

U2U Progress Monitoring Update

August 15th Check-in

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Introduction

Progress monitoring reports on the U2U Climate grant will be generated three times per year. This report reflects work that the U2U Climate grant team has done from the start of the grant to August 15th, 2011. This report has four objectives:

- 1) To assess expected progress made toward grant objectives during the designated period.
- 2) To determine the degree to which the team's progress aligns with stated objectives.
- 3) To determine team readiness to pursue stated objectives for year two.
- 4) To assess, overall, the functionality and climate of the team and collaborative processes.

There were many tasks related to the *Objective 1 team* and the *Objective 2 team* intended to be completed by the this first progress monitoring check-in.

Summary of Results

1) Expected progress made toward grant objectives during the designated period.

There were no significant concerns regarding both teams' (Objective 1 and Objective 2) progress toward timely completion of tasks toward program milestones. Everyone interviewed expressed confidence that tasks were completed when and to the degree needed to reach their associated goals.

Some points:

- Most of the tasks planned to be completed between August 15 and the beginning of the program were completed on time. If a task was not yet completed, PIs expressed confidence that the delay would have no long-term effect on the ability of the U2U group to meet related goals for the following year.
- Some tasks were appropriately modified as a result of a clarification of priorities and needs during the work process.
- A few tasks were under discussion regarding their priority, relevance, and timing.

2) Degree to which the teams' progress aligns with stated objectives.

There were no significant concerns regarding the alignment of both teams' (Objective 1 and Objective 2) work toward stated objectives. Tasks and goals appear to be on track. Everyone interviewed expressed confidence that good choices were being made to reach stated grant objectives.

3) Team readiness to pursue stated objectives for year two.

There were no significant concerns regarding both teams' (Objective 1 and Objective 2) preparation for meeting upcoming task and objectives of year two.

4) Functionality and climate of the team and collaborative processes.

There were no significant concerns regarding both teams' (Objective 1 and Objective 2) climate and collaborative process, within teams and across teams. Everyone interviewed were positive about who they work with, what they were working on, and the progress they were making.

Some points, positive and negative:

- Objective 2 team is collaborating with another CAP grant regarding part of one of its surveys. This collaboration is viewed as beneficial, however challenging.
- Objective 2 team has taken steps to make sure they are meeting the needs of the Objective 1 team.
- Conference calls were perceived as particularly useful.
- The program coordinator, Melissa, is viewed by both teams as exceptionally good at keeping the program organized and moving forward.
- The collaborative internet site, "Drinet," is thought by some team members to be a good idea in theory (as a collaborative device), but perhaps not as practical as email.
- There is a little concern that response time to email inquiries could be quicker.

Method of compiling progress information

Information on the progress of the U2U grant was primarily collected through phone interviews that were conducted in September, 2011. PIs who had been cited as responsible for major tasks related to Objective 1 and Objective 2 at the Kansas City meeting and who had one or more major task that was expected to be completed by August 15th were asked to share about the progress they had made on those tasks, about who they worked with on those tasks, and about how they felt the work on the U2U Grant was going overall. Almost everyone initially contacted to be interviewed agreed to be interviewed. These interviews took between 10-20 minutes. They informed the updates noted on the majority of tasks—those expected to be done on August 15th as well as those expected to be done at a later date— and they informed the notes on the working groups and the overall process. E-mails, conference call notes, and the report compiled for the continuation process for funding were used to fill-in missing information as well as to cross-check information.

Progress Descriptions in Detail

■ Objective 1 Team

Objective 1 team aims to use existing data to develop a knowledge base of potential biophysical and economic impacts related to climate changes and to consider the relative risks they pose. In year 1, Objective 1 tasks involve the development of data sets and data modeling frameworks. There are decisions that still need to be made regarding the data analysis and regarding what part of the models will be available on the HUB

The following overviews the progress made on each Objective 1 task that was projected to be completed in year 1. (These updates are also included in the table at the end of this document.)

Tasks that were expected to be completed by August 15, 2011:

- *Identify data specifications for representative data series and collect 1-2 representative data series per state:* Data specifications were sent out, and individuals had until September 15 to collect and report the data. While this deadline was later than initially planned, the data was still collected in time to use in the crop simulation models, which are scheduled to be done in December. As of September 26th, data from all but two states were available on the HUB.
- *Identify Data Processing Specialist:* The Data Processing Specialist was supposed to be hired using funds designated for the Year 1 consultant. While the Year 1 consultant is not a data processing specialist, there is a need for one, and the Year 2 consultant funds will likely be used to hire one.
- *Make 10-Year, 4-km gridded data available on the HUB:* This task is not yet complete, for it took some time to sort out just what type of data should be made available on the HUB. It was determined that it would be most efficient to use data from NARR or NLDAS. Common parameters still need to be defined. Nonetheless, this data should be available on the HUB for use in individual models by the end of October, 2011.
- *Publication-Ag-climate decision calendar:* Multiple drafts of a Corn Producer Decision Calendar for Iowa have been circulated, and a manuscript is being prepared for publication in the *Bulletin of the American Meteorological Society*. It is hoped that this calendar will be expanded so that it is relevant for all of the Midwest.

Tasks that were expected to be completed by December 15, 2011:

- *Complete Analysis of existing data to extract probabilities and linkages associated with ENSO data:* The ENSO data analysis of impacts on rainfall and temperature has been completed for Indiana, and a poster was presented at a conference. Further analysis needs to be done on data

from the rest of the region, and parameters need to be determined for this data analysis. The analysis should, nonetheless, be done on time.

- *Run crop simulation models using representative data series:* There are two parallel modeling efforts underway—a point-based model and a grid-based model. Work on the point-based model has started, and the Illinois group has already completed a presentation on the grid-based model. It was, however, noted that a couple things need to be worked out. One is that, due to the issues related to licensing and compatibility of the data, it is not clear whether it is best to run the models offline and post results, or if it is best to have the ability to run the results in an online portal. Also, one PI expressed that the analysis of the crop model will probably be a bit behind and that milestones for running this model should be defined so that it is clear what aspect of the model is expected to be completed. Nonetheless, these challenges were not expected to negatively influence the ability of the group to meet its future targets.
- *Publication-Overview article of meteorological aspect of U2U project:* This is being published as a chapter in an *Annual Agricultural Vulnerability for the Midwest* (?).

Tasks that were expected to be completed by April 15, 2012:

- *Develop Framework for running gridded crop models:* While originally the plan was to do crop modeling in the HUB, it has been decided that doing so is not actually necessary. Instead, the plan now is to make the LDAS output data available on the HUB. Information has been collected from modelers that give an idea of what the output will be. All the needed output data should be available on schedule.
- *Make 30-Year, 4-km gridded LDAS data available in HUB:* This is on track to be completed on time.
- *Publication- TeraGRID annual conference proceedings:* The applications for the conference are due in late spring. It is not clear yet if there will be enough information to actually publish something in time for this conference.
- *Publication-Field Days Article:* The data for the article has been collected. While the analysis has not started yet, it will be soon. Weather variables as well as other covariants do, however, need to be decided for the analysis, and a student probably needs to be hired to help with the project. The economic analysis, and hopefully the physical analysis too, are on track to be completed this spring.
- *Finalize list of activities for year 2 economic case studies:* This has yet to be started and some decisions regarding focus need to be made. Nonetheless, it is expected that, by the start of year 2, a working model will be developed to use on all of the case studies. The analysis of the case studies is, however, dependent on output data that others are generating.

■ Objective 2 Team

Objective two aims to understand how producers make decisions under uncertain climate projections, what type of information they need to make better decisions, and what are effective methods for disseminating usable knowledge to them and to larger agricultural networks. In year 1, Objective 2 tasks primarily involve the development of survey and interview questions as well as the identification of individuals to be included in the survey samples.

The following overviews the progress made on the Objective 2 tasks projected to be completed in year 1. (These updates are also included in the table at the end of this document.)

Tasks that were expected to be completed by August 15, 2011:

- *Develop methods plan for Network Analysis:* The Network Analysis plan is still in development. Small groups of advisors and Extension agents will be surveyed and/or interviewed, and some questions from the Advisor Survey will be included. The list of advisors is already collected, as it is drawing from the sample used in the Advisor Survey. There are, however, a few choices that still need to be made, such as which groups of advisors to sample, on what type of climate change information should the Network Analysis focus, and what is the purpose of the Network Analysis—to determine who educates producers about climate information and DST or to determine how climate information is being treated within the network. The goal is deploy the Network Analysis in March.
- *Report on web survey software:* This was completed on time.
- *Finalize sampling strategy for Producer Survey with CAP:* The sampling strategy for the CAP Group is almost completed. Sampling selection criteria is being developed with NASS, and it will be finalized soon.
- *Publication-Journal Article overview of U2U process and project:* This article is not yet completed, but will be finished in December as will a book chapter.

Tasks that were expected to be completed by December 15, 2011:

- *Complete IRBs:* The formal IRBs for the Advisor Survey, Producer Survey, Network Analysis, and Climatologist Interviews have yet to be submitted because the final instruments have not yet been developed. They will be submitted as these instruments are finalized.
- *Gather names and addresses for Advisor Survey:* Many names have been gathered, and the final list will be completed this fall.
- *Develop Advisor Survey:* Survey development has started, and it will definitely be done in December.

- *Develop Producer Survey with CAP:* The development of the survey has taken a little longer than expected. The delay is mostly a result of the involvement of the CAP Group. While ultimately strengthening the survey, the group's involvement has meant that more time needs to be put into working out the details than initially expected. Nonetheless, a meeting with the CAP Group is scheduled for the end of September, and the survey will be done in December and be ready to be deployed in January. The analysis is expected to be completed by April.
- *Design Interview Questions for Climatologist Interviews:* A student has been hired to work on this project. Question topics will be taken from the Producer Survey and the Advisor Survey. Because the interview questions are somewhat dependent on the completion of the surveys, their design may not be done in time for the interviews to be completed by December 15th.
- *Conduct Interviews:* As the questions are not yet developed, the interviews probably will not be completed by December 15th. They will, however, definitely be done before April.

Tasks that were expected to be completed by April 15, 2012:

- *Deploy Advisor Survey:* The Advisor Survey is on track to be deployed in January.
- *Deploy Producer Survey:* The Producer Survey will be ready to be deployed in January.

■ Working Groups

PIs have primarily been working with individuals who are on their same objective, and research assistants, post-docs, and other staff have been supporting the work of the PIs. Within the objective groups, many PIs work especially closely with a sub-group of individuals who are on the same task, meeting in person when possible or via conference calls. PIs who are on the same objective also regularly update each other on their work at the monthly objective conference calls. There has also been collaboration between objective groups, and those in the Objective 2 group did express that have made an effort to make sure their survey questions will target information that will be useful to the Objective 1 group. The monthly full group conference calls also make sure that PIs are aware of the work that the other objective group is doing.

While there has yet to be a great deal of involvement of outside stakeholders, a couple collaborations should be noted. First of all, the gathering of some data has required the cooperation of individuals in national and state climatology offices, and the gathering of names for the surveys has involved communication with bankers association, agribusiness associations, and other relevant organizations. The CAP Group has also been intensely involved with the development of the Producer Survey. It was mentioned by more than one PI that its involvement has slowed things down a bit, as more interests need to be taken into account; at the same time, there was unanimous agreement that the involvement of the CAP Group strengthens the survey a great deal. It also should be noted that two PIs went to Australia to learn from others who have developed tools similar to the tools the Objective 1 group is developing, and another PI has engaged with visitors from India who are working on a

similar project. Finally, even though nothing has been done to involve the advisory group at this time, it is expected that, as work on the grant progresses, their involvement will be a natural addition to the work.

■ Overall Process

PIs were overwhelmingly positive about their experience working together on the U2U Grant. Many cited the strong organization and positive influence of the project manager as a strength, and they also recognized the conference calls as an effective way to keep up-to-date on the grant. In fact, some observed that the frequency of the conference calls means that PIs must continuously be thinking about their work on the grant, and many noted that the calls bolster communication between PIs and their engagement with the work related to the grant. At the same time, a few expressed that face-to-face communication was a more effective means of communication for them. A few PIs also were concerned that, while the use of the HUB has great potential as a way to share resources, these resources may not actually be used by others. One pointed out that it is more difficult to seek out a resource on the HUB than it is to have one land in your inbox. Along the same lines, another mentioned that sharing resources on the HUB is only useful if others actually go to the HUB to look at these resources. Lastly, a few PIs stated that their ability to do their own work was dependent on others getting their work done. Prompt response to emails and adherence to deadlines is appreciated by those in this position

U2U Timeline of Tasks and Deliverables

Objective 1: Use existing data to develop a knowledge base of potential biophysical and economic impacts related to climate changes and consider the relative risks they pose.

Legend

● Completed

⊙ Expected to be completed

*On time

⊗Late

⊖ No longer part of the plan

Tasks/Deliverables	Who	On time or late?	Aug 15	Dec 15	April 15	After April 15	Notes
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Objective 1.1: Data Resources and Development

Identify data specifications for representative data series	Jeff	*	●				Details (09/14): Data specifications and a September 15 th deadline were sent out to all individuals collecting data.
Collect representative data series (1-2 per state)	Ben	⊗		●			Details (09/14): All representative data was due on September 15. As of September 26, this was completed and all but 2 states were posted on the HUB.
	Atul	⊗		●			
	Jeff	⊗		●			
	Roger	⊗		●			
	Ray	⊗		●			
	Dennis	⊗		●			
	Martha	⊗		●			
	Steve	⊗		●			

Tasks/Deliverables	Who	On time or late?	Aug 15	Dec 15	April 15	After April 15	Notes
Identify data processing specialist	Martha Steve	⊗				⊙	Details (09/14): The data processing specialist was supposed to be hired with the funds for the Year 1 consultant. While this did not happen and there has yet to be a need, this should happen in Year 2.
Complete analysis of existing data to extract probabilities and linkages associated with ENSO data	Dev	*		⊙			Details (09/14): The ENSO data analysis has been completed for Indiana, and further analysis will be done with data from the larger region by Dec 15. Parameters still need to be determined for this data analysis.
Objective 1.2: Crop Modeling							
Run crop simulation models (3 maize, 2 soy) using representative data series	Jeff Atul Dev	*		⊙			Melissa Notation: <i>Can begin when representative data has been collected. This needs to be completed by the end of the year.</i> Details (09/14): The crop models have been started, but milestones for running the model need to be defined.
Develop framework for running gridded crop models in HUB (and run models)	Carol	*			⊙		Details (09/14): Output data collection has begun, and it will be made available in the HUB. It was decided that this output data was sufficient, and it was not necessary to run models in the HUB.
Make <u>10-year</u> , 4-km gridded LDAS data available in HUB	Atul Carol	⊗		⊙			Details (09/14): This will not be done until October. Common parameters need to be determined.
Make <u>30-year</u> , 4-km gridded LDAS data available in HUB	Atul Carol	*			⊙		Details (09/14): This is on track to be done on time.

Tasks/Deliverables	Who	On time or late?	Aug 15	Dec 15	April 15	After April 15	Notes
Objective 1.3: Farm Case Studies							
Finalize list of activities for year 2 economic case studies	Ben Ray Jeff	*			⊙		Details (09/26): The economic case studies depend on output from other models and climate projections. As long as these things are done on time, the analysis of the case studies should be ready to be completed in Year 2.
Publications							
Ag-climate decision calendar	Gene	*	●				Details (09/14): A decision calendar is being published for Iowa corn growers. There is interest in expanding the scope of this calendar in the future.
Journal article detailing overview of U2U process and project	Linda	⊗		⊙			Details (09/14): This will be published in December.
TeraGRID annual conference proceedings	Carol Dev	*			⊙		Melissa Notation: Date for this conference has not been set, but it typically occurs over the summer with applications/proceedings due in late spring Details (09/14): It is unclear if there will be enough data to actually have an article together on time.
Overview article of meteorological aspect of U2U project	Dev	*		⊙			Details (09/14): This is being published as a chapter.
Fieldwork days article	Ben	*			⊙		Details (09/26): The analysis of the field work days data has not started yet, but should soon. Covariants still need to be determined. The economic analysis and hopefully physical analysis too should be completed by April.

Objective # 2: Understand how producers make decisions under uncertain climate projections, what type of information they need to make better decisions, and what are effective methods for disseminating usable knowledge to them and to larger agricultural networks.

Legend

- Completed
- ⊙ Expected to be completed

- *On time
- ⊗Late
- ⊖ No longer part of the plan

Tasks/Deliverables	Who	On time or late?	Aug 15	Dec 15	April 15	After April 15	Notes
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Objective 2.1: Producer and Advisor Surveys

Advisor Survey

Complete IRB	Linda - IN	*		⊙			Details (09/14): There is a blanket IRB, but individual instruments will need to be approved in future.
	Maria – MI	*		⊙			
	Tonya – NE	*		⊙			
	Jean – IA	*		⊙			
Gather names and addresses for advisor survey	Tonya-NE	*		⊙			Details (09/14): Names have already been gathered.
	Jean-IA	*		⊙			
	Amber-IN	*		⊙			
	Maria-MI	*		⊙			
Report on web survey software at Iowa State	Jean	*	●				Details (09/14): This was completed on time.
Develop Survey	Cody Tonya	*		⊙			Details (09/14): The survey development has started and will be done by December.

Tasks/Deliverables	Who	On time or late?	Aug 15	Dec 15	April 15	After April 15	Notes
Deploy Survey	Cody Tonya	*			⊙		Details (09/14): The survey is on track to be deployed in March.
Producer Survey							
Complete IRB	Tonya-NE	*		⊙			Details (09/14): An umbrella IRB has been approved, but will need to get survey approved once have questions finalized.
	Jean-IA	*		⊙			
	Amber-IN	*		⊙			
	Maria-MI	*		⊙			
Sampling strategy w/ CS-CAP	Linda	*		⊙			Details (09/14): The survey sampling strategy is almost completed.
Survey development w/ CS-CAP	Linda	*		⊙			Details (09/14): The development has taken longer than expected, but the survey is still on track to deploy the survey in January.
Deploy Survey	Linda	*			⊙		Details (09/24): The survey should be deployed in January.
Objective 2.2: Network Analysis							
Develop methods plan for network analysis	Maria	⊗		⊙			Melissa notation: Completed by "end of summer" (Actual analysis not performed until year 2) Details (09/14): This is still in development, but it is still on track to be deployed in March, 2012.
Complete IRB	Maria - MI	*		⊙			Details (09/14): There is a blanket IRB, but individual instruments will need to be approved in future.
Objective 2.new: Climatologist Interviews							
Complete IRB	Lois	⊗		⊙			Details (09/14): This will be done by January once questions are developed.

Tasks/Deliverables	Who	On time or late?	Aug 15	Dec 15	April 15	After April 15	Notes
Design Interview Questions	Lois	⊗			⊙		<p>Melissa notation: Changed date completed by because modeled after producer and advisor survey questions, which won't be done until 12/15.</p> <p>Details (09/24): This is still waiting on the Producer Survey questions, from which interview questions will be developed. It probably won't be done until January.</p>
Conduct Interviews	IA grad student	⊗			⊙		<p>Details (09/24): Interviews will be done after the questions are developed.</p>