of Year 2/Beginning of Year 3)

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NUMBER</u>
Methods	3
EVALUATION QUESTION 1: Are grant deliverables on track for completion within an appropriate timeframe that allows subsequent activities to be completed on time?	
Objective 1 Narrative	4-6
Objective 1 Table	7-8
Objective 2	9
Objective 3	10-11
Objective 4	11
Objective 5	12
Overarching (not tied to Objective)	12
EVALUATION QUESTION 2: How are various tasks inter-related and dependent on others?	
Graphic of “Dependencies”	13-14
EVALUATION QUESTION 3: What are team perceptions regarding how the project is going overall?	
Praise	15-16
Concerns	17-18
Team member ideas and suggestions for Year 3 based on concerns	18
Evaluator’s observations	19
Ideas and expectations for 2013 Annual Meeting	20

Methods

Between April 18 and May 9, 2013, phone interviews were conducted with 22 members of the U2U project team to assess the current state of grant deliverables and how the project is going overall. The last round of interviews was conducted by University of Minnesota in August/September 2012.

Most team members were contacted twice, the first time via phone and the second time via email, in an attempt to set up an interview, with the exception of three Objective 2 members who were only contacted once, and two Objective 1 members who were contacted more than twice. Team members whose expertise is listed as Extension in the *Team Contact Information* document were not interviewed given the time period this round of interviews covers, but this round does include perspectives from those with responsibilities for specific, detailed tasks along with those with a consulting role. Students were also not interviewed in this round. Non-respondents include the three Objective 2 members who were contacted only once. Two team members who responded were not interviewed due to their perception it was unnecessary because of a limited role or their colleagues had already been interviewed.

Team members were told that their responses are anonymous, but that the report would include an update on various tasks and since project leaders and the rest of the team know who is working on what, they may be able to infer who gave a specific task update. Interviews ranged from 15 to 45 minutes each.

Interview questions:

- ❖ Thinking of the past 6-9 months, but specifically in the context of Year 2 wrapping up and Year 3 beginning, what have you been working on and where are you currently at with each?
- ❖ What is coming up for you in Year 3?
- ❖ What are you dependent on others for, and what are others dependent on you for?
- ❖ How do you feel things are going overall on the project? (*Here they were instructed that they could mention anything--big picture or small detail, and were reminded again that their responses are anonymous.*)

Other questions were asked as needed, such as: Who are you working with on that? Is there a set goal for a timeline on this upcoming task?

The above questions were asked in order to answer the following evaluation questions. Each is reported on below.

- 1) Are grant deliverables on track for completion within an appropriate timeframe that allows subsequent activities to be completed on time?
- 2) How are various tasks inter-related and dependent on others?
- 3) What are team perceptions regarding how the project is going overall?

EVALUATION QUESTION 1: Are grant deliverables on track for completion within an appropriate timeframe that allows subsequent activities to be completed on time?

→Yes, with the exception of a few cases within Objective 1. (See table beginning on page 7.)

OBJECTIVE 1

Year 2 Progress:

Data Development

❖ *Regional Climate Centers*

In year two, the High Plains Regional Climate Center (HPRCC) provided climate summary maps that cover the U2U project area, which served as background material for the HUB and Decision Support Tool (DST) development. The Midwest Regional Climate Center (MRCC) provided historical data to initiate climate models (over a year ago). Their work regarding Objective 1 is done unless focus groups bring up a need for climate data or maps to be provided in a different way.

❖ *HRLDAS (Soil moisture, temperature, ET mapping)*

This task is estimated at 40% done by the task lead although two-thirds of the years are done. This data will be passed on for others to use around September 2013 (once it is trialed with the Hybrid Maize model). At the time of the interviews the IT group ran out of disc space for the data but it seemed they were addressing the problem.

Crop Model Development

❖ *Integrated Science Assessment Model (ISAM)*

Estimation of crop yields for the project region using ISAM is complete (individual sites and gridded), results have been communicated to Purdue, and a paper was submitted for publication. Results can be provided for modeling comparison when other two teams are ready.

❖ *Decision Support System for Agrotechnology Transfer (DSSAT)*

The maize model has been validated on 18 out of 19 sites tested, with North Dakota being the only site where the model did not do a decent job because of the cold temperatures in late September and early October. This gave modelers the confidence to move forward and they have run the model on NARR (32 km spatial resolution).

They are currently in the process of developing a 14 square kilometer gridded simulation (NLDAS2). This step is taking a while because of the large area (12 states at 14 km is quite a large number of simulations) and the needed input conditions e.g. climate data from NOAA. They have the size information and gridded climate information and next will move into vigorous testing.

❖ **Hybrid Maize**

Site-specific validation/calibration of Hybrid Maize was estimated at 90% done and it was noted a publication was yet to be completed on that work, although that was not the only reason for it being estimated at 90% done. Linking Hybrid Maize with gridded HRLDAS output (what they have of it so far—see above) has been taking 80% of time and will go on for next three to five months (expected completion September 2013).

❖ **Model comparison**

This has not begun but there is an expectation that the task will become clearer after the annual meeting.

❖ **Running models with future climate projections**

I did not ask about the status of ISAM and future climate scenarios as that came up in later interviews. DSSAT modelers are not yet ready to work on future simulations. They are still working on historical data but also still need future projections before they can start on that task. There is a need for some standardization of the data so that all three groups can use it. One modeler thought they might be ready to **start** future projection work after six more months (mid-November 2013).

iData internal tool

The iData tool was developed for project members to publish and share their data. The tool is already being used and its development is continuous in terms of adding new features. The IT team is adding support for geospatial data so that users can query data points and do simple data processing while browsing data. Vector data is finished and roster data is about halfway done.

ENSO Climatology

This task was estimated to be 60-70% done. Once everyone agrees with the science part, it will go into portal. It needs to be decided how to categorize climate patterns.

Field Work Days

Several team members were engaged in integrating soil moisture data into historical analysis of field work days. That is the last piece of the historical analysis and the goal is to have a draft final version ready for the annual meeting. Once this is done the next step is to project field work days under future climate scenarios.

Case studies

Planning has begun for putting adaptations into the GAMS-based version of the Purdue Crop Livestock Planning model (PCLP). The group is trying to update parameters based on the field work days analysis, modify for present-day Indiana and then develop for other three states. Field work days analysis is only one input; others are needed from crop modelers, particularly DSSAT. This task is dependent on future

climate projections; the data is available but it needs to be converted into a usable format by different groups. (This was added to the Objective 1 table below as a task under Data Development.) There is a lot of upfront work in identifying and refining the adaptations before they actually model them using PCLP.

While the case studies have fallen behind the original timeline, this is not concerning due to a perception that case study outputs are not holding anything up right now.

Nitrogen work

There is a need to incorporate the timing and application of Nitrogen, minimizing its loss for climatic/weather reasons, and maximizing yield into the U2U project. Cornell is doing some work in this area with a complex modeling system. The team has been working with them for the past six months and is figuring out if they can use their work or if it is too detailed. There was an attempt to write a planning grant to NIFA regarding this but after holding a conference call with U2U, Cornell and Iowa State, no one took ownership and wrote it (Linda did not have time).

Year 3 Plans (Objective 1):

- ❖ Complete HRLDAS data development & share with others
- ❖ DSSAT:
 - Finish DSSAT-Maize gridded historical simulations (working on now)
 - Also good deal of analysis on this output needed
 - DSSAT-Soybean modeling (an extension of the maize work so shouldn't take as long)
 - It wasn't explicitly mentioned if this was expected to be worked on or completed in Year 3.
- ❖ Hybrid Maize:
 - Complete site-specific validation/calibration (almost done)
 - Finish linking HM and gridded HRLDAS output
- ❖ Modeling comparison (identified as high priority- needs to begin immediately)
- ❖ Run three models using future climate projections (clarify whether ISAM needs to do this)
- ❖ iData roster support
- ❖ Projected field work day analysis
- ❖ Complete case studies
- ❖ Nitrogen work – figure it out
- ❖ Assist in DST development – come up with ideas based on crop modeling
- ❖ Get Decision Calendar published

Table Legend:

☐ = not started

○ or ● = in progress

(2nd one means further in progress)

✓ = complete

B = Behind original schedule

Yellow shade= this was not obtained from interviews; should have estimates after annual meeting.

Under “Expected Completion” column, content is ~~crossed-out~~ if that deadline/goal has passed and the task is still ongoing.

Objective 1 Tasks	Team	April 2013 (end Yr 2)	Expected Completion (set when?)	Notes
Data Development		○	Years 1-2 (proposal)	B
Data/maps from Regional Climate Centers	Martha, Beth	✓	--	
Soil moisture, temperature, ET mapping (HRLDAS)	Dev, Larry	40% done	Years 1-2 (proposal)	B 2/3 of years done; Ran out of disc space
Converting future climate projections into usable formats	Gene, Dev, Ben, Jeff, IT?	☐	Need by/before end of summer—clarify case study timeline (5/13)	Needed for crop modeling, field work day analysis, & updating parameters for case studies
Crop Model Development		○	Years 1-3 (proposal)	
Site-specific validation/calibration	Jeff, Dev, Atul	●	October 2012 (9/12)	B
1. ISAM	Atul	✓	--	
2. Hybrid Maize	Dev	● (90%)		
3A. DSSAT (CERES Maize)	Jeff, Gopal	✓	--	
3B. DSSAT-Soybean		☐		Will do after maize totally done
Run crop models on grid	Jeff, Dev, Atul	●	4/15/13 (9/12)	B
1. ISAM	Atul	✓	--	
2. Hybrid Maize	Dev	● (50%)	3-5 months, September 2013 (5/13)	Linking with gridded HRLDAS output
3A. DSSAT (CERES Maize)	Jeff, Gopal	○		NARR done- now working on NLDAS2

3B. DSSAT-Soybean		<input type="checkbox"/>		Will do after maize totally done
Model comparison to quantify uncertainty (using historical data)	Jeff, Dev, Atul	<input type="checkbox"/>		Identified as a high priority next step
Integrate future climate scenarios into site-specific and gridded model runs	Gene, Jeff, Dev, Atul	●	4/15/13 (9/12) *Ready to start around November 2013 (5/13)	Began discussing in Yr. 2; not behind, planned for Yr. 3
Manage crop model inputs/outputs on the HUB	Carol, Lan, Larry (users too)	●	End of 2012 Spring 2013 (9/12)	As of 9/12 there was good progress on site specific data but not gridded.
iData tool- roster support	Lan	●	End of summer 2013 (5/13)	
ENSO Climatology	Dev	● 60-70%	Analysis: Oct. 2012 (9/12)	
Field Work Days				
Integrating soil moisture into historical analysis	Ben, Larry	●	Draft final version at annual meeting (5/13)	
Project field work days under future climate scenarios	Ben	<input type="checkbox"/>		
Farm Case Studies	Ben, Paul, Otto	●	Years 1-3 (proposal); By end of summer will for sure need future parameters/ inputs from DSSAT (5/13)	Most efforts since beginning of 2013, other pieces are a precursor to case studies
Identify and refine adaptations	Ben, Otto, Jeff	●		Ongoing
Model adaptations using GAMS-based version of Purdue Crop Livestock Planning model (PCLP)	Paul, Ben	●		Planning has begun
Incorporating Nitrogen	Linda, Jeff, Otto	●		Been working with Cornell for past 6 months- need to figure out next steps
Decision Calendar Publication*	Gene	●	End of summer 2012 End of Sept 2012 (9/12)	April 2013: calling journal editor

*Getting updates on publications was not a focus of the interviews; the only one included here was reported on in previous rounds of process monitoring

OBJECTIVE 2

Year 2 Progress:

- ❖ **Producer Mail Survey**- done in Feb/March 2012, had data in July 2012, working on analysis and publications (integrated with Climate CAP project, in Year 2 spent substantive time on analysis)
- ❖ **Advisor Web Survey**- done in Feb/March 2012, had data in April 2012, working on analysis and publications
- ❖ **Dissemination:** Information from two surveys was condensed and reported back to full group and specifically taken to the Objective 3 group in October 2012 meeting to inform DST development.
- ❖ **2nd Advisor Web Survey**- done in March 2013, data is in and initial analysis is being performed.
- ❖ **Focus groups with advisors and producers**, three in Nebraska and three in Indiana, were held in February 2013 (included climatologist involvement). Summary reports have been written and sent out to team.
- ❖ **Related work:** 22 interviews with climatologists regarding how they communicate climate science to agricultural audiences (particularly farmers), what they communicate, and how they see their role. This work was presented at a couple meteorological conferences and there are two journal articles almost ready for submission.

Year 3 Plans:

- ❖ Report to appropriate stakeholders what we have learned from working so closely with producers and advisors over last two years
 - Possibly create 1-2 page fact sheets for farmers and/or Extension based on our publications and put them on website
- ❖ 2013 Advisor Survey: summarize results, work on interpretation, disseminate to team and discuss what results mean for the project, share dataset, publish (think about what information do we have that we didn't have, what is best way to transmit that information in terms of scientific publications, conferences, and appropriate stakeholder groups)
 - Goals: Send general summary of findings to Objective 2 team by May 10 and to whole U2U group within week after that or possibly after annual meeting if it's decided that that would be a better time in terms of getting feedback
 - Present results at conference week of June 4th
- ❖ Follow-up focus groups once further DST development
 - Late July 2013 for Nebraska producer group
 - September 2013 for advisor group
 - Possibility for a third producer group interaction near the end of Year 3
 - Planning for these: does Objective 3 have specific questions in mind, maybe even more specific than what they received from the first round? Do other Objective 3 members (in addition to climatologist presence) need to be at focus groups?
- ❖ Think about how to transition from Objective 2 to Objective 4 regarding assessing DSTs
- ❖ Publications

OBJECTIVE 3

Year 2 Progress:

- ❖ Objective 1 members started to work on ideas for application of their work.
- ❖ Growing Degree Day Tool
 - Team met and made specifications for Phase 1 of tool, data done, prototyped out with images, shared during Advisory Call and focus groups
 - Now developing web pages for it (have done some prep work and ready to start coding)
 - Goal to finish within next six months then further test with people
- ❖ Climate/Crop Data Portal
 - Developed web-based interface that allows users to pick a station within the area and track historical trends of data such as precipitation, corn yield, growing degree days.
 - Received focus group feedback. Need to have further discussion with Objective 1 group to decide what needs to be done.
 - Now defining what it will take to get it in the HUB
 - Goal for integration into site: June 2013
- ❖ Field Work Days historical analysis has been put into several tools that allow a farmer to know the probability, given historical weather, of being able to get out in the field and working:
 - FWD Probability Model
 - FWD Probability Manure
 - Goal to finish within next six months then test with people
- ❖ There have been calls and an in-person meeting to plan for the toolbox front-end: Group meeting in Davenport in Fall 2012 regarding what tools needed to look like

Year 3 Plans:

- ❖ Continue working on ideas for application of climate information and modeling outputs
 - Incorporate crop growth modeling “final product” to answer questions about farmer decisions such as planting date
 - One DST developer hopes for Objective 1-2 results by mid-Year 3 (it is important to get any other tools done in Year 3; another said by Spring 2014 have at least one “beta” tool in next step of development)
 - Create DSTs that involve decisions that have real value to a farmer: Nitrogen, planting dates, dry-down of corn after it’s matured (adaptations that relate to big changes in yield)
- ❖ Discuss focus group feedback and next steps for existing tools – which feedback to integrate?
- ❖ Incorporate existing tools into portal/HUB
- ❖ iData ongoing
- ❖ ENSO tool on portal
- ❖ Testing of tools—ideas:
 - Work backwards from follow-up focus group dates listed above
 - Need to have conversation about further testing/evaluation- in 2nd round ask whether they can use them in the next several months and act as beta testers?
 - Test tools with some members of advisory group

- Test tools with Corn CAP educators (they could help pilot test or roll them out)
- Get feedback from additional states? (One person mentioned they felt their state was on the peripheral since focus groups weren't conducted there.)
- ❖ Plan for Dennis, Chad and IT team to sit down for a few days together and make progress on getting toolbox and HUB better formulated- plan for regular, close interaction
- ❖ Refine connection to Applied Climate Information Systems (ACIS) data and build products from it

OBJECTIVE 4

Year 2 Progress:

- ❖ Lead on Objective 4 has been integrated into Objectives 1-3; the better he knows the process and products being produced, the better prepared he is to go out and talk to producers and advisors and convince them to look at DSTs and invest some time in them

Year 3 Plans:

- ❖ Plan for evaluation of Objective 4
- ❖ Prepare for Year 4 piloting of DSTs: target what audiences will be reached and how, along with what tools we are going to bring to each audience
 - Goals: Six months from now (Nov.) be on agenda for four sets of meetings across region
 - Advisors:
 - December 2013 Certified Crop Advisor meeting in Indiana: talk about what we're going to do and go back next year and actually do it (the pilot)
 - Iowa Integrated Crop Management conference: get on agenda
 - Other two pilot states (NE & MI): talk to U2U team members from those states
 - Producers:
 - Indiana Top Producer Meetings in October/November
 - Iowa Crop Advantage Series at 14 locations in January
 - Other two pilot states (NE & MI): talk to U2U team members from those states
 - Extension educators:
 - Iowa: annual meeting for ANR branch includes regional and field specialists
 - Other three pilot states: work with U2U colleagues
 - Figure out how to most effectively reach "core" – between 2-10 Extension personnel in each state who not only know and understand product (set of tools created by but not owned by U2U) but have coverage to share product, get their clientele to utilize, and be local expert
 - Plan is dependent on types of DSTs created (agronomic tool=field specialist; economic tool=farm managers)

OBJECTIVE 5

Year 2 Progress:

The two Regional Climate Centers (RCCs) and the Information Technology (IT) at Purdue had a call during Year 2 to begin preparing for Objective 5. They discussed the technological capabilities of the regional climate centers to take on the model runs and DSTs.

Year 3 Plans:

Another discussion between the RCCs and IT team would be useful to keep the ball rolling and to make sure that they are aware of each other's capabilities. Other than that, one of the RCC directors thought it is probably too soon to have specific tasks related to preparing for Year 5.

OVERARCHING

Year 2 Progress:

- ❖ Advisory Committee call held in early 2013 went quite well
- ❖ Communicated about project in Extension newsletters and to other groups (e.g. ASA, SWCS, pork producers, Farm Radio Network)
- ❖ Connections made between U2U and Corn CAP
- ❖ Wrote 2013 annual marketing plan
 - Includes quarterly newsletters (first one done November 2012)
 - Website re-design is done (for external users) and will be rolled out May/June- needs content
 - Press releases written on three journal articles (so far)

Year 3 Plans:

- ❖ Continue to present at other meetings and incorporate U2U concepts
- ❖ Carry out marketing plan including promotion of DSTs once they are posted on website
- ❖ Better understand marketing need, i.e. tools needed that would help team members in their outreach efforts

EVALUATION QUESTION 2: How are various tasks inter-related and dependent on others?

→ Blue corresponds to Objectives 1, 3, 5 and Marketing; orange corresponds to Objectives 2, 4 and Evaluation;

→ Clouds=items needed for that particular box (Each box is dependent on those items)

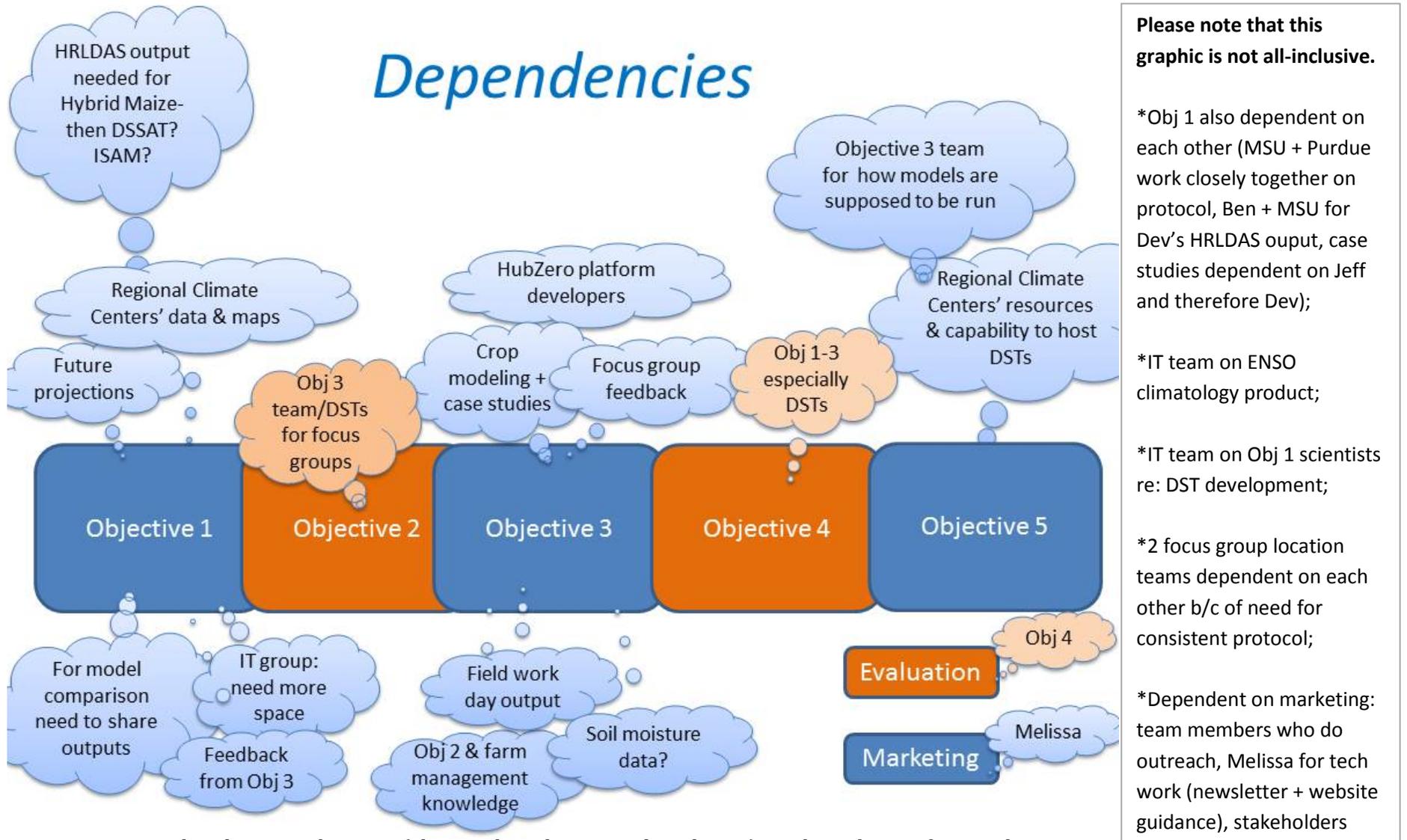


Figure 1. Items that the grant objectives (along with Evaluation and Marketing) are dependent on for completion.

Case studies dependencies

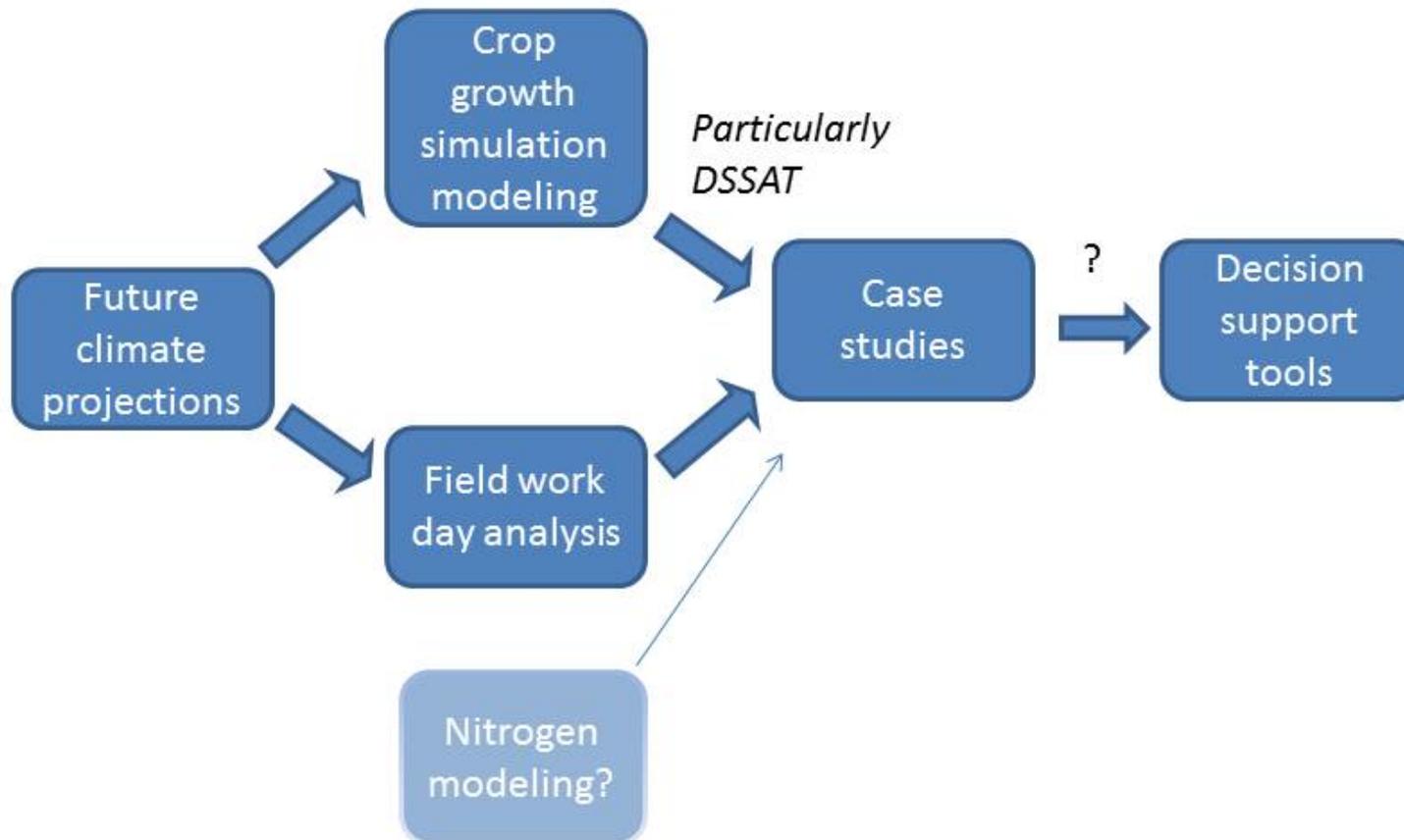


Figure 2. Boxes preceding “Case studies” are items needed for completion of the “Case studies” task, which as an Objective 1 activity, will inform Decision Support Tool (DST) development (in a way unknown at the time hence the question mark above that link).

EVALUATION QUESTION 3: What are team perceptions regarding how the project is going overall?

Praise

- ❖ **Nine team members specifically gave praise to Melissa & Linda’s leadership, with some select comments listed below:**
 - “This is a very difficult thing to do and they’ve done an outstanding job. Very few could probably successfully carry this off.”
 - “They are extremely good at keeping people on track; they are keeping things moving.”
 - “They do a great job of guiding us; they don’t steer us. They do a good job getting people refocused on a task but then allowing them to flourish.”
 - “They are good at promoting that we present and publish our work, which I think is excellent.”
 - Two of these nine people mentioned the importance of these interviews:
 - “It’s impressive that funds are going into doing the best they can to make sure nothing’s behind.”
 - “There needs to be an independent voice there somewhere from the outside that says “Here’s what I see” – that’s invaluable. If you’re already in the system, it’s rose colored glass.”

- ❖ **In addition, others mentioned Melissa’s strengths in particular:**
 - Making sure people stay on task/track and up-to-date as best as she can, and is good at pushing where needed
 - Detail-oriented
 - “The project manager has a lot to do with the success of the project as a whole.”
 - “The management of the grant is superb.”
 - “Melissa has done a great job as project manager.”
 - “Melissa is a saint.”

- ❖ **Eight team members discussed how they “like the group”:**
 - Two people mentioned how fortunate the team is regarding personalities jiving. “We are very fortunate to have not been slowed down by difficulties in working with people.”
 - “It’s a good group of people; not all projects have people that are relatively easy to work with. It’s nice to be on a project where people get along and there aren’t big egos.”
 - “My biggest comment is that I like our group. The most important thing is that the people do work well together. Most all of our people participate, some more than others, but most all are there at the calls.”
 - “There is good camaraderie and the team is very engaged.”
 - “Fascinating group with very capable people.”
 - “I’ve been pleased with the interaction among such a diverse team.”
 - “I have been really impressed with people across all the states. They are top notch, as good as can be expected.”

- ❖ **Four people expressed that they are pleased/impressed, given “_____”:**
 - “Given the size and complexity of the grant, I think it’s going and progressing really well overall.”
 - “Given my limited role, the number of universities, people and different directions, I’m really impressed with how organized it is.”
 - “Things are going pretty darn well given as big and diverse as this team is.”
 - “I really like the environment and think this group in particular has done really well interacting, because it’s not easy when you have a multidisciplinary group like this that looks at the world differently.”\

- ❖ **Three people specifically mentioned the regular phone calls = good**

- ❖ **Two people specifically mentioned the annual meetings = good** (with this being implied for more given the amount of times the upcoming annual meeting was mentioned in terms of making progress/clearing things up—see page 19)

- ❖ **Two gave praise to Objective 1 specifically:**
 - “I see top level scientists improve and fit these models and that’s encouraging to me because I can see places where farmers can use these types of tools.”
 - “I am pleased with the extent to which sequentially the important stuff IS getting done. The group has been making decisions about what to move forward with, which is very, very good. There is only so much you can do with limited time and money.”

- ❖ **Two were impressed with the “smoothness” of the grant:**
 - One noted, “This is probably the smoothest grant I’ve ever worked on. That does not mean that things are 100% smooth.”

- ❖ **Comments indicating overall praise include:**
 - “I’m really pleased with it overall.”
 - “This is one of the most functional projects I’ve worked on. It is really very well organized and communication has been good. I have enjoyed every aspect and have learned a lot.”
 - “This is one of the more well-organized and well-run projects that I’ve worked on.”

- ❖ **Other positive aspects:**
 - Group is accelerating and moving on to a higher level of productivity
 - On task in terms of the big picture
 - Engaged in community well and community has a wider recognition of our work
 - Positive outputs
 - Well-organized process for current DST development and review (team members met regularly to review and answer IT questions, focus groups collected detailed feedback)
 - “The team has worked very well to create something that we can get out there and start to engage people around.”

Concerns

Related to Objectives 1 and 3:

- ❖ **Five expressed concern regarding Objective 1 progress:**
 - “I would have liked to see a little more progress on Objective 1 and folks staying on task better.” [Obj 1 respondent; this person also noted that some of the delays were for good reasons such as uncertainties and difficulties in data and modeling]
 - “I would have thought crop modelers would be a little further down the road at this point.” Also “It does tend to move a little slower than planned.” [Obj 1 respondent; also noted that the later part—future scenarios—could move more quickly once the models are refined]
 - Concern that “we could go on doing modeling forever and really not get a lot of good that comes out of it.” [Obj 3 respondent]
 - “Now that we’re in the middle of the project (Year 3), I’m a little concerned with the pace of development of new tools. Running models can consume all your time so that in the end you don’t have much time to take the results and apply them to something. There is a danger of getting too involved in the modeling work.”
- ❖ **Two described the need for Objective 1 to: A) see themselves as applied research that is applying information to Objective 3, and B) focus primarily on research objectives that lead to usability by farmers.**
 - One went on to describe how the DSTs need to be easy for farmers to use (behind the scenes can be complex) and something that they will trust; “Objective 2 comes in here in terms of communicating what farmers are willing to do.”
- ❖ **Lack of clarity around exactly what Objective 3 is getting from Objective 1 that will inform their work;** team members acknowledge that Objectives 1 and 3 have been working hard but note that there has not been much yet in terms of end products to take to stakeholders and user groups. “In Year 3 need to get advanced prototypes of tools out there.”
- ❖ **One was slightly concerned about “Objective 3 becoming what people are comfortable doing rather than what we should be doing.”**

Related to Publications:

- ❖ **Two team members observed cases where there was *no opportunity to collaborate/publications came as a surprise*:** “In most cases those on project are very inclusive and make the offer, sometimes two or three times, that whoever is interested in participating is welcome. There have been a few other instances (one or two) where that has not been the case. In these cases a publication just appeared with no opportunity to collaborate, even since this was discussed as a group when we decided to be inclusive rather than exclusive.”
- ❖ **One discussed the *timing and meaningfulness of collaboration opportunity*:** Some opportunities to participate are sent so late that team members feel there may not be a meaningful way for them to participate at that point. In these cases the collaboration opportunity seems to be done for reasons of politeness but defeats the purpose of a multidisciplinary team which should draw on the creativity of team members from different domains.

Other Concerns:

- ❖ **Two described the need for a strategy to be put in place for retaining the team and proper interaction within the team**, i.e. meaningfully use the wide expertise of the team, for proposals/follow-up work (becomes relevant for 3rd and 4th year)
 - This item is listed under concerns but the respondent did note that this is only coming up because the team is doing a good job; if things weren't going well, they'd be more concerned about that.
 - Related concern of people disengaging in a large team like this (although 90% are on board): "There are a few people that I see as still having a big role that haven't been on a call or haven't heard from in a while. I would hope people don't have to be hounded."
- ❖ One was "fairly concerned" about **how effectively the portal is being used and discussed the need for active involvement and leadership from the IT team as the project moves** beyond science stage and into analysis (thinking about sharing of data, exporting to other platforms, large dataset issues); this person said, "We need to abandon the notion that at some point all the data will be ready and then the IT group will take over the data from the crop modelers. At no point the data is going to be "ready" ...data will keep coming."
- ❖ **Not knowing how we are going to deliver a nitrogen DST in Year 3** ("We said we would deliver DSTs on relevant issues and that is the #1 issue.")
- ❖ This one not a "concern" per say but a reminder: "As things move from climate to yield to farm management models we need to constantly check rear-view mirror and see if what's coming out of that combination is reliable and valid." (This person also stated the importance of Objectives 1 and 3 working simultaneously rather than sequentially.)

Year 3 ideas/suggestions based on concerns (from team members interviewed)

- ❖ More collaboration between Objectives 1 and 3
- ❖ Become more inclusive regarding publications; inclusive ≠ politeness
 - Get ideas for papers out to a wider audience (do not pre-select group); we want people that bring in different views so that papers can take a different shape
 - Non-relevant emails can easily be deleted
- ❖ Involvement from more IT individuals and their proactive expertise in designing how to put together, manage, and sync all the data. Need for more people and more involvement.
- ❖ Start to think about how we will come up with the value of this project, such as anecdotes of who is using this information and how (qualitative measures rather than just publications and numbers); this information should be put on public website.
- ❖ Look at what's next; is there a way to continue at least pieces of the project in the future? "This is an exciting thing, a testament to a group that functions."
- ❖ By end of Year 3/beginning of Year 4 have a strategy in place regarding how to put follow-up together; it may not be the whole team but all persons should have a say in proposal
 - People are already getting invited for small projects/applying to things that come up and that's good and should continue but again how do we form small groups without pre-selecting?

Evaluator's observations

- ❖ This is really a transition period and critical time for the project.
 - “It’s at that stage where we’ve been working on it a while but don’t have that many results yet, but it’s the middle of the project so we don’t expect too many breakthroughs yet.”
 - “Now we are at the point where we need to start connecting dots.”
 - “We’re moving into a part of the project where it might be more challenging because we actually have outputs now. Now there has to be something that makes sense coming out of Objectives 1 and 2. The groundwork has been laid for good communication and a good process and hopefully that translates. We are in the third of five years—it’s time for big things to start happening.”

- ❖ There is a focus on publications even more so than grant deliverables needed for subsequent objectives; one even said “Some people view the publication as the ultimate deliverable.

- ❖ While five people were concerned about Objective 1 progress, most people interviewed thought the project overall was on track. One person thought the project was a little ahead of where it might be.

- ❖ There is an idea of a continuation to complete all goals/objectives if the team ends up not being on target, but another said, “From what I’ve seen we can still meet the objectives.” There is confidence that Objective 4 will go well because of the number of universities and number of different links to farmers.

- ❖ Two people not drawing salary from the grant mentioned the challenge of time. Future climate projections are dependent on someone who draws no salary from the grant and has no graduate students devoted to the project. (This is a major task still to be done by Objective 1 that needs to be discussed as some indicated they were waiting on it and some responsible for it said they need to know if someone is waiting on them.)

- ❖ There is a possible need for clarity regarding IT versus Objective 1 scientist roles. Some Objective 1 scientists want more from the IT end (see above Concerns section) yet IT saw it as the users’ role to format data in a consistent way to other team members and to upload the data (IT is not transforming formats but steps in and helps when users have problems). Please note however that this specific example of how IT explained users’ roles may not be the point of contention.

- ❖ There are different perceptions of the communication of DST feedback. One DST developer, at the very end of April, said their work was on hold due to not seeing focus group results, yet one Objective 2 team member was self-conscious that maybe the results had been sent out in too many different formats/versions.

- ❖ There was not much mention of Objective 2 findings being incorporated into DSTs other than recent focus group feedback.

Specific ideas/expectations for annual meeting that came up in interviews

- ❖ Define what is expected in next year; come away with understanding of big picture (proposed 30 minutes) and where we stand
 - “Let’s get things prioritized and get them done in the order that’s best for the project.”
 - “We do need a shot of energy to figure out where we are and get the process going along.”
 - Timeline for when Objective 1 products will be ready (or more importantly **needed**) for Objective 3
 - Find out what Objective 3 is getting from Objective 1, but also what Objective 3 is expecting/hoping to get from Objective 1
 - Next steps for Objective 3 and plan for moving forward (come up with specific tasks and timelines)
- ❖ Review progress and identify slow elements- hoping Jenna’s presentation provides some unvarnished ideas about how to move forward
- ❖ Figure out where all pieces of Objective 1 are particularly in terms of viable inputs for case studies and get that at least partially underway; figure out “when can we really start moving stuff”
 - *Evaluator’s related suggestion:* Clear up expectations/needs/timeline re: future projection modeling work
- ❖ Plan for model comparison (Obj 1)
- ❖ Work on Objective 3
 - Discuss other DSTs
 - Discuss portability & effective use of the “portal”- How do we make product generic enough that other products can quickly spin off from there? How do we not restrict ourselves?
- ❖ Interaction of Objectives 2-3 regarding focus groups: Spend time on 1st round findings and plan for follow-up focus groups (late July)
 - Discuss whether Objective 3 need more detailed summaries/specifics- this could even be provided before/at the meeting if so.
- ❖ Discuss nitrogen work
- ❖ Talk about evaluation of Objective 4 in breakouts
- ❖ Try to get certain advisory committee members linked up with certain team members
- ❖ Adam Wilke present his findings from climatologist interviews (15-20 minutes); how they communicate climate science will be very important when we move into Extension piece
- ❖ Discuss Extension publications that could come out of producer survey data (co-published by U2U and Climate CAP?)