Evaluating the Effectiveness of Decision Support Tools, Training Methods and Implementation Approaches for the Useful to Usable (U2U) Project

Melissa Widhalm[1] and Linda Prokopy[1]

[1]Purdue University

November 24, 2022

Abstract

Useful to Usable (U2U) was a 6-year USDA-funded research and extension project focused on improving the uptake of climate information by Midwestern U.S. farmers and agricultural advisors. Led by Purdue University, this interdisciplinary team from nine Midwestern universities developed five web-based decision support tools to examine production, financial, and environmental outcomes of different climate scenarios and management options. A dedicated team of Extension educators, marketing specialists, and program evaluators worked together to promote U2U products and collect, analyze, and communicate data to 1) help increase project impact and 2) to measure outcomes for accountability purposes. Since outreach began in July 2013, farmers and advisors have been reached at 165 outreach events and training sessions in ten Midwestern states and at least 6 regional webinars have been conducted. A four-round mailed and electronic marketing campaign reached an estimated 35,600 people from March 2015 – November 2016. Additionally, the team developed a variety of educational materials (user guides, fact sheets, presentations, etc.) to support U2U outreach and dissemination efforts. Throughout 2016-2017, the team evaluated the outcomes, impacts, and overall reach of the U2U project over the 6-year project duration. They conducted two large-scale surveys with farmers and agricultural advisors, conducted personal interviews with advisors in Iowa and Nebraska, gathered informal success stories from U2U team members and collaborators, and tracked website traffic using Google Analytics. This presentation will highlight the project's evaluation design, results, and lessons learned, including evaluation of outreach and dissemination approaches and longer-term outcome/impact evaluation. Some key metrics include the likelihood of using U2U online tools, actual use of tools, use of tools to aid financial and environmental decisions, and willingness to consider climate information in the future (not limited to U2U tools).

PA23C-1173

Evaluating Decision Tools, Outreach, and Outcomes for the U2U Project

AUTHORS

Melissa Widhalm, mwidhalm@purdue.edu
Purdue Climate Change Research Center

Linda Prokopy, lprokopy@purdue.edu
Purdue University, Forestry & Natural Resources

SPECIAL THANKS
University of Wisconsin Environmental Resources Center, evaluation unit: Jenna Klink, Emily McKinney, Kim Kies, Vikram Koundinya, Courtney Robinson, Greta Landis, Amber Saylor Mase.

PURDUE UNIVERSITY | Purdue Climate Change Research Center
DISCOVERY PARK

THE PROJECT

U2U useful to usable

AgClimate4U.org

U2U incorporates climate data into useful tools to help farmers and advisors make informed decisions

GOAL:
Improve the resilience and profitability of farms amid a changing climate

DETAILS:
- 6-year, $5 million U.S. Department of Agriculture grant
- 12-state, interdisciplinary team
- More than 50 team members from 9 universities, two Regional Climate Centers and the National Drought Mitigation Center
- Creating, promoting & evaluating online decision support tools for farmers and farm advisors

TOOL DEVELOPMENT

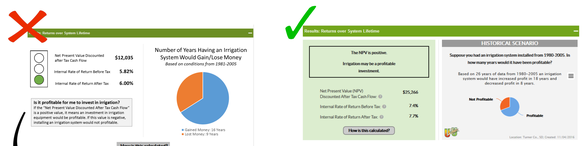
EVALUATION QUESTION:
How might the tool need to be updated to ensure usability?

EVALUATION METHOD:

UserTesting.com

BENEFITS:
- Watch 10-15 minute videos of participants using your site. Hear them describe where they get stuck or confused. See what distracts or draws their attention.
- Testers are paid, screening questions find target audience
- Tasks are customized, feedback within 1 hour

TIP:
- Best suited for page layout, site navigation, locating key content, first impressions of trustworthiness and likability



Testers hated the stoplight, didn't notice right side was a historical analysis

TOOL OUTREACH

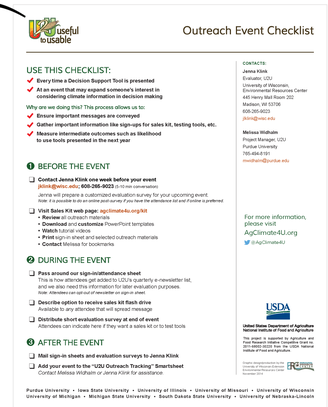
165 in-person outreach events with farmers and advisors from July 2013 to June 2016

EVALUATION QUESTION:
What are immediate intentions of audience?
How can we improve our future outreach?
Who wants more information?

EVALUATION METHOD:
- Post-event surveys, customized for each event's content and audience, conducted at 32 events (n=882)
- Monitor Google Analytics

Outreach event check list ensured consistency.

Post-event team debriefings allowed for real-time tool adjustments, development of new outreach materials.



MARKETING CAMPAIGN

Mail and email promotional materials sent to target lists via media buying company, reached 35,560 people

EVALUATION QUESTION:
How effective was our campaign?
Is a multimedia approach worth the money?

EVALUATION METHOD:
- Monitor Google Analytics after send-outs
- Email open rates and click rates
- Include survey with final mailed campaign

48% of those on the campaign email list opened at least one campaign email.

11% clicked on a link to explore project tools.

Generally, web traffic during campaign periods was **2-3 times greater** than non-campaign periods.

Nearly 40% of respondents to the final campaign survey did not continue to explore the website and find other tools when they looked at the advertised tool online, supporting the decision to market each tool individually.

OUTCOME EVALUATION

EVALUATION QUESTION:
What, if any, difference did our tools make?

EVALUATION METHOD:
End-of-project survey with farmers and agricultural advisors to measure perceptions and attitudes about weather and climate, awareness of U2U project, and use of U2U tools.

1. Paper Survey with Farmers
- Random sample of landowners across 12-state Midwestern U.S. region, with oversampling in Illinois, Indiana, Iowa, Nebraska
- 2,633 responses (2,166 in 4-state area), 39% response rate. 1,536 respondents (1,224 in 4-state area) were farmers
- **Results shown are only for the 4-state area**

2. Online Survey with Advisors
- Surveyed nearly all advisors across 12-state region, including Extension staff, Certified Crop Advisors, conservation staff, Technical Service Providers, and others
- 3,098 responses, 25% response rate. 2,719 respondents advised farmers

PROJECT OUTCOMES

EDUCATIONAL

GOALS:
- ✓ Awareness of climate risks & U2U tools
- ✓ Know how and when to use U2U tools

75% of advisors and 65% of farmers are moderately to very **concerned about weather or climate impacting farm management** in their area.

35% of advisors and 34% of farmers had **heard of at least one U2U tool** before the survey.

73% of advisors said the U2U tools are **moderately to very usable** (of those who used at least one tool).

ACTIONS

GOALS:
- ✓ Use U2U tools, apply to decisions
- ✓ Advisors improve decision making

33% of advisors and 34% of farmers who heard about the U2U tools **used at least one U2U tool** in their advising and/or decision making.

Advisors mostly used U2U tools for advising about seed purchases, crop choice and fertilizer application timing.

Farmers mostly used the U2U tools for decisions around harvesting, planting and irrigation scheduling.

41% of advisors indicated they have **given better quality advice** after using U2U tools.

VISION

GOALS:
- ✓ Farmers improve decision making
- ✓ Purposively use climate information

79% of advisors and 59% of farmers are **willing to use decision support tools** with weather or climate information to inform their work

52% of advisors and 44% of farmers who used U2U tools said their likelihood of using weather or climate information **has increased** due to the U2U project.

71% of advisors and 44% of farmers **would recommend at least one U2U tool to others**.

As of late 2016, U2U tools have supported decisions on **over 15.5 million acres** in the Midwestern U.S.

This project was supported by the Agriculture and Food Research Initiative (AFRI Competitive Grant no. 2011-68002-30220 from the USDA National Institute of Food and Agriculture.