

Post-Its and Priorities: A Participatory Exercise for Understanding Perspectives of Diverse Stakeholders

Abstract

We describe a participatory co-learning exercise that can help elucidate and navigate the unique perspectives of farmers, researchers, Extension personnel, and other agricultural professionals engaged in managing complex systems. We developed the exercise to help a diverse advisory panel collaboratively identify and prioritize ecosystem services for measurement in an experiment on cover crop mixtures. Post-event evaluations were positive and suggest that the exercise is a useful tool for participatory research projects or Extension programs involving a diverse group of stakeholders and complex systems.

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Introduction: Managing Complexity Through Participatory Co-Learning

Managing cropping systems for multiple economic, environmental, and social outcomes is complex, especially when stakeholders have different perspectives and priorities. Effective Extension programming and participatory research both depend on developing a common understanding of stakeholder views. Here we share a co-learning exercise that can help foster mutual understanding within diverse groups.

We developed the exercise to help achieve two goals:

1. Understand how diverse participants perceive and prioritize multiple aspects of an agricultural system.
2. Define research questions relevant to all stakeholders.

As indicated by positive participant evaluations and integration of results into research activities, the exercise is an effective tool that can be adapted to strengthen a wide range of participatory research and Extension programs.

Background

We implemented the exercise described here with an advisory panel for an interdisciplinary research and Extension project assessing the benefits, challenges, and tradeoffs associated with diverse cover crop mixtures. The advisory panel included farmers, Extension educators who lead farmer learning circles, other agricultural professionals involved with organic farming, and researchers. Advisory panels are an integral piece of many cropping systems projects (OREI, 2015), where they help identify and prioritize project objectives, define performance indicators, and identify educational needs to bridge the gap between research and implementation (Wortmann, 2005).

Diverse cover crops can be managed to provide a wide range of benefits relating to crop yield, soils, insects, and weeds, among others. Identifying which of these benefits are most important for research and Extension is a challenge. Our approach builds on a successful participatory learning exercise (Gareau, Smith, Barbercheck, & Mortensen, 2010) that assessed multiple cover crop benefits using "spider plots," which are a helpful tool for simultaneously representing how complex systems perform in multiple categories (Gomiero & Giampietro, 2001). We developed an exercise using affinity diagramming (Tague, 1995) to collectively identify and prioritize cover crop benefits, which later defined the categories of a project spider plot.

Methods

We implemented the exercise at an advisory panel meeting for our integrated project, *Finding the Right Mix: Multifunctional Cover Crop Mixtures for Organic Systems* (<http://agsci.psu.edu/organic/research-and-extension/cover-crop-cocktails>). For this exercise, the Extension educators and agricultural professionals were grouped together under the heading "Extension/outreach." Farmers and researchers constituted their own groups.

Our objectives were to:

1. Define the key beneficial ecosystem services provided by cover crop mixtures,
2. Rank the services, and
3. Display and discuss differences among the participating groups' rankings.

We asked each participant to identify three-five key ecosystem services, or benefits to the farm and the surrounding environment, that they wanted from their cover crop and to write them on Post-it notes. Participants placed the notes on a wall, grouping them in categories of like ideas. The organizers led a discussion to develop these categories into a concise list of services. Finally, participants ranked these services by placing colored stickers on large sheets of paper posted around the room. There were no limits on how the dots were allocated to the services. Ranking results were tabulated and presented to the participants using PowerPoint slides.

We tracked which group had proposed which ideas and how the different groups ranked the resulting services by color-coding the notes and stickers by group. Notes and stickers were divided evenly among these three categories to allow direct comparisons of vote totals. A detailed instructional guide

is available at <http://agsci.psu.edu/organic/academic-courses>.

Discussion

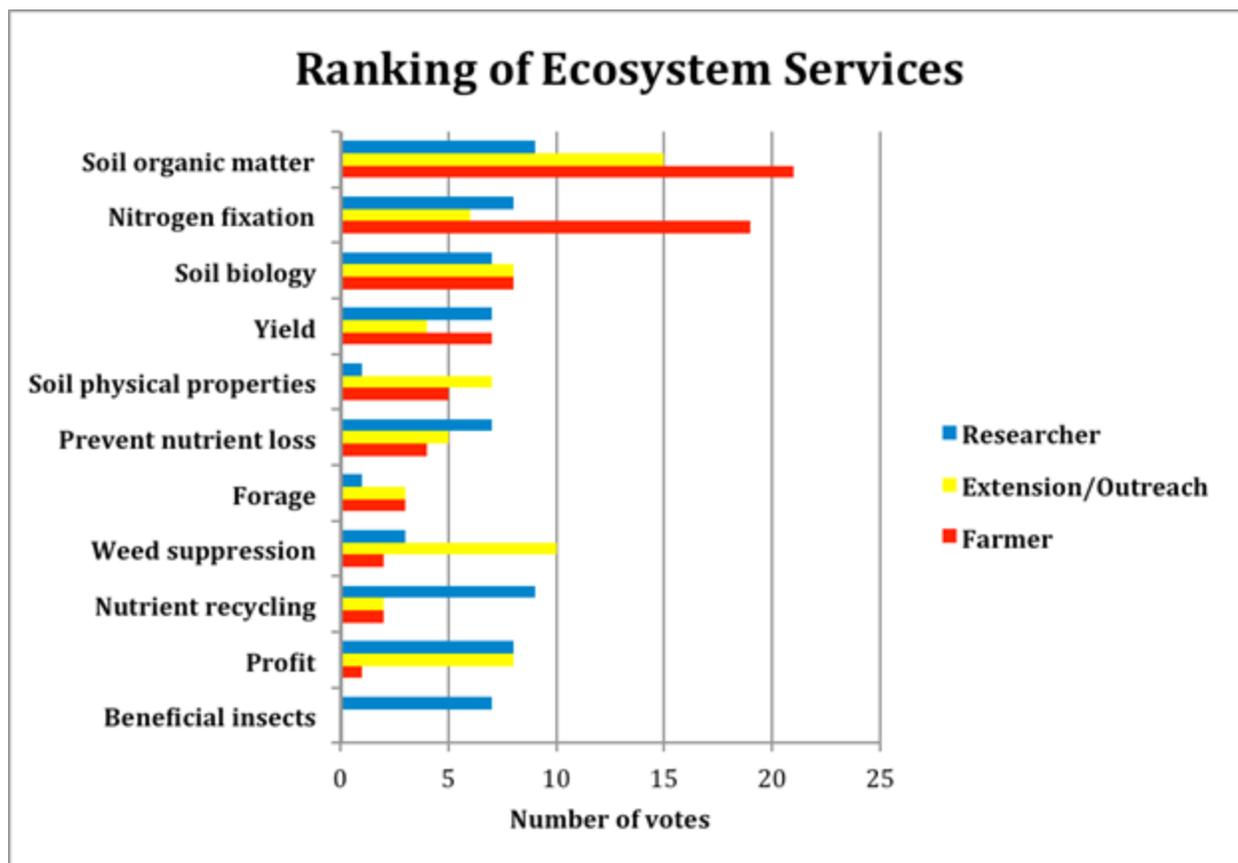
The exercise effectively engaged our diverse advisory panel members and helped reveal differences in how each group perceives cover crop benefits (Figure 1). The physical act of posting and arranging the notes drew participants to engage with and refine the evolving categories. For example, the farmer members argued for maintaining two distinct categories related to nitrogen: "nitrogen fixation" and "nutrient recycling." If we had used researcher-defined categories, this distinction might have been lost.

Discussion focused on soil properties and nitrogen fixation, which were areas of general voting alignment. Areas of contrast arose in prioritizing nutrient recycling and retention, weed suppression, profit, and beneficial insects. Interestingly, farmers ranked profit quite low. When this came up in discussion, one farmer participant commented: "If you take care of everything else, profit takes care of itself." The exercise showed potential to help participants see beyond their own discipline and consider the system as a whole. For example, there were few votes cast for the service of weed suppression, despite the participation of several weed scientists.

In our research context, the exercise helped to complement academically driven research questions with farmer-driven questions. Each group's identification and ranking of ecosystem services allowed us to develop a clear hierarchy of participant priorities. Of our participants (n=20), 70% agreed "quite a bit" or "a lot" that the group correctly identified the most important ecosystem services, and 90% agreed "quite a bit" or "a lot" that the group correctly ranked the most important ecosystem services. Furthermore, 90% of participants thought the exercise helped "quite a bit" or "a lot" to improve how farmers, researchers, and Extension/outreach personnel understand each other's priorities.

Figure 1.

Ranking of Ecosystem Services Desired from Cover Crops (ranked highest to lowest by number of farmer votes)



Conclusions

The approach has special application to participatory efforts that seek to identify and assess multiple outcomes in agroecosystems. The exercise has the potential to help meet the widespread desire for "hands-on," participatory research and Extension (Franz, Piercy, Donaldson, Westbrook, and Richard, 2010; Barbercheck et al., 2009; Taylor, & Fransman, 2004) and to enhance Extension interactions with sustainable and organic farmers, a segment that presents unique challenges (Lillard, Parker, & Sundermeier, 2013; Parker & Lillard, 2013; Duram & Larson, 2001; Agung & Igodan, 2007).

We see this exercise as a constructive way to begin a co-learning process with a small-to-medium-sized group (15-45 people). For research, the ideal use would be at a pre-project advisory panel meeting, enabling researchers to match their questions to the stakeholders' interests. In the Extension context, the exercise could help launch an effort within a farmer learning circle or other long-term learning group. We expect that thoughtful use of the exercise can hone outreach efforts and presentations of findings and facilitate collaborations among diverse participant groups to form useful and practical research questions.

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