Guide to Submitting a Proposal

Research and Education Grants
2012 funding year

Contents

The basics

This guide to Northeast SARE's Research and Education Grant is primarily for people who have submitted a preproposal and have been notified by SARE that they can proceed to a full proposal. The goal is to describe the components of a full proposal, and also to expand on and illustrate some key principles of outcome funding. This document may also be of general interest to people planning a future preproposal and for anyone interested in the focus and content of this grant program.

Research and Education grants and outcome funding

Northeast SARE seeks to fund Research and Education projects that result in farmers using knowledge and skills gained during the project to make verifiable changes that lead to greater sustainability. Two types of projects are funded—those with a research component and those without. A research component—a field or laboratory experiment—is not a requirement, but all projects must contain an educational program for farmers. Both project types—with and without a research component—are acceptable, as long as the goal of the project is for farmers to take action to improve the sustainability of their farms.

To make sure that projects yield verifiable results, Northeast SARE uses an outcome funding approach to grant selection and project management. This approach focuses on helping the project participants make measurable changes, or take measurable actions, and achieve measurable benefits. This approach also shapes the way an application is written, reviewed, and carried out. To succeed, applicants must understand how to use an outcome-based approach for their projects.

Outcome funding is useful for both the grantor and the grantee. For the grantor, outcome funding focuses efforts on obtaining a good return for the dollar invested; for the grantee it focuses on measurable results for the agricultural service providers participating in the project. Proposals are measured against an outcome statement that defines the results Northeast SARE is seeking. Northeast SARE's outcome statement is:

> **Agriculture in the Northeast will be diversified and profitable, providing healthful products to its customers; it will be conducted by farmers who manage resources wisely, are satisfied with their lifestyles, and have a positive influence on their communities and the environment.**

This statement summarizes the kinds of change that the Northeast SARE program is committed to, and it is used to evaluate the proposed project outcomes—the performance targets—submitted by applicants. For grant applicants, the key components needed to meet the requirement of the outcome funding approach include:

- Engagement of project **beneficiaries**, who participate in the project and accomplish specific, essential **milestones** in learning and skill development that prepare them to take specific actions described in the **performance target**;

- **Verification** of beneficiary progress in achieving milestones and accomplishing target outcomes; and

- **Key individuals** who will make the project successful.

Successful applicants demonstrate a good grasp of the clear and measurable actions their beneficiaries will take towards solving a problem and the measurable benefits that will result from the actions taken. These actions and benefits are the **outcomes** of the project, and they are defined in the performance target, which is the primary element in a SARE application. But outcomes by beneficiaries don't happen on their own, or overnight. Beneficiaries need to experience interim steps in learning, attitude, and other changes to achieve the actions described in the **performance target,** and these interim steps are described in the project's **milestones.** Other key components of the application include descriptions of the project **beneficiaries,** the **key individuals** who will lead these beneficiaries through the milestones, and the **verification plan** needed to measure the beneficiaries' progress during the project and the outcomes they achieve.

The key terms used in outcome funding are:

- **Beneficiaries—**these are the target audience, specifically the farmers who participate in the project and change in a specific, measurable way as a result of a project's research and educational efforts.
- **Performance target—**this is the outcome statement that defines the changes beneficiaries will make. For a Research and Education project these are the actions farmers will take to improve farm sustainability and the and the specific benefits that accrue from that adoption. The performance target is the end result that a project strives to achieve.
- **Milestones—**these are necessary, interim measures of learning, skill building, and preparation that beneficiaries must accomplish to achieve the performance target. Beneficiaries accomplish milestones as they participate in project activities and events.
- **Key individuals—**these are the people who will guide the project or contribute significantly to it.
- **Verification—**this is the process of asking questions and finding out whether the accomplishments of the beneficiaries happened as described in the milestones and the performance target.

Don't be discouraged by the terminology of outcome funding; it describes straightforward and logical concepts.

Elements in a strong proposal

Collaboration with farmers and other beneficiaries is a key to successful projects that have a lasting impact. The best way to ensure the adoption of practices that improve the sustainability of farms is to engage farmers in the planning and design of your proposal.

A strong application almost always involves **consultation with diverse interests**—land-grant universities, nonprofits, extension, farmers, agribusiness, and others—to assess the need for a project and to plan how to address that need. A strong application also demonstrates how project benefits will continue after SARE funding ends.

Research should be rigorous, statistically valid, and practical. It should focus on the applied aspects of agriculture rather than the theoretical.

Research results should be widely disseminated to farmers, farm advisers, educators, and other scientists, and applicants should be prepared to verify not just attendance at workshops and field days, but subsequent changes in farm practices as a result of the workshops and field days.

Strong projects tend to use **a variety of approaches for outreach and education**, from lectures to farm tours to study circles, depending on the project design. Approaches that combine direct interaction (meetings, workshops, etc.) with teaching tools (publications, web sites, etc.) are preferred over those that focus on one mode or the other.

Strong projects take a holistic approach. For example, pest management projects, while often targeted at an individual insect or disease, are strengthened by the adoption of a whole-farm approach that acknowledges the complexity of natural systems, and by connection to improved markets, better products, and other benefits.

Sustainability in agricultural production systems requires **profitability for farmers**. Successful projects develop skills, technologies, or markets that improve the producer's bottom line. Strong projects include clear financial analyses based on real-world data. In this vein, applicants also need to ask themselves what the costs are for farmers to adopt a new technique, both in time and money, and to dedicate project funds to minimizing farmer risk when appropriate.

Strong applications offer a **close fit between the project design—the activities and products developed—and the project outcome**. Make sure that the change in practices or conditions you seek have an obvious, compelling relationship with your efforts, and that you can later verify that those changes occurred because the project triggered or supported them.

Project verification must be integrated into the overall project design so that beneficiary information, feedback, and adoption of new practices are easily gathered and identified. Do not wait until the end of your project to verify your performance target. Instead, embed verification into your early milestones and continue it throughout so that it becomes integral to the project.

Clear, straightforward writing improves any application. Write for an audience that is generally knowledgeable but does not necessarily have a thorough or deep understanding of your area of expertise.

Size of awards

SARE's national budget, and thus Northeast SARE's budget, is determined annually by congress, and the number of 2012 grant awards will be contingent on the FY2012 appropriations.

Research and Education grants typically range from $30,000 to $250,000. Award amounts vary because some projects may seek to create relatively small amounts of change, and may therefore require a relatively small amount of funding; this is acceptable if the change is still meaningful and verifiable. Other projects seek substantial change that requires more research or outreach, and are more expensive. Reviewers pay close attention to the potential impact of a proposal and the size of its budget request.

Timeline

Online submission template opens: September 30, 2011
Online submission template closes: midnight, November 1
Postmark deadline for hard copy: November 16
Clarification questions: late November
Project selection: late February, 2012
Pre-award discussion with grantees: March and April
Contract period: May 2012 or later, to October 31, 2016 or earlier

Conflict of interest

Members of the Northeast SARE Administrative Council and their immediate family or business associates are not permitted to apply for or receive funding from SARE grants.

Members of proposal review teams are not permitted to discuss or vote on proposals that involve academic institutions they work for, organizations for which they serve as board member or adviser, former graduate student advisees, or close personal friends.

Planning with the end in mind

Research and Education projects benefit commercial farmers by making farm practices more sustainable. This is why Northeast SARE encourages the inclusion of farmers as co-learners and collaborators; including farmers helps researcher and farm service staff understand the problems farmers face and the best way to address them.

Before writing a proposal for a Research and Education project, it is essential to know:

- What social, economic, or environmental problem or opportunity your project aims to address for farmers, and what contributes to the problem or opportunity.
- What specific, measurable change or adoption of a practice by farmers will provide a credible, realistic and achievable solution to the problem. In other words, what do you want farmers to do as a result of the project?
- What potential benefits will occur for farmers from making this change, taking this action, or adopting this practice. In other words, what is the benefit that will motivate farmers to make the desired change?
- What obstacles or challenges to making the change will farmers face as they work to adopt the recommended solution? How will you address risks and barriers—real or perceived—through the outreach and education part of the project?

Once the answers to these questions are known, it's possible to design a Research and Education project that targets farmers and also supports a realistic performance target, develop logical milestones, and more easily recruit participants. Strong proposals will clearly and persuasively address these questions throughout the narrative and in all subsequent sections of the proposal.

What follows next is a detailed description and explanation of each component in a Research and Education proposal.

Cover page and project description

The first two pages of the full proposal are two forms that are generated automatically by the online proposal submission system. These forms are straightforward and self-explanatory. In the forms you will identify the project leader and institution, the collaborating institutions if any, the geographical area of the project, and the funds requested. These forms are normally completed at the end of the proposal writing process, when all your team members have been confirmed and the budget is complete.

Use the cover page to collect authorizing signatures. These pages and the entire proposal can be printed after the proposal is submitted so that the necessary signatures can be obtained. If you get to the end of the proposal writing process and there are places on the forms where it is still not clear what to do, contact the Northeast SARE office.

Be sure to allow enough time to get the correct authorizing signatures from your institution. Sponsored programs offices typically require several weeks to review proposals before signing off on them, and at some institutions this process takes even longer. Share drafts of the proposal and budget with the sponsored programs office before the submission deadline, because changes cannot be made in the submission system after the deadline and hard copies of the cover page and project description must be mailed to Northeast SARE within **two weeks** of the online proposal submission due date. If you notice an error after you submit, the only way to get a corrected proposal in the review system is for you to submit another proposal, **but that would still need to be done before the submission deadline**. If you do this, you would need to contact the SARE office to notify them that the earlier submission should be disregarded.

Changes to an approved preproposal

When writing a full proposal, applicants sometimes find there is a need for some minor revisions to the project title, performance target, milestones, key participants, or budget estimates since the preproposal was submitted and approved. This is expected—project ideas are often refined as key individuals and beneficiaries talk more specifically about the project design. Remember, though, that reviewers approved a particular project concept; they will not accept a full proposal that differs significantly in concept from the preproposal. Reviewers will have access to the original preproposal and the suggestions and comments sent from the preproposal review team, so please use the comments to improve your project.

Title

The project title should be clear, succinct, and capture the essence of the project's intent. Do not include unusual acronyms, jargon, or unnecessary words. Many search engines pick up on keywords in the title, so it should describe, briefly and appropriately, the primary focus of the project.

Abstract (400 words)

The abstract should serve as a stand-alone summary of the project. Include a brief description of the problem to be addressed and justification of need, the beneficiary audience, the proposed solution to the identified problem or need, and the approach for reaching or carrying out the solution. The abstract must also include the anticipated measurable outcomes that will result from the project, stated as the performance target. The abstract should not refer to subsequent parts of the proposal by saying things like, "This will be described further in the narrative."

Below is a sample abstract from a Research and Education project. Other examples will be included throughout the guide to help you appreciate that the outcome funding framework is more than just a format Northeast SARE imposes on applicants. Instead, it is a powerful tool for testing the solidity of your ideas by imposing a high degree of logic and order on them.

Comprehensive Training in Brassica Production

Brassica crops have high value for growers but also require intensive management due to relatively high insect and disease pressure and sensitivity to environmental conditions. Per-acre crop value of the XX acres of brassicas planted in Southern New England (2007 Ag Census) can be as high as $XX per acre, but pest-control costs can approach $XX per acre. In addition, there are risks to the environment, workers, and consumers from use of pesticides, especially some such as XXX, which are considered high-risk. This project will teach growers how to develop and apply comprehensive management plans for brassica crops to enable the growers to reduce the financial and environmental costs of pest and disease management, while still maintaining yields and profitability.

A core group of nine farmers, seven consultants, and three educators will guide the implementation of this project. They will have skills in disease and insect control, nutrient and water management, business planning, organic production, and marketing, and the core group will also include two land-grant university technicians. They will assist project leaders in compiling research and experiential information aimed at reducing losses from pest damage, improved fertility management, extended production season, reduced use of high-risk pesticides, effective use of low-risk pesticides and cultural pest controls, and more efficient integration of all practices into a profitable production system customized to their unique farm conditions.

Annual intensive winter meetings of this group will include identifying the practices growers will evaluate and how the practices will be evaluated, which is a crucial step to obtain engagement of the growers by discussing the scientific validity and ease of implementing different designs of on-farm trials. New practices will be assessed over two growing seasons. Production questions identified by the growers about new management options will simultaneously be studied in replicated experiments on research farms. Outreach will include field days on core farms and a Brassica School will reach an additional 75 growers. Evaluation of outcomes will be done through detailed records kept by the core participants and through follow-up surveys with producers who attend the Brassica School and field days.

Thirty vegetables farmers will implement at least three new management practices on a total of 300 acres of Brassica crops, reducing pesticide costs by an average of $100 per acre and eliminating an average of two applications per year of restricted-use materials, while increasing average net returns by $500 per acre.

The strength of this abstract is that it is specific and informative, it describes the core group involved, and the research, outreach, and educational components are targeted in a coherent way to a group of farmers who will likely be receptive. The abstract also conveys that the project has the

necessary management needed to succeed. It's a plus that the core group of farmers will be involved in identifying the production questions, which will then be evaluated on a research station —this implies that the amount of interactivity between the beneficiaries and the project staff is high.

Research and Education grants may include secondary beneficiaries such as students, tourism professionals, wholesale food buyers, plant breeders, etc., but these secondary beneficiaries should not be the focus of beneficiary profiles. Instead, these secondary beneficiaries should be mentioned in your proposal narrative.

Project narrative (2000 words)

The project narrative consists of four subsections. It should not exceed 2000 words. The subsections are:

1. Problem description
2. Solution and benefits
3. Beneficiaries
4. Project approach

These sections, when complete, should guide reviewers through a logical and well-justified explanation of the problem the project will address, the beneficiaries who are affected by the problem and interested in working to solve it, the proposed solution, and the project's approach for reaching or progressing towards the solution. The narrative should put the project in a meaningful context, and offer data and literature citations that support and justify statements made about the extent of the problem, its significance to the beneficiaries, the credibility of the solution, potential benefits that may accrue from it, and the beneficiaries' desire to participate in the project to accomplish the solution. Each of the narrative sections is described in more detail below.

1. Problem description

In this section, describe the problem and the harm, adverse effect, or missed opportunity caused by the problem. A description of the problem and its context for the project should include:

- A clear, concise explanation of the problem and the cause(s) or hypothesized cause(s) for the problem

- Where the problem occurs, what type of agriculture is affected, and any relevant information such as the number of farms, their ranges of sales or net income, acreage, herd size, or number of employees

- Specific evidence about the quantity and value of agriculture affected in acres or dollars, the cost to the environment, or the impact on the social fabric of farm families or farm communities.

Please provide numerical information to justify claims. Sources of justification may include literature citations, farmer surveys, extension surveys, census data, or other sources. Below is an example problem description for a project with a research component.

Cover crops offer many potential benefits in vegetable production systems including reducing erosion, adding organic matter that improves soil structure and water holding capacity, weed suppression, recycling or capture of excess nutrients, and supplying symbiotically fixed N to subsequent crops, in the case of legume cover crops (2, 4). Despite these well-known potential benefits, the wide range of cover crop species available, and significant investments by Cooperative Extension, NRCS, SARE, and others to promote adoption, the use of cover crops by the 3,000 vegetable farmers in New England, who produce vegetables on 40,000 acres of farmland, remains limited (4, 7, 8).

A 2009 survey (5) of 400 vegetable farmers in northern and southern New England revealed a complex mixture of high awareness about cover crop benefits, high value placed on some potential benefits, lack of knowledge about appropriate cover crops and cover cropping strategies, and underuse of cover crops by farmers. Only 10 percent of the 240 respondents reported using cover crops routinely on their farms and only 20 percent of the farmers indicated that they felt confident or very confident to determine appropriate cover crop choices for their farms. Seventy percent of the respondents were aware of the benefits from cover crops, but they did not believe cover crops were feasible for their operations, given their complex cropping patterns and rotations; however, when asked to rate the value they would place on various cover crop benefits for their farms—benefits such as weed suppression, erosion control, addition of organic matter, addition of nitrogen by legumes—80 percent of the 240 farmers rated the ability of legume crops to provide fixed nitrogen for crop use as a high- or very high-value benefit. Adding organic matter was similarly high, with 77 percent of respondents rating that benefit highly, and 70 percent rated weed suppression as a valuable benefit. Seventy five percent of the farmers indicated an interest in learning more about how to select a cover crop and integrate cover crops into their vegetable production system.

2. Solution and benefits

This section should describe:

- The solution to the problem
- The benefits expected to farmers from solving the problem
- Known or anticipated obstacles or challenges to be addressed to encourage farmer adoption of the recommended solution

Provide evidence for how and why the solution will be effective and beneficial. The justification for claims made about the proposed solution, efficacy, and benefits may include literature citations, work of others, farmer surveys, extension surveys, census data, or comparable sources.

For projects with research, the solution may be two-pronged—research about a promising new technique, practice, or tool, and education about existing beneficial practices that are proven effective yet are underused in addressing the problem or concern. Projects without a field or laboratory research component may rely on education and outreach about proven beneficial techniques and demonstration of these techniques with collaborating farmers.

Below is example of solution-and-benefits text for the problem described above:

This project will engage New England vegetable farmers in an education program about cover crops and cover-cropping innovations that will emphasize the multiple functions of cover crops valuable to farmers and on-farm research trials investigating new and traditional legume cover crops along with cover-cropping innovations. The education and research components will address the top management constraints to cover crop usage such as timing of seeding, establishment, mowing, and killing and rotations.

New legume cover crops have been chosen as the focus of the project's research component because there are several new, or new to the region, legume cover crops, including mammoth clover, Canada field pea, and cow peas that have shown promise in filling specific niches or timeframes in vegetable crop rotations (4, 6). The green manure aspect of leguminous cover crops is also potentially of great value to vegetable farmers, especially organic producers, because commercial organic sources of N are costly and application of manure-based composts in the amounts necessary to supply adequate nitrogen for optimum crop yields can result in excessive amounts of phosphorus accumulating in the soil, often in as short a time span as one or two compost applications (12). Leguminous cover crops can provide up to 120 lbs N/acre to the crops that follow them, depending on stand quality and whether the legume is incorporated into the soil or surface-killed (4, 6). This green manure benefit can provide nitrogen fertilizer cost savings of $60/acre at $0.50 per lb N to farmers.

In addition to the study of legume cover crop species, the research and education program will include other cover cropping innovations such as the use of legume and non-legume cover crop mixtures, no-herbicide and no-till cover crop termination, cover crop interseeding, precision planting, and crop rotations that increase cover crop opportunities.

3. Beneficiaries

In this section, describe the number and type of farmers you will engage as participants in the project. Describe their interest in trying to solve the problem and their willingness to work with the project leaders towards a solution. These interested farmers who are willing to participate in the project are the project's beneficiaries. Data from surveys you conducted, or were conducted by others, should demonstrate an interest by farmers or service providers in solving the problem, and should also show reviewers you have a realistic, interested beneficiary audience.

After describing the beneficiaries in general, provide two brief profiles of typical or example primary, farmer beneficiaries. These profiles can be based on real individuals or they can be composites, but please do not use real names. The goal is to give the reviewers a feel for the range and types of farmers who will engage with the project and why they would want or need this project.

Farmers are the primary beneficiaries for Research and Education grants; however, grant projects may include secondary beneficiaries such as students, tourism professionals, wholesale food buyers, plant breeders, or others. These secondary beneficiaries may also be mentioned in this section of the narrative.

An example beneficiary description and two beneficiary profiles are provided below:

The primary beneficiaries will be 50 commercial vegetable farmers in Connecticut, Massachusetts, Rhode Island, and Vermont who operate farms of all sizes, from five to 500 acres, as the benefits of cover cropping apply to farms of all scales, and most of the technology employed will be relatively scale-neutral. Interest in cover crop education among the region's vegetable farmers is high, as evidenced by a 2009 survey of 400 vegetable farmers, which included farms of all sizes. One hundred eighty-eight (or 75 percent) of the 240 farmers who responded expressed an interest in learning more about cover crops and how to integrate cover crops into their vegetable production systems.

David operates a 140-acre diversified vegetable farm. He is conscious of the compaction that results from his frequent tillage operation and is aware of how cover crops could improve his soil health and condition. Although not an organic grower, David strives to use only the amounts of fertilizer and pest control chemicals necessary. Finding a legume cover crop, or crops, that could reduce his nitrogen fertilizer usage and at the same time improve his soil condition would be a win-win scenario for David, but he is not sure of what cover crop species to try and what is the best time and place to introduce a cover crop into his rotations.

Sarah is a small-scale organic vegetable grower who makes her living from her six-acre farm. She has limited access to manure-based composts for providing nitrogen and is also aware of the concerns about over-applying phosphorus via compost. She is very interested in reducing her organic nitrogen fertilizer costs, and incorporating a legume cover crop to provide nitrogen is an attractive strategy for her. But Sarah's land base is limited and she cannot afford to have long fallow periods in her production fields. Sarah is interested in testing some new legume species that might fill niches in her rotations and allow her to take advantage of their benefits.

4. Project approach

This section provides a synopsis of the research and the educational approach being proposed to mitigate or solve the problem described above with the defined group of beneficiaries. The approach must lead to realistic changes by farmers, and the approach must be one they will accept. The approach should also describe the key steps in an educational program or research effort that logically leads to realization of the performance target (next section).

For all projects, the project approach section will include a summary of the education program proposed for the beneficiaries. Reviewers must be able to follow and understand the curriculum and planned approach for teaching beneficiaries and preparing them to change their action as described in the performance target.

Include in the plan:

- Steps for recruiting and enrolling participants

- The specific topics in the curriculum that will be addressed educationally to solve the problem. Describe what new knowledge, skills, beliefs, and intentions about solving the problem farmers will acquire through participation in the education as they progress through the project milestones.

- An explanation about how research findings, both from the literature and from research to be performed in this project, will be integrated into the education program.

- The proposed delivery methods and the types of activities where learning will occur—workshops, field day demonstrations, webinars, participatory meetings, etc.—and the general sequence for learning

- Methods for supporting beneficiaries as they learn and build skills, and afterwards as they take actions described in the performance target. For example, providing one-on-one support after training sessions by phone, e-mail, or in-person visit; tools and templates for participants' recordkeeping; or fact sheets, videos or other instructive materials that explain the ideas or techniques covered by the education program.

For projects with a research component, this approach section will include a brief explanation of the hypothesis to be tested, proposed treatments, and research methods. A detailed research plan that more fully describes the treatments, experimental design, experimental unit size, data to be collected, measurement protocols, statistical methods, and other relevant features of the proposed research should be uploaded as a separate document (three-page maximum, in .pdf or .doc format) as an attachment in the online proposal submission system. Please title this attachment "Research_Component" so it can be identified easily. Note that any field experiments should be carried out in close cooperation with farmers.

Below is a sample approach for the cover crops project:

This project combines comprehensive education about cover crops and on-farm research trials to explore cover crop innovations. After gauging the current knowledge and practices of the vegetable farmer beneficiaries, the educational program will proceed with webinars that will bring all participants to a common level of cover crops knowledge and a common understanding of the project goals and planned learning opportunities. Farmers will be invited and encouraged to establish on-farm trials, with the support of the project team, and to test new and traditional cover crops and cover crop management strategies on their farms. Research trials will also be conducted at the university research farm. On-farm workshops held at the university farm trials and at key collaborating farmers' trials will give participants opportunities to learn results of experiments firsthand, see multiple cover crops in various cropping scenarios, and get a first impression of new species and practices.

The project team will work closely with the farmers conducting trials, providing technical assistance for treatment layout, species selection, crop rotations, establishment times and techniques, fertilization and seeding rates, and schedules, methods, and equipment for cover crop termination. Farmers will receive recordkeeping templates and the project team will assist in data collection and yield measurements. The university research trials will compare the establishment, growth rate, competitiveness, overwintering, and nitrogen contributions of the new legume species vs. traditional species such as hairy vetch and red clover. Several interseeding times and rates will be also be tested with multiple vegetable crops. Further details about the proposed research trials are included in the attached research plan.

This combined educational and on-farm research approach will be effective for increasing farmers' knowledge about new and traditional cover crops, as well as skills and confidence to select appropriate crops and manage them for maximum

benefit and optimum crop yield. A similarly designed 2006-2008 intensive cover crop education and on-farm demonstration project with corn and soybean farmers in New York resulted in 200 farmers planting cover crops for the first time on a total of 12,000 acres (9). Farmers in that study reported strong satisfaction with their cover crop choices and a high level of commitment to continued use of cover crops on their farms.

Milestones and performance target (400 words)

In these sections, outline the structure and proposed outcome of the project for reviewers by listing the milestones and performance target.

Although the milestones will precede the performance target temporally in the project, the two concepts are best understood by considering the performance target first. And, in fact, all project planning is best begun with a clear vision and understanding of the performance target.

Performance target

Each project must have a performance target that defines a specific, beneficial, and verifiable outcome. This performance target should match the target in the abstract. To fully and clearly describe the outcome, three key elements are necessary in the performance target. They are:

1) The **specific, verifiable change** in beneficiary actions or behavior that your project proposes to accomplish;

2) The **scale or degree of change** that will occur– i.e., a number (not a percentage) of people who will change and a number of farms, acres, animals, enterprises, etc. affected by the change; and

3) The expected **measurable benefit(s)** that will result from the beneficiaries making the change.

The change described must be achievable by the end of the project so it can be verified and reported in the final project report.

These elements are discussed below.

1. Precise change in action or behavior

The performance target must include a specific, direct statement of the precise change in actions or behaviors beneficiaries will make as a result of your project. The change should be described in terms of something you can track, measure, and verify. The change must be achievable by the end of the project, and it must contribute to Northeast SARE's outcome statement. Verification of the change will be part of the final report.

The change described in the performance target could include things like the adoption of a new production practice, marketing strategy, or business management tool; the establishment of a new crop or farm enterprise; a change in farm organization or labor management; or the creation of business or farm transfer plans. The precise change obviously depends on the project content.

2. Scale of change

The scale of change is described in the performance target by a defined, specific number (not a percentage) of beneficiaries who will make the desired change, and a measurable indicator of the degree or extent of change the individuals make.

Examples of these measurable indicators could include the total number of acres or animal units switched to a new practice, or the total number of new markets, plans, or enterprises developed. Choose indicators that are measurable or countable, and that are appropriate and meaningful for the project.

The scale-of-change aspect of the performance target is often difficult for applicants to estimate because they can't be sure in advance what changes will be made by the project beneficiaries. However, the stated number of beneficiaries who will make the desired change and the numbers chosen to describe the degree or extent of that change should be numbers that are realistic, based on what you know about the difficulty or complexity of the change, along with the needs and interests of the beneficiaries. **Strong engagement and input from project beneficiaries during proposal planning are essential for establishing ambitious but realistic numbers in the performance target.** Reviewers look for ambitious change, and for evidence that you are challenging your project to reach for meaningful results.

3. Measurable benefit

The ultimate purpose of accomplishing the change targeted by this proposal is to provide a benefit to farmers that contributes to the economic, environmental, or social sustainability of their farms and agriculture in the Northeast. It follows that the performance target must also include a direct statement of the specific, measurable benefit towards improved sustainability that farmers will get by making the change. This benefit should be something that can be tracked and verified throughout the project through your verification plan.

Here are some examples of the kinds of measurable benefits that could be included in a Research and Education performance target:

- Pounds of excess nutrients removed from animal diets and manure (from adoption of recommended practices to improve feed rations)

- Dollars of input costs reduced (from adoption of recommended pest control or nutrient management strategies)

- Dollar increases in sales (from acres of land planted to a new crop, adoption of a new marketing strategy, development of a new enterprise)

- Farmer-assessed improvements in quality of life and lifestyle satisfaction (from changes in farm organization or labor management)

- Acres of farmland preserved (from creation of farm transfer plans)

Combining the three components together yields the performance target. Below are some examples of robust performance targets for Research and Education projects.

Example 1: The cover crops project (see other examples above) project with a research component

Ninety vegetable farmers adopt legume and non-legume cover crops and/or improved cover crop management practices on a total of 900 acres, reducing their historical N application rate in subsequent vegetable crops by an average of 50 lb/acre/year without reducing yields.

Example 2: Project without a research component

Twenty-five grass-based organic dairy farms with a total of 1,500 milking cows implement a low-cost feed supplement program that has been shown to improve animal health as measured by cull rate and increases in milk production per cow by an average of 1,000 lb. per year, increasing revenue $500 for an added cost of $94 per cow.

These targets each include the three essential elements. They describe the **specific action or change** that the farmers will make; they define the **scale of change** by the number and type of farmers who will act on a specified number of acres, products, animals; and they describe the **measurable benefit** to farmers (and in some cases society) that will result from their actions.

In many SARE projects, the measurable benefits will be directly measured indicators like sales achieved, production increased, or costs reduced that the project team measures directly and includes in their reports. But in some projects, benefits can be calculated using data that is collected during the project. Take, for example, this performance target:

Twenty vegetable farmers adopt no-till or zone-till practices to improve soil quality on a total of 1,000 acres, resulting in an average reduction in erosion of five tons per acre and an average savings of two gallons of fuel per acre.

The reduction in erosion and savings in fuel do not have to be directly measured by the project, because there are published research reports documenting erosion reductions and fuel savings that occur when acres are converted from conventional tillage to no till or zone till. These values can be credibly calculated using the data collected from farmers about the number of acres converted. Projects should either make measurements of the benefits to the farmer or society directly, or, as in the last example, extrapolate benefits from published research.

Notice that the sample performance targets do not say what you, the applicant, will do. All projects include activities conducted by the project leader and team, but these activities do not belong in the performance target. Instead, performance targets describe precise changes and actions by the beneficiaries—the farmers who are outside your direct control, but who are influence through their participation in the project. This change in focus—describing the actions of others rather than your own—can be a source of discomfort, especially for applicants familiar with a more standard funding approach where the grantee proposes to do specific tasks (hold a conference, do research, or develop a new publication, for example), using the grantor's money. Outcome funding requires that

SARE look beyond the research, services, bulletins, or educational events developed by the grantee to see whether the beneficiaries made improvements as a result of the education program.

Writing a strong performance target—getting bang for the buck

Accomplishing significant, useful change requires a more intense engagement strategy than achieving a change that is relatively easier to accomplish, and often more of an incremental adoption — soil testing as opposed to switching to an entirely new kind of tillage system, for example. Similarly, it's harder to engage many people to change than it is to get a few people to do something differently. The point is that a performance target describes the **intensity or scale** of change and this scale suggests the level of effort and resources needed to achieve it—if a dramatic change is being pursued, it may require more funding, even if the numbers of people making the change are relatively small. It also follows that if a **large** number of beneficiaries are going to be involved in making a **less demanding** change, then a high level of funding may also be justified. SARE reviewers will sometimes approve smaller projects or those seeking modest levels of change, but only if they can be accomplished for a lower cost than more ambitious projects.

The so-what? test

A strong performance target will pass the *so-what?* test. This is a mental test where reviewers ask: *Is it clear that anything meaningful will result from the effort described?*

For example, if a performance target says that 200 farmers will attend a workshop to learn about managing pastures, reviewers will ask, *so what?* The farmers may have a wonderful educational experience, but that experience alone is not enough to meet the outcome-funding standard of measurable change. The target may go on to say that 30 farmers will call the presenters after the workshop to get assistance with writing pasture management plans. *So what?* This may be an indication of interest and intention to change—a good first step, but these phone calls alone do not indicate that any change in pasture management has taken place. But if the target says that ten farmers with a total of 800 cows will implement pasture-management plans that reduce their feed costs by an average of $10,000 per farm per year, now you have a specific, measurable change with positive, measurable results for a known number of beneficiaries. The preceding intermediary steps—the ones that do not quite pass the *so-what?* test—are still important stages that the beneficiaries must go through to acquire knowledge, skills, and new attitudes along the way to achieving the target. These are called **milestones** and they are discussed in more detail in the next section.

Learning and skill milestones—how milestones chart the plan for beneficiary learning

To prepare to make the specific change or take the action described in the performance target, beneficiaries must go through a number of critical steps in learning and skill development. These connected, logical, and intermediate developmental steps are called milestones. Beneficiary milestones must include steps such as learning necessary content, building essential skills and capabilities to perform tasks, agreeing the problem is a legitimate problem, believing in the credibility and feasibility of the proposed solutions, and acquiring the intentions and motivation to overcome barriers and make the desired change. The learning described in the milestones should

reflect the educational topics and research goals described in the project approach subsection in the narrative.

Milestones are not the same as the activities done by the project leader or team; rather, milestones outline the framework and sequence of beneficiary learning that is directly linked to the activities and learning events you will schedule for the beneficiaries. Milestones are stated in terms of **what** a specified number of beneficiaries learn and accomplish **through** participation in specific project activities or learning experiences **within** a defined timeframe. The activities and events proposed in any project are the means to an end—specifically, of preparing beneficiaries to accomplish the performance target—and are not ends in themselves. Learning and skill milestones must be verifiable (and verified) as a project progresses. The performance target is the last step in this chain of learning and preparation for beneficiaries, and, in that sense, is the final milestone of a project.

Milestones include four components:

1. The number and type of beneficiaries (farmers) who will participate;

2. The project activities or educational experiences the beneficiaries participate in to learn;

3. The key, specific content that beneficiaries will learn, build skills for, and develop attitudes and intentions about;

4. The schedule or timeframe for the learning.

Present milestones as a series of logical, sequential, and progressive steps taken by beneficiaries. The number of beneficiaries who take each step should be realistic and sufficient for keeping the project on track to achieve the performance target. Each milestone should link with the one that follows and have a specific duration or a specific start and end date, creating a timeline of important beneficiary learning and progress. The performance target is the final milestone, and should always follow logically from the milestones that precede it. Reviewers will be rightly critical of vague milestones that show little or no connection to, or progression toward, the performance target.

When you write milestones in a logical and progressive sequence, they will provide a clear blueprint to follow as you carry out project activities. The milestones will also serve as check points for verification throughout the project. If milestones are not being achieved by the expected number of participants, then it is an indication that course corrections are needed if the performance target is to be met.

Below are sample sets of milestones for each of the performance target examples included above:

Example 1: The cover crops project (see other examples above) with a research component

1. A thousand vegetable farmers learn about cover crop education program and receive on-line survey about their current practices. (Nov '12)

2. Two hundred vegetable farmers return survey; 180 agree to participate in education program; seven agree to host on-farm demonstrations (Feb '13)

3. One hundred and sixty of these farmers attend two three-hour workshops in each state that explain: Performance Target, known benefits of cover crops, ongoing legume cover crop research, on-farm trials, cover crop planning, and decision tools (Jan '13 - March '13)

4. Forty of these farmers attend twilight field day at university about plow down of cover crop; video made of plow down for posting to blog (May '13)

5. One hundred and fifty of the farmers attend field day at university about new/existing cover crops; seven farmers on-farm plant demonstration trials (Sept '13)

6. One hundred farmers submit cover crop plans for their farms to project team for review (Nov – March '13)

7. Forty farmers attend twilight field days at on-farm demonstrations about plow down of cover crops; farmers consult about plow down of cover crops with project team by phone, e-mail, blog and with other farmers on blog (May '14)

8. Sixty farmers plant cover crops for first time and 30 use improved cover crop management practices on a total of 900 acres (April – Sept '14)

9. Ninety farmers document acres of cover crops planted/improved management of cover crops and N reductions by submitting completed verification information to PIs. (Nov - Dec '13)

Performance Target

Ninety vegetable farmers adopt legume and non-legume cover crops and/or improved cover crop management practices on a total of 900 acres, reducing their historical N application rate in subsequent vegetable crops by an average of 50 lb/acre/year without reducing yields.

Example 2: Project without a research component

1. *Three hundred grass-based organic dairy farmers in Pennsylvania and New York receive notifications of the feed supplement program goals and activities and invitations to participate (listserv and newsletters, autumn 2012)*
2. *Fifty of these farmers express interest in participating and through personal contact with project leaders gain an understanding of the specific educational activities they would be expected to attend, and the management and data collection responsibilities; forty farmers decide to participate and complete enrollment forms (winter 2012-13)*
3. *Thirty-five farmers attend a day-long training that explains recent research on organic feed supplements, guidelines for their use in this project, methods for data collection, and reporting (early spring 2013)*
4. *Thirty-two farmers attend at least one of three on-farm workshops to learn how other farmers are optimizing grazing and herd health practices while integrating feed supplements into their management (summer and fall 2013)*
5. *Thirty farmers complete a year of supplemental feeding and gather to share their experiences and data and to make adjustments to their management plans for the coming year (winter 2013-143)*

6. *Twenty-eight farmers attend at least one of three on-farm workshops offered to learn how other farmers are optimizing grazing and herd health practices while integrating feed supplements into their management (summer and fall 2014)*

7. *Twenty-five farmers attend a daylong meeting to summarize, compare and discuss the results of changes in their feed programs over the past two years.*

Performance Target

Twenty-five grass-based organic dairy farms with a total of 1,500 milking cows implement a low-cost feed supplement program that has been shown to improve animal health as measured by cull rate and increases milk production per cow by an average of 1,000 lb. per year, increasing revenue $500 for an added cost of $94 per cow.

These milestones and the performance targets describe what, how and when beneficiaries will learn and then do—as opposed to what project staff or project managers will do—and for some grant applicants this is a new way of thinking, requiring a shift in perspective. Learning to plan this way is a key to succeeding with outcome funding.

Milestones describe beneficiary engagement over time. It is important to be realistic and recognize that not every person who begins a given phase of the project will see it through to the end—note the anticipated drop from 400 farmers initially involved to only 25 implementing the change in the example above. It is relatively easy to engage a lot of people in activities; it is much harder to get people to implement a new practice or behavior, especially if the practice is complex and multifaceted, as is the case with the adoption of a new tillage system.

The number of participants included in the milestones and the final performance target should be based on your knowledge of the difficulty or complexity of the targeted change and the needs and interests of the beneficiaries. The participation numbers established in the milestones are not a guarantee, but an informed estimate of participation and engagement. They should also become goals, because, to reach the performance target, sufficient participation and engagement along the way is a necessity. **And, as was stated for performance targets, strong engagement and input from project beneficiaries during proposal planning are essential for establishing ambitious but realistic participation numbers in milestones.**

Verification plan (400 words)

Here you will describe the end-of-project verification process and the tools you will use to conduct the verification. Typical methods used are interviews, observations, phone contact, e-mail or paper surveys, review of farm records, or other techniques that best suit the project design. A good verification plan explains how you will track your beneficiaries' progress through the milestones, and how you will verify the performance target once the project is complete.

For learning and skill milestone verification, describe how and when you will verify changes in the participants' knowledge, skills, attitudes, and their intentions to take action. The information you gather during the project should be directly linked to the milestones established in the proposal. Consistent wording and format are important so that responses can be compared reliably over time.

Assessment done during the project should also allow you to capture the demographics of your beneficiaries, evaluate their participation levels, and gauge the effectiveness of your efforts to help beneficiaries reach the milestones. This routine verification of milestones during the project will tell you if there are problems with implementation: If the numbers of participants start to vary significantly from the numbers in the milestones of your proposal, or if gaps in understanding and skill acquisition emerge, then you will know some kind of course correction is required. It is important to maintain a high level of engagement with your beneficiaries and make sure that measurement tools (questionnaires, post-workshop surveys, or face-to-face follow-up) are consistent and relevant.

Verification of the performance target requires follow-up after project activities are over to find out how many beneficiaries made the desired change, the scale or extent of that change, and what measurable benefits resulted. Posing these end-stage questions should be straightforward if the performance target is specific. Examples of the types of questions to ask might include:

- Which recommended practices were adopted?
- How many acres (or animals, or customers, etc.) were affected by the practices?
- How much money (or time, or input costs) were saved?
- What specific improvements in yield, quality, animal health, or productivity resulted?
- Was there an increase in annual sales or net profits and if so by how many dollars?

Usually some time must elapse between completion of the project activities and verification of the performance target to allow changes in beneficiary behavior to occur. Tell your beneficiaries, preferably more than once, that verification will be conducted even after the main project activities end, and ask them to be prepared to answer follow-up questions about how, when, and whether they used the knowledge they learned through the project to make changes. Knowing about these questions ahead of time helps participants prepare and may improve the quality and quantity of responses.

Be aware that follow-up verification often becomes more complex as more time goes by—people may be harder to find or slower to respond. An end-of-project e-mail survey may need more than one follow-up and then a phone call to get an acceptable response rate; you may also need to track beneficiaries to new jobs or changes in location. Decide now what an acceptable response rate is and what resources you will commit to achieving it.

Northeast SARE recognizes that unforeseen circumstances or insurmountable barriers may prevent some projects from entirely meeting their performance target. SARE is looking for a frank, truthful assessment of outcomes and whether the project approached, met, or even exceeded its original performance target.

Verification methods will vary according to the type of project, but planning and executing your verification strategy at the proposal stage is essential to capturing results. The likelihood of reaching a milestone or achieving a performance target improves when you know what you plan to measure and how you will measure it before the project starts. Proposals that do not have a clear verification

plan are often equally unclear about what specific changes are expected, since the two are tightly linked.

A common mistake project managers make is to postpone doing any verification work until the project is over. Logically, this might seem like the way to go—you can't know your results until the results are in. But there are usually several stages to verification, from:

- Gathering baseline information about beneficiaries' demographics, pre-program knowledge and their understandings about the projects goals and expectations to
- Mid-project surveys to verify milestone progress, to
- Follow-up when the main project activities are over to verify the performance target.

There are a number of ways to gather verification information—sign-in sheets, workshop questionnaires, face-to-face discussion, or through some follow-up mechanism like direct mail, e-mail, telephone, or an electronic mailing list.

A **draft of your performance target verification tool** must be uploaded as an attachment as a .pdf, .doc. or .xls file. Although a draft, this tool should be specific and detailed enough to assure reviewers that you understand what questions should be asked and what information will be needed to verify the performance target. There is no specific word limit on this document; be as concise as possible.

Below are possible verification questions for the cover crops project that we have referred to earlier—see other examples. To refresh your memory, the performance target for the project is *ninety vegetable farmers adopt legume and non-legume cover crops and/or improved cover crop management practices on a total of 900 acres, reducing their historical N application rate in subsequent vegetable crops by an average of 50 lb/acre/year without reducing yields.*

Sample verification questions:

1. Listed below are some of the cover crop techniques recommended through this project. Please circle the best answer for each recommendation.

Cover crop species and management recommendation:	**Please circle the best answer for each recommendation:**			
Plant species A	No plans to do	I plan to do this within 6 months	I was doing this *before* the project	I started this *since* the project on _____ acres of _____ _____crops)
Plant species mix B, etc.	No plans to do	I plan to do this within 6 months	I was doing this *before* the project	I started this *since* the project on _____ acres of _____ _____crops)

Interseeded legume cover crop(s)	No plans to do	I plan to do this within 6 months	I was doing this *before* the project	I started this *since* the project on _____ acres of _____ _____crop(s)
Adjust a crop rotation to increase opportunity for legume cover crop(s), etc.	No plans to do	I plan to do this within 6 months	I was doing this *before* the project	I started this *since* the project on _____ acres of _____ _____crop(s)

2. For fields in which you used a legume cover crop or improved cover management technique within the last year, please provide the information requested below. List each field separately.*

Marketable crop grown following cover crop	**Field size (ac)**	**Cover crop/technique used**	**Lbs. N used for crop following cover crop**	**Avg. marketable yield/acre**	**Lbs. N used for same crop w/no cover crop (actual or historic)**	**Avg. marketable yield/acre (actual or historic)**

3. Did you observe differences in the extent of insect damage or disease between crops grown with or after cover crops vs. those with no cover crops?*
   Yes **No**

4. If yes, please describe.*

5. Do you have any thoughts or comments about the benefits and challenges for the use of cover crops that you experienced on your farm?
6. Do you have any thoughts or comments about this project that you wish to share?

*****Note that the information requested in these questions could also be included in a recordkeeping template you provide to farmers for their use throughout the project, allowing them to gather management and production data and observations in real time. In this case, verification would involve collecting the farmer-recorded information during interim check-in contacts and again when the project is over.

It's important to use some open-ended questions—even though they can be difficult to analyze, they often contain important and even surprising information. If you are conducting your final evaluation by telephone, make sure to ask specific, fixed questions *and* give each participant a chance to speak freely about the project. It's sometimes best to have a third party conduct these interviews to avoid

bias. Unexpected outcomes can be interesting and often very gratifying, and the best way to tease them out is to listen actively to unstructured responses.

Northeast SARE has an extensive collection of verification guidance and example questions on its website at http://nesare.org/resources/verification-tools.html. Applicants are encouraged to review these resources and use ideas and question formats from the examples found there.

Below is a list of common obstacles to implementing a good verification program.

- The sign-up or registration material is incomplete, so that you don't have good contact information for participants, especially walk-ins and people who may have been registered by another party at their institution.

- Participants aren't always asked whether they understand the content or whether it will be useful to them.

- Mid-project verification is not used to identify participants who are having problems meeting the project's expectations and need help getting back on track.

- The time between the end of the project and the final verification is too long, so participants no longer have access to the necessary data, can't remember their experiences clearly, or have lost their enthusiasm.

- The verification format doesn't ask for the data needed to verify the performance target.

- Participants were not specifically informed well in advance about the type of data they would need to collect in order to complete the verification questions.

Key individuals (350 words)

This section of the proposal is a list of key individuals playing an essential role in the project, including the project leader. These are the people who will have specifically assigned responsibilities for coordination, leadership, organizing, training, or research. For each key individual, write a brief description of their relevant abilities and qualifications and state the specific role they will play in the project. Avoid too much detail and emphasize only the background and skills that will most likely come into play in the course of the project. Here are some sample profiles:

Arthur Blake is a vegetable specialist and extension educator with 11 years of experience in sustainable and alternative production techniques. He has also led interdisciplinary teams that work directly with farmers on applied research issues and pest management. He will lead the project and do recruitment, follow-up, training, and assessment.

Mary Duke is currently the coordinator of Green!, a producer-chef alliance that develops and sustains markets for fresh, local, and specialty restaurant foods. Before that, she spent four years with Diggers CSA where she managed fulfillment and marketing. She will act as the liaison between the retailers and the farmers and manage many project logistics.

Greg Hunt is an agricultural business educator with the state department of education and has been involved for the past 13 years in a range of farm viability projects that focused on dairy farm systems and management. He will coach farmers on profitable management strategies, co-lead the team meetings, and help with follow-up.

If there is a key individual who is yet to be hired, briefly describe the position and its duties:

The technical coordinator will oversee lab work and testing, report back to both farmers and the project leader on results, maintain the integrity of data, and assist in analysis. The coordinator will have extensive lab experience and a good understanding of data systems.

A letter of commitment from each key individual (except for you, the project leader) must be uploaded as an attachment to the proposal. These letters should indicate that each person listed on this page understands his or her role and is ready and is willing to participate. These letters should be written by these individuals, not by the project leader. Obviously, a project is most likely to succeed when its key cooperators understand and agree to their roles and time commitment before it even starts.

Literature review (2000 words)

The purpose of this section is to outline for reviewers the scientific foundation and merits of your project and identify and explain the references used to understand the problems, challenges, and opportunities associated with the project.

The goal is not to create a long list of publications—include only those sources that are relevant to the credibility, design, and goals of your project. This is the place where you convince reviewers that there is a body of knowledge that provides a compelling rationale for the performance target and milestones you are proposing.

Along with other sources, it is prudent to show and understanding of any previous SARE grants and how your project will complement or build on earlier project results. To find past grants, search the SARE project data base from the national web site at www.sare.org. Select "project reports" from the top navigation bar and use the search functions to sort by state, type of grant, and keyword.

Include a citation list at the end of the literature review. Here is a general example of what a citation list entry should look like:

Anderson, Joan. *Sheep Herd Health Management.* 2004. Sustainable Agriculture Network. Includes a discussion the efficacy of alternative wormers and the managed reduction of antibiotic use.

Brown, Edgar. *A Producer's Guide to Whole-Herd Management.* 1998. Etherbooks. A holistic approach that encourages placing livestock in the context of overall farm management.

Chester, Anne. *"Breeding for Natural Resistance."* 2001. NRAES 8888. A bulletin on breed characteristics and management strategy.

Please remember that reviewers do not require (and do not want), a citation for every paper, web page, book chapter, bulletin, or other document you have researched in your interest area. The

documents you include in the review should be the ones that place your project on a firm scientific footing and in a meaningful context, and the ones that were that were genuinely useful to you in terms of contributory knowledge and project planning.

Budget and the budget justification narrative

Even the most persuasive proposal will not be funded if the budget is not clear, seems inappropriate (too high or too low for the effort described), or includes requests for items not described in the proposal or for items not allowed by SARE. Reviewers need to know specifically what SARE is paying for and why.

Avoid guessing or simply putting generalized round numbers in the budget; this cues reviewers to a certain laziness. Instead, show reviewers that you've thought through the expected expenses and calculated precisely what is needed to carry out your project. Reviewers will be looking for a close connection between what you propose to do, as described in the project approach and milestones, and the project's budget.

Reviewers also need to understand how you arrived at your cost estimates, and the place to show this is the budget justification narrative. This justification narrative should provide an explanation for each line item in each year of the project.

Always present justifications by indicating the number of units times some cost, or, with personnel costs, as either a percentage of full-time equivalency or as an hourly wage. For travel, show the purpose of the trip, the distance, the mileage rate, and other travel expenses such as lodging (indicate the room amount and the number of nights). Follow this cost-times-unit format wherever possible; for phone communications, for example, you might list the number of expected conference or long-distance calls at xx dollars per call. Make sure your unit costs are accurate—if you are not sure what it costs to buy the twelve rolls of landscape cloth you need for a weed-suppression project, consult a catalog or call a farm supplier and ask. The resulting entry for the fabric might look like this:

12 rolls 3' x 250' landscape cloth @ $70 each: $840

Other justifications might look like this:

2000 bulletins printed at $2.12 each: $4,240
two mailings of 2600 @$.31 per piece: $1,612
50% FTE of Entomology Dept. technician: $18,500

Budget entries should always be rounded to the nearest dollar; the online submission template does not accept trailing decimals.

If you do not justify your budget adequately, the competitiveness of your application will almost certainly be undermined. If you are requesting $12,342 for supplies, but only detail $8,615 worth of items, your budget request of $12,342 is not justified. If you estimate that you will need to spend $18,450 on lab tests but provide no number or cost per unit, the justification is inadequate.

This itemization may seem tedious, but it shows reviewers that you have thought through the project and the funding needed. Also, this level of detail is required by USDA/NIFA.

Exclusions

There are certain expense categories that SARE funds cannot be used for. Capital expenses for things like land purchases, general farm improvements, and construction of buildings, greenhouses, and laboratories are not allowed. Costs for copiers, cameras, computers, video equipment, and other items that could have a wide range of uses beyond the boundaries of the project must be clearly essential to a particular project to be allowed. Applicants must develop a clear justification and make sure that these requests are reasonable, defensible, and not extravagant.

Food expenses are typically not allowed. Under certain circumstances—if it is a working meal as part of a meeting or training event, if the meeting is at a remote site where no restaurants are readily available and offering a meal is the only way to get people to a reconvene in a timely way—meals might be paid for with SARE funds. When SARE funds are used for meals, USDA employees should note this on their expense reports and deduct meal costs from any per diem reimbursements.

International travel is discouraged and, if proposed, must be integral to the project's success and described in your budget justification. There are certain restrictions on costs and carriers, and you can learn more about them by contacting SARE staff.

Graduate student tuition remission is not funded by SARE, but note that SARE funds can be used to compensate graduate students for project labor.

Items of clothing—hats, tee-shirts, aprons, etc.—cannot be purchased with SARE funds, as are giveaways, subsidies, and incentive payments.

Personnel costs

Personnel costs are salaries and wages, and the subcategories are major participants (people like the project manager and his or her associates), support staff (often administrative support), graduate students, and hourly labor. There is also a line in the personnel section for fringe benefits.

Please only list **your institution's personnel** under personnel costs. If people outside your institution are going to be paid to work on the project, this can be managed through a collaborator subcontract or as consultants. For example, if you bring in someone to help you analyze an erosion problem, that person may be paid as a consultant. If you do plan to bring in consultants or subcontract a portion of the work to another collaborating institution, enter those expenses under "other direct costs" as described below.

Non-personnel costs

There are several expense categories under non-personnel: travel, supplies, publications, and other direct costs. That's a lot of categories, so we'll look at them one at a time.

Travel

When requesting funds for travel by car, use the mileage reimbursement rate set by the institution administering the grant. If you are not associated with an institution, then you may use the rate established by the University of Vermont, which hosts the SARE program; this rate is adjusted each year to match the federal rate, and is currently 55 cents a mile. For auto travel costs, indicate the

destination, the number of trips, and the total anticipated mileage. Here are some sample budget lines:

4 trips to cooperating farm, 14 miles each, 56 miles @$0.55/mile: $30.00
3 trips to soil lab, 26 miles each, 78 miles @$0.55/mile: $43.00
1 trip to growers' meeting, 104 miles @$0.55/mile: $57.00

If your budget includes air travel, make sure you price your request with the least expensive carrier. Federal regulations say U.S. carriers must be used for international travel. Long-distance trips must clearly be justified as central to the project.

Supplies

This section is for items that are specific to the project and have a reasonable useful life of less than three years. Supplies can include things like office supplies, project-specific software, specialized tools, measuring devices, and other materials that will be used and used up in the course of the project. Again, be specific:

4 test kits at $22 each: $88
mapping software: $420
10 reams of paper @ $2.60 each: $26

Publications

This budget item is specific to any publication development costs (editing, design, and printing) that you might incur. This would also include the cost of developing web-based publications, but it does not include general web hosting or photocopying, which comes in the next section under direct costs. Show a per-piece cost for any publications you plan to develop. For example:

24-page resource directory, layout and design at $30/hour, 15 hours: $ 450
Printing at $1.12 each, 1000 pieces: $1,120

Other direct costs

This budget category is for communications costs like phone calls, postage, and photocopying, any subcontracts, any money paid to cooperating farmers, consultants, or trainers, and other allowable direct costs. Please note that phone calls, including any conference calls, should be project specific and use land lines; SARE cannot reimburse for cell phone charges.

Communications costs typically include postage, fax, and telephone expenses as described above. For example, if you plan to mail 350 flyers to announce a field day, then your line item would read:

Postage for 350 flyers at .41 each: $144.00

If you plan to have ongoing long-distance telephone contact with cooperators or perhaps a consultant, make an educated guess what these will cost. For example:

10 hours in-state evening long distance to cooperating farmers: $ 50

4 hours in-state daytime long distance to technical advisor: $ 45
2 conference calls with planning committee @ 1 hour each: $ 72

If you think you will be making copies in the course of the project, estimate how many and the cost per page. For example:

500 copies of the bulletin for distribution at field day @ .05 each: $25

You can also estimate your administrative copying costs, based on past experience:

100 pages a month @ .05 each X 12 months: $60

If an outside entity like a consultant is hired on a temporary basis to carry out a specific task, they often appear as a direct cost. For example:

Jack Adams, WonderMark, precision spraying, 4 applications at $325 each: $1,300

Consultants tend to be outside advisors, speakers, trainers, and your cooperating farmers.

SARE feels strongly that farmers need to be paid for the time they contribute to a project at a reasonable rate—Northeast SARE itself compensates farmers who serve on its committees and review teams at $240 a day. Please note that there is a distinction between paying farmers to contribute to a project by participating in planning or project evaluation, or perhaps coming to a conference in the role of a trainer or presenter, which is appropriate and encouraged, versus paying farmers to receive the benefits of training, such as coming to a workshop or conference as a recipient. In this second case, payment would not be appropriate.

Miscellaneous

If you have a project expense that truly does not fit into any of the above categories, put it here. A possible miscellaneous expense could be a land lease.

One-third of drip irrigation system, greenhouse C: $1,300; $2,600 to be provided by Green Valley Community College

Lease of two acres of sloped sandy pasture for replication @ $60 each: $120

Avoid using this budget category as a portmanteau for items that really belong somewhere else, or as a place to stash items that SARE does not fund. The miscellaneous line item in the budget is often the subject of unusual scrutiny. Each item must be identified, and an unidentified or unjustified miscellaneous item is not allowed, nor is an undefined "etc."

Indirect costs

Applicants for Research and Education grants whose institution has a negotiated federal indirect rate may budget up to 10 percent for indirect costs. If the negotiated institutional rate is less than 10 percent, that is the rate that applies. This is a change in policy effective with the 2011 grant awards. Indirect cost charges must conform to USDA/NIFA and UVM guidelines.

Subcontracts

If there is some project-related work that will be contracted out to an agency or vendor, list it here. Be clear about the scope of work and cost. If the subcontract is to another institution working as a collaborator on your project, provide a budget and budget justification for that institution.

Budget format

People often ask how to format and present their budgets. For guidance with this, look at the layout below and note the different categories—this will give you an idea of how to set up columns and rows. To draft your budget, you are welcome to use your preferred spreadsheet software, making sure you use only the budget categories allowed by SARE and with content consistent with what you have read so far.

Personnel—salaries and wages
major participants
support staff
graduate assistants
hourly labor
subtotal, salaries and wages
fringe benefits
subtotal, including fringe

Non-personnel
travel
materials and supplies
publications
other direct costs
- communications (mail, telephone, postage)*
- photocopying
- subcontracts (includes any work performed by outside sources or other institutions)
- consultants
- service/maintenance costs for durable equipment
- conferences and meetings
- speaker/trainer fees
- honoraria
- office rental (office must off site and specific to this project)
- land-use charges
- other and miscellaneous (must specify)

subtotal, non-personnel

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indirect costs — if eligible, up to 10 percent of direct costs

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total
*cell phone expenses excluded

In the online submission template, you'll be prompted to enter a budget for each year of your project if it is a multiyear grant, and a summary for the overall grant. If yours is a collaborative project involving multiple institutions, each getting support as subcontracts from your institution, then you'll be submitting a budget for each subcontract.

The justification part of the budget, sometimes called the budget narrative, is separate, but the items in the justification should appear in the same order as in the budget itself. This streamlines review—as you can imagine, it is very distracting for reviewers to have to hunt for items in the justification, and very satisfactory for them when budget content is set up consistently so that all proposed expenditures are perfectly clear.

If you have prepared spreadsheets with your budget and budget justification details, you may attach it in the attachments section, titled "Budget" or "Budget_Justification."

There are two broad rules that should govern budget preparation and presentation. First, the budget needs to reflect, with accuracy and transparency, the events and activities in the text portion of your proposal. Do not put items in the budget that do not appear in the narrative, and do not include something in the narrative that is not covered in the budget.

Second, the budget should inspire confidence. It should be orderly, easy to figure out, and have nothing hidden in it that would be unallowable or questionable. Common unallowable expenses include day-to-day operating expenses that would be present in the absence of the project, meals that are not legitimate working lunches or light refreshments, and expenses to set up labs or buildings. Other items that catch reviewers' attention are durable equipment like cameras, computers, and other items that have a life expectancy longer than the life of the project. Requests for these items must be clearly justified in your budget narrative.

Attachments and other documentation

All proposals should have letters of commitment from the key individuals listed in the application. A letter (or letters) from a collaborating farmer (or farmers) is also allowed, and can be persuasive to reviewers. And, if your project has a research component, a description of your research hypothesis, methods and protocols, and statistical analysis should also be attached.

Please note that if your project is funded and involves livestock, SARE will require certification of protocol review from your Institutional Animal Care and Use Committee (IACUC). If your funded proposal involves livestock and you are *not* affiliated with a university, a review can be coordinated through the University of Vermont. If your institution requires a Protection of Human Research Subjects review, SARE will need a completed approval document. Send review results to David Holm, Northeast SARE, 655 Spear Street, University of Vermont, Burlington VT 05405-0107.

Do not submit any letters of general support, curricula vitae, or other documentation not specifically requested.

Review criteria

Below are the criteria used by reviewers to evaluate and select proposals to fund. Keep these criteria in mind as you plan your project and write your proposal application.

- The proposal addresses a clearly identified and compelling need; substantiating data is provided
- Previous relevant work is described and connected to the proposed work
- The project proposes a solution that is likely to yield outcomes that will have an enduring positive impact on the sustainability of agriculture in the Northeast
- The proposal shows a strong understanding of the beneficiaries, clearly explains their relationship to the project, and offers evidence of their desire to engage with the project
- The performance target is ambitious but achievable in the timeframe of the project
- The performance target and milestones are clear, connected in logical sequence, measurable, and realistic
- There is a specific and effective verification strategy for the performance target and milestones
- Appropriate key individuals are involved and their participation is sufficient to accomplish the project
- The methods and approach developed for the project are clearly described and well thought out; research activities, if proposed, are well planned and likely to yield valid results that can be applied on farms
- Outreach activities are planned so as to engage the target audience
- Project leaders are capable, committed, and skilled in the area of proposed work
- The budget reflects the realistic needs of the project and the total request is appropriate in terms of the magnitude of the project's expected results

Useful resources

A competitive application tends to reflect a high state of knowledge about an issue, barrier, or opportunity in sustainable agriculture. Draw on the insights of colleagues and researchers and to find and use all the resources you can. A few things to consider are:

- Using the national SARE database of projects (www.sare.org) to explore what others are doing
- Asking the National Agricultural Library's Alternative Farming Systems Information Center (301/504-6559, www.afsic.nal.usda.gov) for help with literature reviews
- Contacting Appropriate Technology Transfer for Rural Areas (800/346-9140, http://attra.ncat.org) for information packets on relevant topics

- Consulting *Outcome Funding: A New Approach to Targeted Grantmaking, fourth edition*, by Harold Williams, Arthur Webb, and William Phillips, for background on the proposal process and the concepts of outcome funding

If you have questions about the application forms or format, contact the Northeast SARE office at 802/656-0471 or send e-mail to nesare@uvm.edu

How to submit your proposal

Proposals are submitted on line at http://www.ciids.org/nesare/re; the deadline is midnight, **November 1, 2011**.

As with the preproposal, there are word restrictions on each section. You are strongly encouraged to use a word processing program to write and edit your proposal ahead of time to make sure it is accurate and complies with the word limits for each section.

Be sure to give a draft of your proposal to your sponsored programs or grants office well ahead of the November 1 due date to verify that your budget requests are in alignment with their policies. They usually require two to four weeks to review proposals before you can get their approval. After you submit your proposal on line, you'll be able to print it out with a cover page to be officiated by your institution and a signature page for you to sign off on.

A single printed copy with all required signatures (but excluding attachments) must be sent to Northeast SARE postmarked no later than **November 16.** Faxed hard-copy submissions will not be accepted.

Applicant checklist

- ☐ Submit all proposal components on line
- ☐ Print out one copy of the proposal, excluding attachments
- ☐ Collect the required signatures
- ☐ Send the hard copy of the proposal to Northeast SARE before the postmark deadline
- ☐ Other documents (IACUC, Protection of Human Research Subjects) sent to Northeast SARE no later than December 1, 2011.