Farmer Rancher Grant Program

Final Report Form

Please fill out the final report form and return it to the North Central Region-Sustainable Agriculture Research and Education (NCR-SARE) Missouri office. The report may be prepared on a computer or handwritten (please write or print clearly) but electronic reports are preferred. The final payment of your grant will be awarded when the final report and final budget report are received and approved.

Use as much space as needed to answer questions. You are not limited to the space on this form. The more details the better.

I. PROJECT IDENTIFICATION

- Name: Claire Strader
- Address: 1814 Sheridan Drive
- City, State, Zip Code: Madison, WI 53704

- Phone: 608-442-6760

- Project Title: **Developing Harvest Task Checklists to Assist Farmers in Managing Harvest Crews**
- Project Number: FNC08-712
- Project Duration: 2009 – 2010 (though information through 2012 is included in report)
- Date of Report: 2/5/13

II. PROJECT BACKGROUND

1. Briefly describe your operation (i.e. how many acres, what crops, types of cropping systems, type of livestock or dairy production, grazing systems, family operation, etc.)

Troy Community Farm is 5 acres of certified organic vegetables grown primarily for our 170 member CSA and secondarily for an on-site farm stand and wholesale accounts. We have been growing certified organic food on Madison's northside since 2001, and we are proud to be the city's first urban farm. Our production focus is on intensive hand-scale techniques that make the most of limited urban spaces. We also emphasize reduced fossil fuel inputs by growing starts in our passive solar greenhouse, cultivating only with wheel hoes and hand hoes, and using carefully managed cover crops, mulch, and crop rotations to improve soil productivity. In addition to growing over 50 types of vegetables, herbs, and sprouts, we also strive to grow future farmers though our internship, worker share, and volunteer programs.

2. Before receiving this grant, did you carry out any sustainable practices? If so, briefly describe what they were and how long you had been practicing them.

We have been certified organic from the start and have used the following sustainable practices as part of our organic crop management plan since 2001: crop rotation, cover crops (before and after cash crops, intercropped with cash crops, and as part of managed fallow), mulch, reduced tillage, beneficial insect habitat (in the field and also in an adjacent restored prairie).

III. PROJECT DESCRIPTION

This is the core of the report. Consider what questions your neighbors or other farmers or ranchers would ask about what you did with this grant. Describe how you planned and conducted your research or education activities to meet your project goals and discuss the results.

GOALS

List your project goal(s) as identified in your grant application.

One of the most significant challenges at Troy is training and managing a large and diverse workforce of interns, worker shares, and volunteers. Given our urban location, many people of all ages and abilities have easy access to the farm and are attracted to it as a place to learn about food and food production. From the beginning we have prioritized education as part of what we do. However, the farm and its workforce must be efficient and productive in order to make ends meet. I have found that even with training and clear instruction, it is difficult to insure that harvest tasks, in particular, are done efficiently and produce a consistent product. Because we want to provide an educational and interesting experience for our workers, not everyone does the same tasks week after week and workers can easily forget important details of the jobs.

The goal of this project was to develop 10 harvest task sheets as tools to reinforce training and instruction on specific harvest tasks so that farm workers can work more independently and produce a more consistent finished harvest product.

PROCESS

Describe the steps involved in conducting the project and the logic behind the choices you made. Please be specific so that other farmers and ranchers can consider what would apply to their operations and gain from your experience.

- Determined priority crops that harvest crews would likely harvest multiple times throughout the season, and chose 10 crops to develop into task sheets.
- Created draft task sheets for each crop, including tools needed, field harvest procedures, and wash shed cleaning and packing procedures.
- Printed, trialed, and revised task sheets for each crop, making changes based on farmer and harvest crew feedback.
- Explored quantitative measures that would be useful to collect to evaluate the effectiveness of the harvest checklists and trialed several questionnaires with harvest crews.

- Printed and laminated all final task sheets, so they could be easily used in the field and trained the harvest crew to use harvest task sheets. Final task sheets are attached.
- Collected data on amount of time taken to complete task, on confidence level of harvest crew, and farmer satisfaction of final product for harvest crews that had the harvest task sheets as a reference (Wednesday harvest crews) and harvest crews that *did not* have harvest checklist as a reference (Friday harvest crews).

PEOPLE
List farmers, ranchers, or business people who assisted with the project and explain how they were involved. List any personnel from a public agency, such as the Extension Service, Natural Resources Conservation Services or Soil and Water Conservation Districts who assisted with this project. List people from non-profit organizations who helped you.

Gini Knight (Troy Farm Intern, 2009) – assisted with the development of the task sheets, collected and compiled data in 2009.

Claire Strader – collected and complied data in 2010, currently developing task lists for additional crops, and drafting a more comprehensive harvest guidebook for all crops.

Troy Farm Interns, Worker Shares, and Volunteers – assisted with the development of the task sheets and helped to test them in the field.

Tricia Bross (Luna Circle Farm) – reviewed task sheets, but did not end up using or testing them on her farm due to lack of time.

RESULTS
What results did you achieve and how were they measured? For production projects, include yields, field analysis, and related data. How do these compare with conventional systems used previously? For education projects, include outcomes achieved and how you measured them through surveys, attendance, or other methods. Were these results what you expected? If not, why not? What would you do differently next time?

Overall Results
In the end and based mostly on our own feelings about using the task sheets in years beyond when we were collecting data, we decided that we benefit from them.

In addition to producing quality products, we are also committed to providing a solid education for our 12 to 14 interns each year. Part of that education includes the opportunity for interns to instruct and supervise crews in the field. First they learn a task, then they practice it, and finally they teach it. Using the task sheets both as a tool for instructing interns and as a prompt for them when they teach others turned out to be very valuable for us. Having a written reference in the hands of the crew leaders helped them to make sure the covered every step and also prompted them to ask questions when something was unclear. Given that our interns rotate to new tasks over the course of the season, the task sheets also helped to keep us as farmers on track when training new crew leaders later in the season.

Though we did come to value the task sheets, it did take us a few seasons to really get in the habit of using them. In 2010 we were still training ourselves to use the task sheets and often enough forgot or chose not to use them in the heat of the harvest. In 2012 we did use them consistently (though we were no longer collecting data at that time), and heard from our interns that they found them to be valuable tools. We have also found some flaws with the task sheets as we designed them, namely that they are too wordy to be real checklists. We are currently writing task sheets for all of our harvest crops, which we will compile into a harvest book. When that is done, we will refine the task sheets into leaner checklists to be laminated for use in the field. Our plan is the use the harvest book for initial training and then to send the checklists to the field with crew leaders who have already demonstrated proficiency on a particular harvest task.

Specific Results

We tracked three measures to determine the effectiveness of the harvest task sheets: worker confidence with the task, farmer satisfaction with the task, and the time each task took either with or without the aid of the task sheets.

Worker Confidence Levels

As an important measure of the usefulness of the task sheets, we wanted to know if the crew felt they could answer their own questions and act independently while harvesting. Greater crew confidence and fewer follow up questions for the farmer should increase efficiency.

After completing the harvest tasks, workers were asked to select one of the three options: 1) Very Confident in completing the task, 2) Somewhat Confident in completing the task – had to ask a question, 3) Not confident – unclear with how to complete some of the tasks, and had to ask farmer several questions. The table below shows that crew members were only slightly more confident when using the task sheets, and that in general their confidence on harvest tasks was high.

Harvest Crew Confidence Levels
2009 & 2010

Harvest Day	% **Very Confident**	% **Somewhat Confident**	% **Not Confident**	
W (n=83)	66%	34%	-	with checklists (Wednesday)
F (n=28)	64%	29%	7%	without checklists (Friday)

In 2010 we also added two questions that the farmer recorded answers to at the end of each task. 1) Did the workers on the crew have idol time without a task? 2) Did crew members take extra trips to the shed for forgotten equipment? In all cases, with and without the aid of the task sheets, the answers to both questions was "no," indicating that the task sheets made no difference in these two aspects of harvest efficiency.

Farmer Satisfaction

We hoped that use of the task sheets would increase the quality of the final harvest products, meaning that the final products were more consistent in terms of size, cleanliness, aesthetic, and other quality standards as set by the farmer.

After the final product was completed, the farmer was asked to select one of the following options: 1) Very satisfied with final product, 2) Satisfied, or 3) Not satisfied. The table below shows that the farmer was somewhat more satisfied with the final product when the crew had the assistance of the task sheets.

Farmer Satisfaction Levels with Final Product
2009 & 2010

Harvest Day	**Very Satisfied** with final product	**Satisfied**	**Not Satisfied** with final product	
W (n=23)	52%	48%	-	with checklists (Wednesday)
F (n=7)	43%	57%	-	without checklists (Friday)

In 2010 we added two questions that the farmer recorded answers to an the end of each task with notes about what went wrong in the case of any "no" answers.

1) Was the crop properly harvested?
In one out of a total of 12 harvests, the farmer indicated that the crop was not harvested properly. This one case was a summer squash harvest where the crew was not using a task sheet and harvested an old diseased squash bed before harvesting the younger disease-free bed. The task sheet clearly states to harvest younger beds first to prevent the spread of disease.

2) Did the final product meet quality standards?
In two out of 14 harvests, the farmer indicated that the final product did not meet quality standards. In both cases the crew was not using the task sheets. In the first case, summer squash was packed improperly into multiple partial cases. In the second case, scallion bunches were too small and dirty and had to be redone. In both cases, using the task sheets could have at least prompted the crew to check in with the farmer for more instruction before completing the tasks inaccurately

Timed Harvest Results

In the end we were unable to determine if harvest tasks were faster or slower with the use of the task sheets. We were unable to collect sufficient data on this question for two reasons: fluctuating crew composition on any particular task and a much reduced number of Friday harvests do to a change in marketing.

Fluctuating Crew Composition. We have anywhere from 8 to 15 people in the field at a time and need to make sure that everyone is doing something useful at all times. As a result, the number of workers in a harvest crew often fluctuates from start to finish. When a task is nearing completion, some crew members will move on to other tasks and let a smaller team actually finish the job. Likewise, crew members may join tasks already in progress when those tasks are going slowly or when they have completed their other work. In the end, it was very difficult to get accurate numbers on how much time each person actually worked on each task.

Reduced Friday Harvests. We changed our marketing practices somewhat in 2010 and dropped

our weekend farmers' market. As a result, many crops that we were originally expecting to harvest on both Wednesdays (with the task sheets for CSA) and Fridays (without the task sheets for farmers' market) were not actually harvested on Fridays. Without times for both Wednesday and Friday by crop, we were not able to measure timed differences with and without the task sheets. Though this issue also came up with the data for worker confidence and farmer satisfaction above, as evidenced in the much higher number of trials for Wednesdays, those two measures were not dependant on comparing exactly crop to crop and we were able to combine the data for all crops.

DISCUSSION

What did you learn from this grant? How has this affected your farm or ranch operation? Did you overcome your identified barrier, and if so, how? What are the advantages and disadvantages of implementing a project such as yours? If asked for more information or a recommendation concerning what you examined in this project, what would you tell other farmers or ranchers?

One of the most important things we learned is how hard it is to take timed data by crop during a busy harvest season. If given the opportunity to do this work again and in a different way, we would focus more on simple yes or no questions to be answered at the end of a harvest and/or on pre- and post-evaluations of workers using and not using the task sheets.

Though in the end our data was only somewhat supportive of the value of using our harvest task sheets, we continued to use them in 2011 and 2012. It took time for us to get in the habit of using them because they do require more upfront time in the training process. As noted in the results section, part of the problem is that the current task sheets are too wordy. Our goal is to refine the existing task sheets into real checklists for use in the field, which retaining them in their current format to include in a more comprehensive harvest manual.

IV. PROJECT IMPACTS

Evaluate the economic, environmental and social impacts of this sustainable practice by completing the Benefits and Impacts form. Also, if possible, provide hard economic data.

V. OUTREACH

What methods did you use for telling others about: 1. Your project, 2. Project events or activities, 3. Project results? How and to whom did you communicate this information? Be sure to include details on how many people attended field days or demonstrations, and how information was further disseminated by media covering any events. What plans do you have for further communicating your results? Include press releases, news clippings, flyers, brochures, or publications developed during this project. Also include photos which might be helpful in telling your story to others. (Mail items separately if you cannot send them electronically.)

FairShare CSA Coalition Farmer Info Sheet

The FairShare CSA Coalition is a group of over 50 CSA farms in the Midwest. The FairShare

Grower Education Committee is compiling a set of "info sheets" covering a wide range of topics ranging from tools to processes. These info sheets can be accessed by anyone but are specifically designed for CSA farmers wanting to improve their systems. The info sheets are currently advertised to collation members. Eventually they will be distributed more broadly.
Link to all info sheets on the FairShare website:
http://www.csacoalition.org/resources/growers/infosheets/
Link to the Troy Harvest Task Sheet Info Sheet on the FairShare website:
http://www.csacoalition.org/wp-content/media/pdfs/Troy-Harvest-Task-Sheets.pdf

2012 Midwest Value Added Agriculture Conference
13 December 2012, LaCrosse, WI
Presentation on "Using Harvest Task Sheets To Manage Farm Crews." Presented to 15 participants on how to develop and use the task sheets, including a handout with sample task sheets for three crops.

Troy Community Farm Internship Program
2009 – current
Our farm interns helped to develop and also use the task sheets at our farm each year. As of 2012, 50 interns on our farm have used the task sheets and have access to the templates for use in their own future farming endeavors.

VI. PROGRAM EVALUATION
This was the nineteenth year the North Central Region SARE Program sponsored a farmer rancher grant program. As a participant, do you have any recommendations to the regional Administrative Council about this program? Is there anything you would like to see changed? Please fill out the Evaluation form.

VII. BUDGET SUMMARY
Complete the final budget form and return it with your report. You will only be reimbursed for expenses incurred and items purchased for conducting your project. If you made significant changes (more than 10% of your grant total) to final expenses listed by budget category, please include an explanation for the changes. Call Joan Benjamin with questions at: 573-681-5545.

Submit your final report to:

E-mail: BenjaminJ@lincolnu.edu or mail to:

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