

POLICY STUDIES ASSOCIATES, INC.

**4-H Science, Engineering and Technology (SET) Initiative:  
Enrollment and Implementation Study**

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# Executive Summary

## Introduction

With the support of the Noyce Foundation, National 4-H Council has contracted with Policy Studies Associates (PSA) to evaluate the implementation of the 4-H Science, Engineering and Technology (SET) Initiative. The goals of this initiative are to increase the number and quality of science, engineering, and technology programs that 4-H offers around the country, and to increase the number of youth involved in these programs. Objectives for the SET initiative are to increase SET interest and literacy among youth; to increase the number of youth pursuing post-secondary education in SET; and to increase the number of youth pursuing SET careers.

Annually, more than 6 million youth participate in 4-H, which is implemented by 106 Land-Grant Universities and Colleges (LGUs) in more than 3,000 counties as a part of the Cooperative Extension System. National leadership is provided by 4-H National Headquarters at the National Institute for Food and Agriculture, USDA, and National 4-H Council, which is the national nonprofit partner of 4-H and the Cooperative Extension System. National 4-H Council focuses on fund raising, branding, communications, and legal and fiduciary support to 4-H programs.

4-H has set an enrollment goal: by the end of 2013, one million youth who have never before been in 4-H will enroll in SET programs. In order to meet this goal, 4-H has sought since 2006 to increase its capacity and infrastructure for providing 4-H SET programming. As part of this effort, 4-H formed the National 4-H SET Leadership Team, which consists of national, state and county-level 4-H professionals. In addition, 4-H designated 101 individuals as SET Liaisons at Land Grant Universities (LGUs) around the country to help implement SET programs and to recruit youth into these programs. The National 4-H SET Leadership Team has also provided an outline of SET program requirements, called the 4-H SET Checklist, for universities to use as a guide in the development of SET programs.

In 2007 through 2008, 56 LGUs with extension offices that oversee 4-H programs completed Plans of Action, which outlined their plans for implementing 4-H SET programming over the next five years in the programs they oversee. These Plans of Action addressed program design, partnerships, professional development, delivery methods, curricula, evaluation and research, marketing and communications, and funding. This evaluation asked these LGUs to report on their progress in these areas and to reflect on the usefulness of their Plans of Action. Their responses are described in the Implementation of SET Programming section of this report.

In order to evaluate the progress of the SET initiative, 4-H needs to be able to collect accurate data on programs and participants. Currently, state-level 4-H professionals submit data about their 4-H programs and participants using an annual federal report. However, states use a variety of systems to track their programs and participants. Because of concerns that state data might be inconsistent or might lack the detail necessary to evaluate the SET initiative's progress, Noyce evaluation funds were used to develop an Enrollment Survey to better capture data about SET programs and participants. Programs that meet the requirements of the 4-H SET Checklist

are defined as “SET Ready.” This evaluation’s Enrollment Survey was the first attempt to capture data specifically about SET Ready programs. The results of this Enrollment Survey are described in the Enrollment in SET Ready Programs section of this report.

In addition to this evaluation’s Enrollment Survey, National 4-H Council is currently developing a web-based reporting system that is designed to collect 4-H SET data. In the future, 4-H intends to use this system in conjunction with the Enrollment Survey in order to collect more data about the SET initiative.

This report describes the current extent of SET programming overseen by the LGUs that participated in this study, as well as the successes and challenges these LGUs have had thus far in implementing SET. A future report will address youth engagement, reporting data from a survey that will be administered to youth involved in SET programs around the country.

## Methods

This phase of the SET evaluation was designed to collect a common core of data from all 56 LGUs who completed Plans of Action and intended to implement SET programs. SET Liaisons and State Program Leaders in each of these LGUs were asked to complete the first two surveys described below, and were told they could collaborate with others in their office to do so.

***State Implementation Survey.*** This online survey was designed to capture information about LGU’s progress in the early stages of SET program implementation. Respondents were asked to report on programs at all levels of SET “readiness.”

***Enrollment Survey.*** The goal of this online survey was to understand the current status of 4-H SET Ready programming and SET Ready youth enrollment nationwide. In contrast to this study’s State and County Implementation Surveys, the Enrollment Survey asked respondents, to the extent they were able, to report only on programs that met the definition of “SET Ready.” The survey included a copy of the 4-H SET Checklist, to which respondents were asked to refer when selecting programs to include in their survey totals.

***County Implementation Survey.*** Like the State Implementation Survey, the County Implementation Survey was designed to capture information about progress in the early stages of SET program implementation, but from a local perspective. There was no Enrollment Survey for counties. SET Liaisons and State Program Leaders were sent a link to the County Implementation Survey, which they were asked to forward to each of the counties whose SET programming they oversaw. County-level 4-H staff then filled out and submitted online surveys, noting which LGU’s extension office oversees their programming and the name of their county. Overall, the response rate for the County Implementation Survey was 30 percent, which means the data do not adequately represent all counties. A summary of the results of the County Implementation Survey are included in the main report, and full results are available in a separate document.

## Implementation of SET Programming: Key Findings

The State Implementation Survey was designed to capture information about the current state of 4-H SET programming around the country, addressing the following questions:

- To what extent have LGUs' Plans of Action been useful in guiding their work in implementing SET programming?
- What strategies have LGUs used to implement SET programming?
- What successes have LGUs experienced, and what challenges have they encountered in their efforts to implement SET programming?

PSA received 42 State Implementation Surveys for a response rate of 75 percent.

### Partnerships

In order to effectively implement SET programming, LGUs and programs need to have effective partnerships in place. Thirty out of 42 (71 percent) of responding LGUs report having some type of partnership to support SET programming. The most prevalent types of partnerships reported were within respondents' own LGUs and with nonprofit organizations (Exhibit ES1).

**Exhibit ES1  
Types of Partnerships**

Type of Organization	Percent of LGUs that have a partnership (n=30)
Departments within LGU	90
Non-profit organizations	90
School districts	87
Businesses	77
Other colleges or universities	60
National 4-H SET partners	60
Local government agencies	53
Federal gov. agencies other than USDA	50
Faith-based organizations	23
Media organizations	23
Other	10

Exhibit reads: Ninety percent of LGUs with partnerships reported having partnerships with their LGU's departments.

The contributions that LGUs reported receiving most often from partner organizations included volunteers or mentors; help with recruiting participants; and programs, activities or services for participants. School districts on average provided the most volunteers per LGU, followed by faith-based organizations and businesses.

**Exhibit ES2  
Contributions That Partners Make to Programs**

<b>Contribution of Partner Organization</b>	<b>Percent of LGUs (n=30)</b>
Volunteers or mentors from their organization	93
Help with recruiting participants	90
Programs, activities or services for participants	90
Funding through grants and contracts	87
Donation of facilities or space	87
Training for 4-H staff/ volunteers	77
Donation of materials or supplies	67
Transportation for participants	30

Exhibit reads: Ninety-three percent of LGUs with partnerships had a partner that contributed volunteers or mentors from their organization.

Some responding LGUs reported that they have had difficulty establishing strong partnerships to support SET programming. The greatest challenge LGUs reported was a lack of resources to seek out partnerships, including limited staff time.

**Staffing and Professional Development**

Like all 4-H programs, effective SET programs require staff who have the ability to create both a positive environment for youth and opportunities for experiential learning. In addition to this ability, staff in SET programs must also understand how to teach content and skills related to science, engineering, and technology. Overall, LGUs reported difficulties in finding staff with enough expertise to lead SET programming. Limited funding also posed challenges for LGUs: 83 percent reported that limited funding to hire staff with SET expertise was a major challenge, and 83 percent reported that limited funding to train staff and volunteers in 4-H SET program delivery was a major challenge.

Almost all LGUs who responded to the survey reported that there were at least a few professional development opportunities in their state for 4-H staff and volunteers to build their program delivery skills for instructing youth in SET areas. Seventy-three percent of LGUs

reported that there were a few opportunities, and twenty percent said there were many opportunities. Acquiring funding for professional development was a major challenge for LGUs, especially for travel and staff time.

## **Curriculum**

The 4-H SET initiative seeks to make the scientific aspects of programming explicit and, in doing so, to improve participants' skills in and understanding of the SET fields. In order to begin a new SET program or remake an established program to focus on SET, LGUs need suitable curricula that programs can use.

Most often, programs are integrating SET concepts into established 4-H programs and adapting existing curricula developed outside of 4-H for 4-H SET programming. One reason that these two approaches to developing programming were the most common could be that they likely require less money, staff time, and staff expertise than would be required to develop SET curricula from scratch (which fewer LGUs reported doing). Few LGUs reported that programs use any of the approaches listed on the survey "to a great extent," indicating that efforts to develop 4-H SET curriculum in most states are not yet in full swing.

## **Evaluation**

Almost all LGUs reported using or planning to use some form of evaluation for the SET programs they run. The most common approach reported was developing evaluation tools such as surveys, focus groups, or observations to assess 4-H SET programming: 40 percent of LGUs are currently doing so. Thirty-four percent are currently analyzing data from 4-H SET evaluations.

The greatest reported challenge to evaluating 4-H SET programming was a lack of sufficient resources to pay staff to spend time on evaluation (Exhibit ES3). LGUs also reported that they lack sufficient resources to train staff and volunteers to use evaluation tools.

## **Marketing and Communications**

Almost all LGUs reported using or planning to use a variety of approaches to market 4-H SET programming and communicate with others about 4-H SET. Many LGUs reported that they are informing local schools about 4-H SET and requesting their involvement and support (81 percent are currently doing so). By using their established relationships and building on shared interests, local programs have had success in marketing SET programming to schools.

In addition, 78 percent of LGUs report that they are informing university faculty and students in science, engineering, and technology departments about 4-H SET and requesting their involvement. About two thirds of LGUs reported that they hold community events to improve public awareness of SET.

**Exhibit ES3**  
**Challenges to Evaluating SET Programming (n=41)**

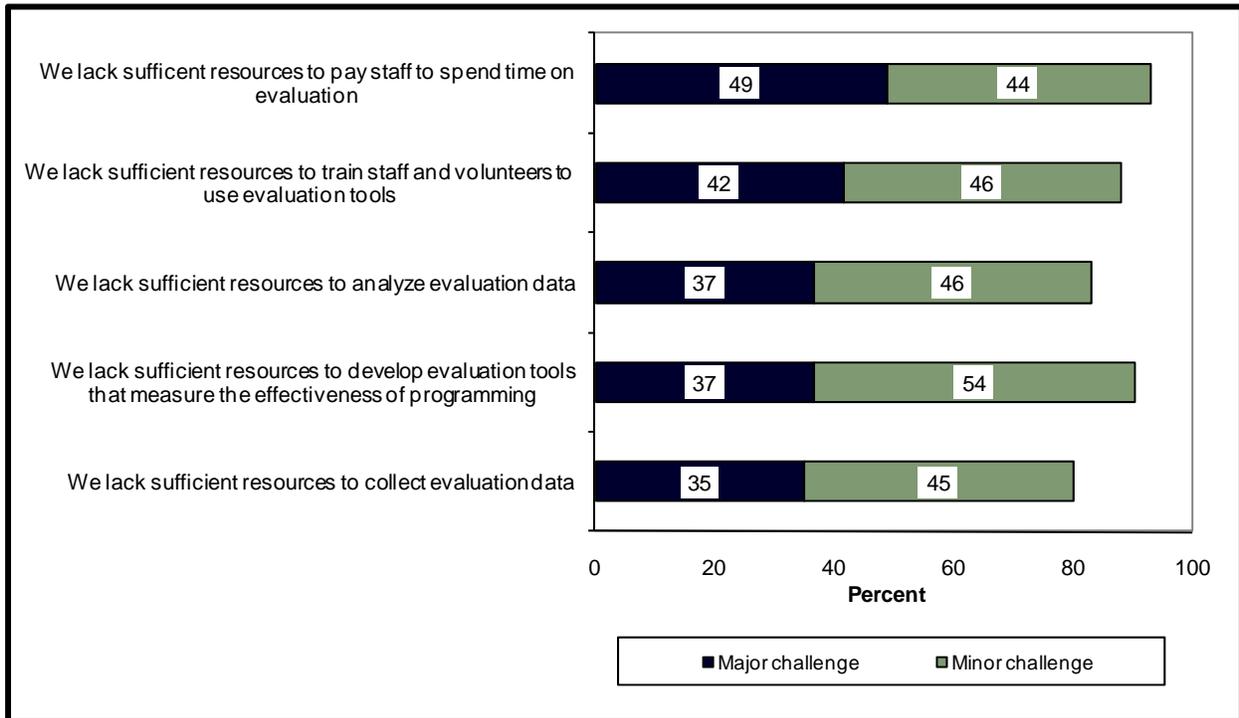


Exhibit reads: Forty-nine percent of 4-H SET programs reported that their lack of sufficient resources to pay staff to spend time on evaluation is a major challenge.

The most significant challenge that LGUs face in marketing 4-H SET programming is limited funding, followed by limited staff time, resources or expertise to market 4-H SET programming.

**Funding**

As indicated in the responses reported above, LGUs often point to a lack of funds as an impediment to moving forward with SET programming. LGUs’ most common approaches to securing funding for 4-H SET programming were seeking private grants and seeking federal, state, or local government funds. Seventy-eight percent of LGUs reported currently seeking private grants, and 78 percent of LGUs reported seeking government funds. In addition, 73 percent of LGUs reported soliciting funding or in-kind donations from businesses, and 50 percent of LGUs reported soliciting funding or in-kind donations from 4-H Friends and Alumni Association.

The most common challenge LGUs faced in securing funding for 4-H SET programming was that staff lack the time and/or resources to seek funding for 4-H SET programming, and the second most common challenge was that staff lack expertise in grant writing and seeking funding (Exhibit ES4).

While LGUs reported that staff often lack the resources to pursue funding opportunities, they do know where to find funding. Few LGUs (only five percent) said that a lack of clarity on where to look for grants or government funding was a major challenge.

**Exhibit ES4**  
**Challenges to Funding 4-H SET Programming (n=41)**

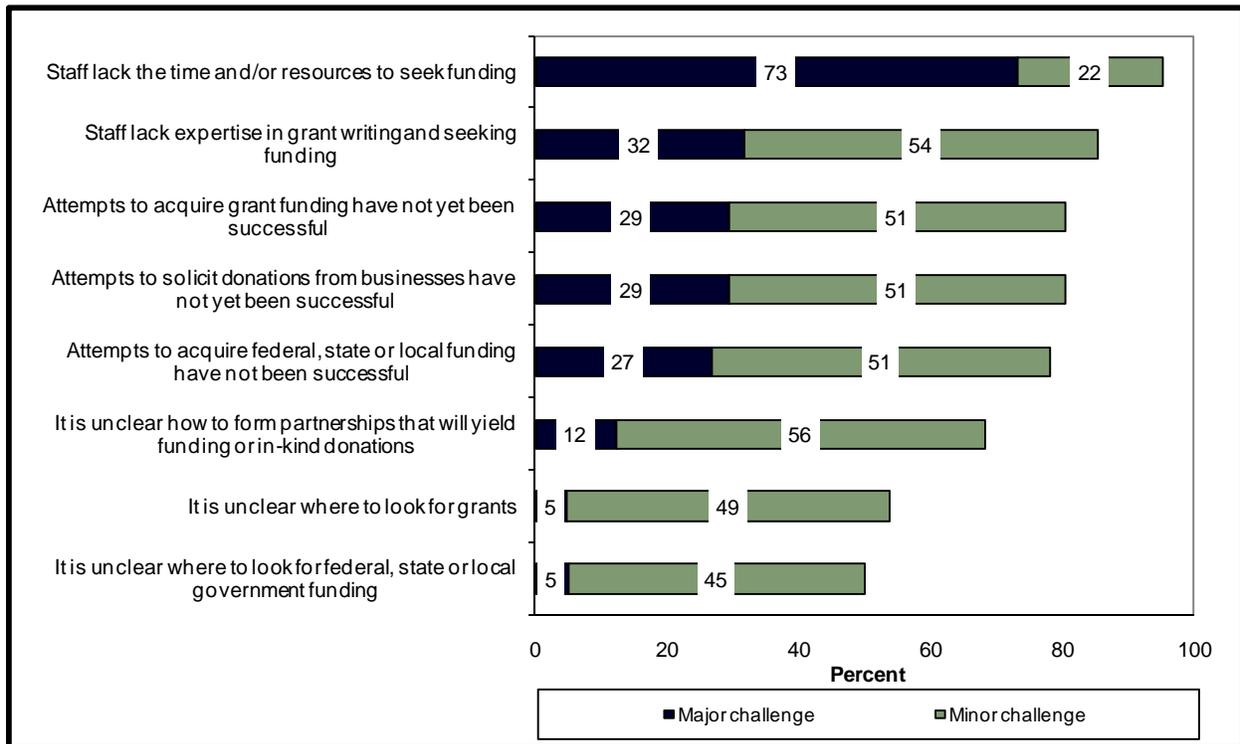


Exhibit reads: Seventy-three percent of 4-H SET programs reported that staff's lack of time and/or resources to seek funding is a major challenge.

### Relationship with National 4-H SET Leadership Team

Overall, LGUs reported that communication about expectations between LGUs and the National 4-H SET Leadership Team (LT) has been clear, and that the LT has provided feedback regarding their Plans of Action. However, fewer LGUs thought that the LT had provided the guidance needed to implement SET programming, provided ideas on how to find funding, or provided funding.

### Enrollment in SET Ready Programs: Key Findings

The evaluation conducted an Enrollment Survey in order to measure the number of SET Ready programs around the country and the number of youth involved in those programs. This survey was also designed to discover the extent to which LGUs are currently able to provide such numbers. PSA received 30 Enrollment Surveys for a response rate of 54 percent.

## Availability of SET Ready Enrollment Data

- Seventeen of the 30 LGUs that responded to the Enrollment Survey were able to provide the number of SET Ready programs that their LGUs oversee. The total number of SET Ready programs in these LGUs was 736.
- The average number of programs per LGU was 43, the median was 10, and the standard deviation was 76.

## Youth Enrolled in SET Ready Programs

- Sixteen LGUs were able to provide information about the number of youth enrolled in SET Ready programs in the most recent year. In these 16 LGUs, the total youth enrollment in SET Ready programs was 535,752 (Exhibit ES 5).
- The average number of youth enrolled by LGU was 33,485, the median was 2,525, and the standard deviation was 73,183. The numbers LGUs reported were extremely widely distributed: the smallest number reported was 12 youth, while the largest number was 282,665.
- These wide variations in reported numbers indicate not only the wide range of SET Ready program enrollment, but also potential inconsistencies in reporting methods.

**Exhibit ES5**  
**Youth Enrolled in SET Ready Programs, by Region**

	Northeast (n=3)	North Central (n=3)	South (n=4)	West (n=4)	1890 (n=2)	Total (n=16)
Total youth enrolled	4,811	392,210	49,540	89,104	87	535,752
Mean number of youth per LGU	1,604	130,737	12,385	22,276	44	33,485
Median	2,203	108,519	7,863	8,656	44	2,525
Standard deviation	1,265	142,128	15,081	33,203	45	73,183

Exhibit reads: In the three LGUs in the Northeast region that reported data, there were 4,811 youth enrolled in SET Ready programs.

## Youth Enrolled for the First Time in 2008

One of the goals of the 4-H SET initiative is to enroll one million new youth in SET programs, and in order to assess progress towards this goal LGUs were asked to report the number of youth in SET Ready programs who had never before been in 4-H.

- Nine LGUs reported a total of 28,528 youth enrolled in SET Ready programs in 2008 who had never before been in 4-H (Exhibit ES 6).
- The number of new youth per LGU ranged from a minimum of eight to a maximum of 24,670, reported by one LGU in the North Central region. When this LGU is excluded, the total number of youth enrolled for the first time is 3,858, the average number of youth enrolled in each LGU is 482, the median is 175, and the standard deviation is 604.
- These wide variations in reported numbers indicate potential inconsistencies in reporting methods.
- In addition, as with much of the program and enrollment data, the small number of LGUs that were able to report this information means that these numbers should be interpreted with caution.

**Exhibit ES6**  
**Youth Enrolled in SET Ready Programs**  
**for the First Time in 2008, by Region**

	Northeast (n=2)	North Central (n=2)	South (n=2)	West (n=1)	1890 (n=2)	Total (n=9)
Total youth enrolled in SET Ready programs for the first time in 2008	1,345	24,869	1,731	500	83	28,528
Mean number of youth per LGU	673	12,435	866	500	42	3,170
Median	673	12,435	866	500	42	199
Standard deviation	739	17,304	1,083	-	47	8,082

Exhibit reads: In the two Northeast Region LGUs that reported data, there were 1,345 youth enrolled in SET Ready programs for the first time in 2008.

## Racial and Ethnic Background of SET Participants

Demographic information about participants in SET Ready programs was not widely available from LGUs. Eleven LGUs were able to report the racial backgrounds of youth in SET

Ready programs, and 10 LGUs were able to report whether youth in SET Ready programs were Hispanic or not.

- According to these LGUs, 82 percent of youth in SET Ready programs are white, 13 percent are African American, 3 percent are Native American, and the remaining 2 percent are of other racial backgrounds.
- In addition, 14 percent of youth in the 10 LGUs who reported this information are Hispanic.

### **SET Ready Program Delivery Methods**

- Like traditional 4-H programs, SET Ready programs employ a variety of delivery methods, most often 4-H clubs, special interest clubs, and 4-H after school (according to the 15 LGUs that provided information on delivery methods.)

### **SET Ready Program Curricular Areas**

- In the 14 LGUs that were able to provide the curricular areas of their SET programs, animal science and technology and engineering programs were most prevalent, followed by environmental science and agricultural science.

## **Conclusions**

- According to the LGUs responding to the survey, many 4-H staff, volunteers, and partner organizations are enthusiastic about the SET initiative and agree that its goals are important.
- Some LGUs have been able to build strong partnerships to support SET programming, and have begun to integrate SET programming into their extension services in ways that fit their extension area's needs.
- The central factors reported to affect an LGU's capacity to promote SET programming are funding and staff resources (including the time required to seek funding). These two factors affect almost all aspects of SET implementation.
- LGUs report knowing where to seek funding for 4-H SET, but lack the staff time and/or expertise to secure funds.
- The qualities that make 4-H programming easily adaptable to local interests and needs can pose difficulties for collecting systematic data on a national scale.

- The wide variations in the SET Ready program and enrollment data collected for this evaluation indicate inconsistencies in the methods LGUs use to track and report such data.

## Recommendations

- More guidance from the National Leadership Team on how to implement SET in the face of limited funding and staff resources would aid LGUs in their implementation of the SET initiative.
- LGUs would also benefit from guidance from the National Leadership Team on how best to integrate SET concepts and instructional techniques into existing programming. This guidance could address ways of offering more and better SET programs in spite of limited budgets and staff and volunteer resources.
- LGUs need support in training staff and volunteers to deliver 4-H SET programming on a large scale. Program evaluation is another area in which LGUs need more support or encouragement; the widespread reports of inadequate funding for evaluation point to a need for some combination of funding and guidance.
- As one means of providing guidance on all aspects of program implementation, the National Leadership Team could facilitate conversations among leaders at various LGUs so that they can learn from each other's experiences in implementing SET. For example, LGUs who have not yet built partnerships to support SET would benefit from the advice of those LGUs who have been able to do so.
- LGUs would benefit from the support from the National Leadership Team in pursuing funds for 4-H SET, such as training for staff and volunteers on writing grant applications.
- In order to accurately assess the progress of the SET initiative, the data systems that LGUs use to collect program information need greater uniformity, with agreed-upon definitions of key terms such as "program" and "project" for LGUs to use in data collection.
- LGUs appear to need guidance or resources in addition to the SET Checklist so that they are able to determine accurately which of their programs are SET Ready.

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## Introduction

With the support of the Noyce Foundation, National 4-H Council has contracted with Policy Studies Associates (PSA) to evaluate the implementation of the 4-H Science, Engineering and Technology (SET) Initiative. The goals of this initiative are to increase the number and quality of science, engineering, and technology programs that 4-H offers around the country, and to increase the number of youth involved in these programs. Objectives for the SET initiative are to increase SET interest and literacy among youth; to increase the number of youth pursuing post-secondary education in SET; and to increase the number of youth pursuing SET careers.

Annually, more than 6 million youth participate in 4-H, which is implemented by 106 Land-Grant Universities and Colleges (LGUs) in more than 3,000 counties as a part of the Cooperative Extension System. National leadership is provided by 4-H National Headquarters at the National Institute for Food and Agriculture, USDA, and National 4-H Council, which is the national nonprofit partner of 4-H and the Cooperative Extension System. National 4-H Council focuses on fund raising, branding, communications, and legal and fiduciary support to 4-H programs.

4-H has set an enrollment goal: by the end of 2013, one million youth who have never before been in 4-H will enroll in SET programs. In order to meet this goal, 4-H has sought since 2006 to increase its capacity and infrastructure for providing 4-H SET programming. As part of this effort, 4-H formed the National 4-H SET Leadership Team, which consists of national, state and county-level 4-H professionals. In addition, 4-H designated 101 individuals as SET Liaisons at LGUs around the country to help implement SET programs and to recruit youth into these programs. The National 4-H SET Leadership Team has also provided an outline of SET program requirements, called the 4-H SET Checklist, for universities to use as a guide in the development of SET programs.

This report describes the current extent of SET programming overseen by the Land Grant Universities (LGUs) that participated in this study, as well as the successes and challenges these LGUs have had thus far in implementing SET. A future report will address youth engagement, reporting data from a survey that will be administered to youth involved in SET programs around the country.

In order to evaluate the progress of the SET initiative, 4-H needs to be able to collect accurate data on programs and participants. Currently, state-level 4-H professionals submit data about their 4-H programs and participants using an annual federal report. However, states use a variety of systems to track their programs and participants. Because of concerns that state data might be inconsistent or might lack the detail necessary to evaluate the SET initiative's progress, Noyce evaluation funds were used to develop an Enrollment Survey to better capture data about SET programs and participants. Programs that meet the requirements of the 4-H SET Checklist are defined as "SET Ready." This evaluation's Enrollment Survey was the first attempt to capture data specifically about SET Ready programs. The results of this Enrollment Survey are described in the Enrollment in SET Ready Programs section of this report.

In addition to this evaluation's Enrollment Survey, National 4-H Council is currently developing a web-based reporting system that is designed to collect 4-H SET data. In the future, 4-H intends to use this system in conjunction with the Enrollment Survey in order to collect more data about the SET initiative.

In 2007 through 2008, 56 LGUs with extension offices that oversee 4-H programs completed Plans of Action, which outlined their plans for implementing 4-H SET programming over the next five years in the programs they oversee. These Plans of Action addressed program design, partnerships, professional development, delivery methods, curricula, evaluation and research, marketing and communications, and funding. This evaluation asked these LGUs to report on their progress in these areas and to reflect on the usefulness of their Plans of Action. Their responses are described in the Implementation of SET Programming section of this report.

The Enrollment in SET Ready Programs section of this report describes the extent to which LGUs were able to provide data about SET Ready programs, and displays the data they submitted regarding the number of existing SET Ready programs and the youth enrolled in those programs. Specific research questions addressed by the Enrollment Survey were the following:

- To what extent are LGUs able to provide 4-H SET Ready enrollment data?
- How many youth were enrolled in 4-H SET Ready programming in the most recent year? How many of these youth were enrolled in 4-H programming for the first time?
- What are the demographic characteristics of youth enrolled in 4-H SET Ready programming?
- Which activity categories are most often addressed in 4-H SET Ready programs?
- Which delivery methods do 4-H SET Ready programs most often use?

The Implementation Survey was designed to capture information about the current state of 4-H SET programming around the country, addressing the following questions:

- To what extent have LGUs' Plans of Action been useful in guiding their work in implementing SET programming?
- What strategies have LGUs used to implement SET programming?
- What successes have LGUs experienced, and what challenges have they encountered in their efforts to implement SET programming?

## Methods

***Enrollment Survey.*** SET Liaisons and State Program Leaders in each of 56 LGUs were asked to complete the Enrollment Survey, and were told they could collaborate with others in their office to do so. The goal of this online survey was to understand the current status of 4-H SET Ready programming and SET Ready youth enrollment nationwide. In contrast to this study's State and County Implementation Surveys (described below), in which respondents were asked to report on programs at all levels of SET "readiness," the Enrollment Survey asked respondents, to the extent they were able, to report only on programs that met the definition of "SET Ready." The survey included a copy of the 4-H SET Checklist, to which respondents were asked to refer when selecting programs to include in their survey totals. PSA received 30 Enrollment Surveys for a response rate of 54 percent.

***State Implementation Survey.*** SET Liaisons and State Program Leaders in each of 56 LGUs were asked to complete the State Implementation Survey, and were told they could collaborate with others in their office to do so. This online survey was designed to capture information about LGU's progress in the early stages of SET program implementation. PSA received 42 State Implementation Surveys for a response rate of 75 percent.

***County Implementation Survey.*** Like the State Implementation Survey, the County Implementation Survey was designed to capture information about progress in the early stages of SET program implementation, but from a local perspective. There was no Enrollment Survey for counties. SET Liaisons and State Program Leaders were sent a link to the County Implementation Survey, which they were asked to forward to each of the counties whose SET programming they oversaw. County-level 4-H staff then filled out and submitted online surveys, noting which LGU's extension office oversees their programming and the name of their county. Overall, the response rate for the County Implementation Survey was 30 percent, which means the data do not adequately represent all counties. Full results for the County Implementation Survey are available in a separate document.

## Enrollment in SET Ready Programs

Land Grant Universities and 4-H programs have been collecting certain program and enrollment data and reporting it to the National 4-H Council for many years using a federal reporting system called ES 237. They report the number of youth involved in 4-H in their extension areas by grade, racial/ethnic background, community type (size of town or city), program delivery type (such as Community Club or after school club), and program topic (such as Animal Science or Plant Science).

LGUs have a variety of systems in place for collecting data on 4-H programs and the youth enrolled in those programs. Some track youth individually, while others do not. LGUs that do not track youth individually may count youth more than once if they are involved in more than one 4-H program or activity.

This Enrollment Survey, completed by SET Liaisons and State Program Leaders in 30 LGUs, was the first attempt to capture data specifically about SET Ready programs (i.e., those that meet the requirements of the SET Checklist). While several of the program topics in the ES 237 fall under science, engineering, and technology, not all programs in these topic areas are necessarily SET Ready. For example, a given LGU might have some Animal Science programs that would qualify as SET Ready and some that would not. In such cases, respondents might not have been able to report data directly from their ES 237 systems. As one respondent wrote, “Please note - I can give you the projects that are SET Ready, but not necessarily the number of programs in that project area that are SET ready throughout the state.” There may also be some confusion among 4-H staff about terminology such as “project” and “program” that could affect the numbers reported below.

Of the 30 LGUs that responded to the enrollment survey, nine were unable to provide any data on their SET Ready programs. Several of the respondents who could not provide data said that at this time, they have no method in place to evaluate whether or not a particular program qualifies as “SET Ready.” Although respondents were provided with the SET Checklist at the beginning of the enrollment survey, accurate designation of programs as SET Ready or not SET Ready was ultimately not possible for some responding LGUs. For example, one respondent wrote, “There has not been a system developed to determine if a program is ‘SET Ready,’ based upon the criteria outlined in the SET Ready checklist.” Another respondent wrote, “Each county was asked to create their own 4-H SET plan. We have not yet conducted a statewide survey of county 4-H SET implementation.”

One respondent wrote that the LGU could not provide the data requested in the enrollment survey, because it cannot access some data at the state level: “Our current enrollment system does not allow us to access the needed information on the state level. Information on demographics, new [youth enrolled in 4-H] ... needs to be done at the county level. We are being trained in 4-H Access this December and are planning to have category for SET so we can easily track in the future, but [that is] still a ways off.” Another respondent said the LGU needed more data from counties: “We can provide data on some SET ready programs, but definitely not all of them without having input from all counties. [...] As it is, we are using ES 237 data - which will not break down SET Ready for us.”

Since LGUs report data on different yearly timelines (for example, from September 1 to August 31 or from January 1 to December 31), in order for the data in the enrollment survey to be as complete as possible, LGUs were asked to respond based on their most recent complete year of data. Therefore, data submitted do not necessarily represent the state of SET programming as of October 2009, but should represent a full year’s worth of data for each LGU.

Seventeen of the 30 LGUs that responded to the Enrollment Survey were able to provide the number of SET Ready programs that their LGUs oversee. Only a few LGUs were able to report certain types of data, such as the number of youth participating in SET Ready programs who were enrolled in 4-H for the first time in 2008 (Exhibit 1).

## Number and Topics of SET Ready Programs

One of the goals of the Enrollment Survey was to find out how many programs around the country are currently SET Ready. The total number of SET Ready programs in the 17 LGUs that were able to provide this information was 736. The average number of SET Ready programs per LGU was 43, the median was 10, and the standard deviation was 76 (Exhibit 2).

**Exhibit 1**  
**Types of Enrollment Data Provided by LGU's (n=30)**

	Number of LGUs that provided information	Percent of LGUs that provided information
Number of "SET Ready" programs operating in state/LGU area	17	57
Number of youth enrolled in 4-H "SET Ready" programming	16	53
Number of "SET Ready" programs that use various delivery methods (e.g., 4-H Club, Special Interest Club, 4-H Afterschool)	15	50
Number of "SET Ready" programs that fall under particular activity categories/curricular areas	14	47
Ages of youth enrolled in 4-H "SET Ready" programs	11	37
Racial background of youth enrolled in 4-H "SET Ready" programs	11	37
Number of youth who identify as Hispanic enrolled in 4-H "SET Ready" programs	10	33
Number of "SET Ready" programs using the "Power of Wind" curriculum	9	30
Number of youth participating in "SET Ready" programs who were enrolled in 4-H programming for the first time in 2008	9	30

Exhibit reads: Seventeen of the LGUs that responded to the Enrollment Survey (57 percent) were able to provide the number of "SET Ready" programs operating in their extension area.

**Exhibit 2**  
**Number of SET Ready Programs, by Region**

	Northeast (n=3)	North Central (n=4)	South (n=5)	West (n=3)	1890 (n=2)	Total (n=17)
Total number of SET Ready programs	188	291	57	189	11	736
Mean number of SET Ready programs per LGU	63	73	11	63	6	43
Median	14	18	10	16	6	10
Standard deviation	93	120	9	93	6	76

Exhibit reads: In programs in the Northeast region that reported data, there are 188 SET Ready programs.

SET programming covers a wide range of topics. Some are already covered by traditional 4-H programming, such as animal science, and are being revised to meet SET Ready standards. Others, such as rocketry and robotics, were new to 4-H when the SET initiative began. In order to find out which topics are currently being addressed in SET Ready programs, LGUs were asked to report the number of programs they have in each of the following categories. Among the LGUs surveyed, 14 were able to provide the curricular areas of their SET programs. Animal science and technology and engineering programs were most prevalent, followed by environmental science and agricultural science (Exhibit 3).

**Exhibit 3**  
**SET Ready Program Curricular Areas (n=14)**

Program Category / Curricular Area	Number of Programs	Percent of Total Programs
Animal science	101	26
Technology and engineering	84	22
Environmental science	47	12
Agricultural science	40	10
Rocketry	21	5
Food science	20	5
Robotics	20	5
Physical sciences	16	4
Biological sciences	13	3
GIS/GPS	11	3
Earth and space science	10	3
Other	4	1
Energy	1	<1
<i>Total</i>	388	100

Exhibit reads: In the 14 LGUs that reported the curricular areas of their SET Ready programs, there were 101 Animal Science programs.

**Exhibit 4**  
**Power of Wind Programs**

Region	Number of POW Programs
Northeast (n=2)	4
North Central (n=1)	3
South (n=2)	5
West (n=1)	1
1890 (n=1)	2
<i>Total</i> (n=7)	15

Exhibit reads: The two Northeast region LGUs that reported their POW programs have a total of four POW programs.

Power of Wind is a 4-H-developed SET curriculum about wind power. Of the LGUs surveyed, seven were able to report on the number of Power of Wind programs implemented (Exhibit 4). One respondent commented that the Power of Wind curriculum was not adopted until 2009 in that LGU. This may be the case in other LGUs as well.

4-H programs traditionally use many delivery methods, including clubs that meet outside of school, after-school programs, different types of camps, and individual projects. SET Ready programs also employ a variety of delivery methods, most often clubs, special interest clubs, and after school. Fourteen LGUs were able to report the program delivery methods that their SET Ready programs employed (Exhibit 5).

**Exhibit 5**  
**SET Ready Program Delivery Methods, by Region (n=14)**

	Northeast (n=2)	North Central (n=3)	South (n=6)	West (n=1)	1890 (n=2)	Total (n=14)
4-H Club	136	117	29	0	1	283
Special interest club	0	137	20	0	4	161
4-H afterschool	50	71	15	10	0	146
School enrichment	20	42	3	0	0	65
Self-directed project	8	23	6	0	0	37
Day camp	0	23	8	2	1	34
Residence camp	0	12	1	1	0	14
Academic camp	0	6	0	0	1	7
<i>Total</i>	214	431	82	13	7	747

Exhibit reads: In the two Northeast LGUs that reported this information, 136 SET Ready programs use the 4-H Club delivery method.

## Youth Enrolled in SET Ready Programs

Out of the 21 LGUs who provided any data in the enrollment survey, 16 were able to provide the number of youth enrolled in SET Ready programs in their LGUs. When these responses were totaled, the number of youth enrolled was 535,752. The mean number of youth enrolled in SET Ready programs by LGU was 33,485, the median was 2,525, and the standard deviation was 73,183 (Exhibit 6). The numbers reported by LGUs were extremely widely distributed: the smallest number reported was 12 youth, while the largest number was 282,665. These wide variations in reported numbers indicate not only the wide range of SET Ready program enrollment, but also potential inconsistencies in reporting methods.

**Exhibit 6**  
**Youth Enrolled in SET Ready Programs, by Region**

	Northeast (n=3)	North Central (n=3)	South (n=4)	West (n=4)	1890 (n=2)	Total (n=16)
Total youth enrolled	4,811	392,210	49,540	89,104	87	535,752
Mean number of youth per LGU	1,604	130,737	12,385	22,276	44	33,485
Median	2,203	108,519	7,863	8,656	44	2,525
Standard deviation	1,265	142,128	15,081	33,203	45	73,183

Exhibit reads: In the three LGUs in the Northeast region that reported data, there were 4,811 youth enrolled in SET Ready programs.

One of the goals of the 4-H SET initiative is to enroll one million new youth in SET programs, and in order to assess progress towards this goal LGUs were asked to report the number of youth in SET Ready programs who had never before been in 4-H. According to data submitted by nine responding LGUs, in 2008 there were 28,528 youth enrolled in SET Ready programs who had never before been in 4-H (Exhibit 7).

The number of new youth per LGU ranged from a minimum of eight to a maximum of 24,670. One LGU in the North Central region accounts for almost 25,000 of these youth. When this LGU is excluded, the total number of youth enrolled for the first time is 3,858, the mean number of youth enrolled in each LGU is 482, the median is 175, and the standard deviation is 604. These wide variations in reported numbers indicate potential inconsistencies in reporting methods. In addition, as with much of the program and enrollment data, the low number of LGUs that were able to report this information means that these numbers should be interpreted with caution.

**Exhibit 7**  
**Youth Enrolled in SET Ready Programs**  
**for the First Time in 2008, by Region**

	Northeast (n=2)	North Central (n=2)	South (n=2)	West (n=1)	1890 (n=2)	Total (n=9)
Total youth enrolled in SET Ready programs for the first time in 2008	1,345	24,869	1,731	500	83	28,528
Mean number of youth per LGU	673	12,435	866	500	42	3,170
Median	673	12,435	866	500	42	199
Standard deviation	739	17,304	1,083	-	47	8,082

Exhibit reads: In the two Northeast Region LGUs that reported data, there were 1,345 youth enrolled in SET Ready programs for the first time in 2008.

Many LGUs had difficulty providing information about enrollment in SET Ready programs because they currently cannot identify such programs in their data records. In addition, a few LGUs mentioned that they do not collect individual information (such as age or race) on all youth involved in 4-H programs. For example, one LGU reported that it only collects information on individual youth if they are enrolled in clubs, not in any other delivery mode, and therefore has incomplete information on youth enrollment. Another LGU reported that while information such as the ages and racial backgrounds of participating youth is available at the state level overall, this information cannot be separated out by specific program areas such as SET: “[our] database shows race for overall state involvement, but not for specific programs.”

**Age of SET participants.** 4-H programs traditionally serve youth of all ages, and on the ES 237 form they report information about the grades of youth served. In order to find out whom SET Ready programs are serving, the Enrollment Survey asked respondents to report the number of youth in SET Ready programs by different age groups. Eleven LGUs were able to report this information for almost 121,000 youth. Thirty-nine percent of these youth were between the ages of five and eight, 36 percent were between nine and eleven, 17 percent were between 12 and 14, and nine percent were between 15 and 19. Respondents who could not report the ages of youth in SET Ready programs said they could not do so for a few reasons: because they collect information by grade, or because they do not have a method to distinguish between SET and SET Ready programs.

**Racial and ethnic background of SET participants.** Eleven LGUs were able to report the racial backgrounds of youth in SET Ready programs, and 10 LGUs were able to report whether youth in SET Ready programs were Hispanic or not (Exhibit 8). As with much of the other information requested in this survey, the central reason LGUs could not provide these numbers was that they were not able to differentiate SET Ready programs from other programs.

**Exhibit 8**  
**Racial and Ethnic Background of Youth in SET Ready Programs**

Number of LGUs reporting = 11	Total youth=122,714	Percent of Youth
	White	82
	African American	13
	Native American	3
	Asian American	1
	Native Hawaiian	<1
	Multiple races	<1
	Unknown	<1
Number of LGUs reporting = 10	Total youth=71,942	Percent of Youth
	Not Hispanic	86
	Hispanic	14

Exhibit reads: In the 11 LGUs that reported the racial backgrounds of participants in SET Ready programs, 82 percent of the 122,714 youth were white.

## Implementation of SET Programming

When LGUs filled out Plans of Action in 2007 and 2008, they set out goals for SET programming and outlined the strategies they planned to use to achieve those goals. In order to understand the progress LGUs have made in implementing 4-H SET programming, the State Implementation Survey covered the same topic areas as the Plans of Action: partnerships, staffing and professional development, curriculum, evaluation, marketing and communications, and funding. In each of these areas, respondents reported the tactics and strategies they have used to implement SET programming, the challenges they have faced in the implementation process, and the usefulness of their Plans of Action in these efforts. Last, in order for the National 4-H SET Leadership Team (LT) to learn how effective their various efforts in the SET initiative have been, respondents were asked to reflect on their interactions with the LT.

Although counties did not develop Plans of Action, they were asked to report on a similar set of topics in the County Implementation Survey. Thus, this section of the report briefly summarizes county-level responses regarding: partnerships, staffing and professional development, curriculum, evaluation, marketing and communications, and funding. Because the response rate for the County Implementation Survey was 30 percent, the results of this survey are suggestive rather than conclusive.

### SET Plans of Action

Overall, about half of responding LGUs felt that their Plans of Action (POAs) had been useful either to a great extent or to some extent in various aspects of implementing 4-H SET

programming. As shown in Exhibit 9 below, LGUs were most likely to report that their POAs were useful for building partnerships.

In a comment on building partnerships, one respondent wrote that while the POA has been helpful as a “big picture” guide, it has not been as effective in planning at the local level: “The POA has been used as a basic overview for informing potential partners. However, most of our partnerships are formed on the local level, and each community, and indeed, each club may have a different focus. The POA by itself is not enough information for the partners.” This respondent continued, “Our POA is a very broad overview of everything we hope to accomplish in the state. It would help to have individual county goals included in the POA, along with evaluation tools built in for evaluating county success.”

**Exhibit 9**  
**Usefulness of Plans of Action for 4-H SET Implementation (n=40)**

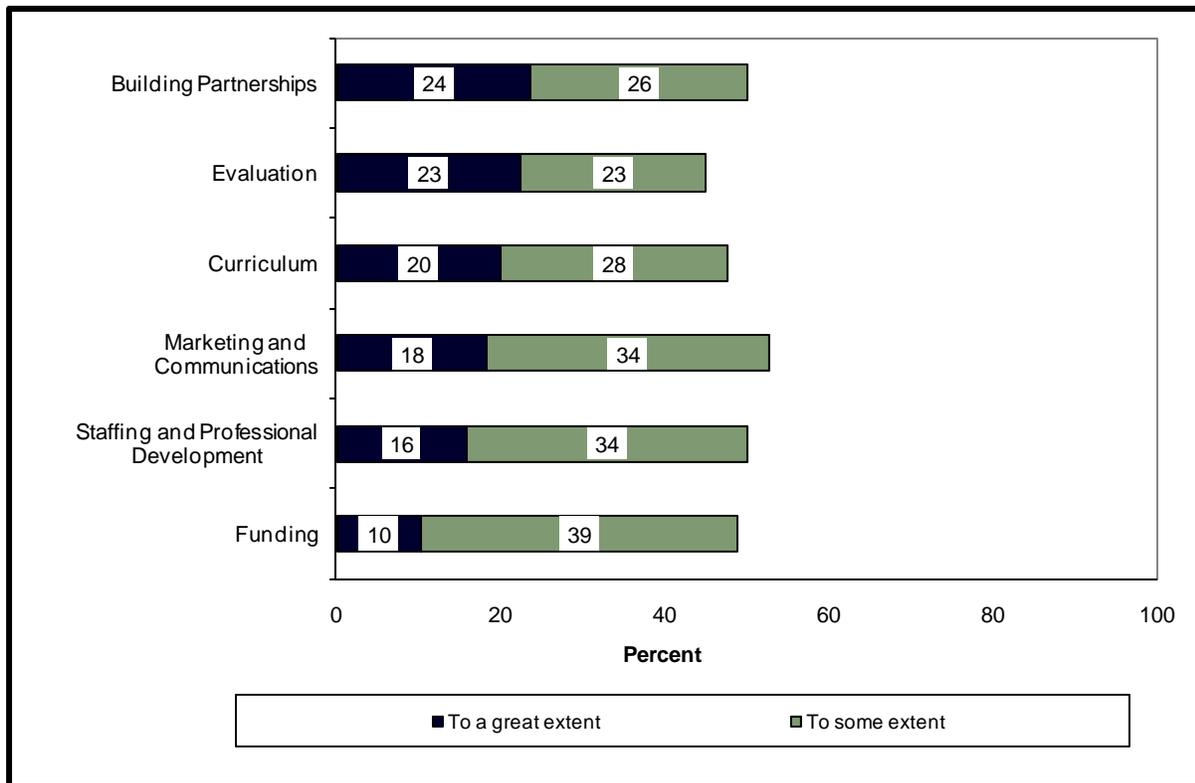


Exhibit reads: Twenty-four percent of respondents reported that their POA had been useful in building partnerships to a great extent, while 26 percent reported it had been useful to some extent.

## Partnerships

The National 4-H Council, 4-H National Headquarters, the U.S. Department of Agriculture, individual LGU extension offices, and 4-H programs at the local level all establish partnerships to benefit 4-H programs. In order to effectively implement SET programming, LGUs and programs need to have effective partnerships in place. In this survey LGUs were

asked to report on the types of organizations with which they have partnerships that support SET, what kinds of contributions the different partners make, and the number of volunteers, if any, who come from each type of partner organization. The most prevalent types of partnerships that LGUs reported were within respondents' own LGUs and with nonprofit organizations. The contributions they reported receiving most often from partner organizations included volunteers or mentors; help with recruiting participants; and programs, activities or services for participants.

**Types of partnerships that support SET.** Thirty out of 42 (71 percent) of responding LGUs report having some type of partnership to support SET programming. Most commonly, LGUs reported having partnerships with departments within their own university, and with nonprofit organizations: 90 percent of LGUs with partners had these types of partnerships (Exhibit 10). Other common partner organization types included school districts, businesses, other universities, and the National 4-H SET partners (such as the National Geographic Education Foundation, U.S. FIRST Robotics, and the National Association of Rocketry.)

**Exhibit 10  
Types of Partnerships**

Type of Organization	Percent of LGUs that have a partnership (n=30)
Departments within LGU	90
Non-profit organizations	90
School districts	87
Businesses	77
Other colleges or universities	60
National 4-H SET partners	60
Local government agencies	53
Federal gov. agencies other than USDA	50
Faith-based organizations	23
Media organizations	23
Other	10

Exhibit reads: Ninety percent of LGUs with partnerships reported having partnerships with their LGU's departments.

One respondent described the variety of types of partnerships the LGU has formed to support SET: “The [LGU] 4-H SET Leadership Team and county-based 4-H SET committees have created partnerships with a variety of organizations and agencies. Informal science centers have demonstrated willingness to partner in a variety of ways, including offering professional development and joint curriculum development efforts. Government agencies have provided resources and expertise in a number of SET programs, including the [state agriculture department] in animal science/biosecurity areas, county GIS departments, and county Ag commissioners. The 4-H SET initiative has created stronger ties within the [state] system and cooperative extension by integrating with existing STEM-related priorities.”

Thirty-five percent of counties that responded to the County Implementation Survey (310 out of 876 counties) reported having partnerships that support SET in their counties. Most often, these counties formed partnerships with school districts: 79 percent of counties with partnerships said they had such partnerships. The next most common types of partnerships that counties reported having were with non-profit organization (59 percent had such partnerships), followed by businesses (52 percent.)

**Contributions of partner organizations to 4-H SET programming.** LGUs reported that their partners were most likely to contribute volunteers and mentors, program activities and services, and to help with recruiting participants. They were least likely to provide transportation services for participants. As shown in Exhibit 11 below, among the 30 LGUs that reported having partnerships to support SET, 93 percent reported that at least one of their partners contributed volunteers or mentors from the organization as part of the partnership.

**Exhibit 11  
Contributions That Partners Make to Programs**

<b>Contribution of Partner Organization</b>	<b>Percent of LGUs (n=30)</b>
Volunteers or mentors from their organization	93
Help with recruiting participants	90
Programs, activities or services for participants	90
Funding through grants and contracts	87
Donation of facilities or space	87
Training for 4-H staff/ volunteers	77
Donation of materials or supplies	67
Transportation for participants	30

Exhibit reads: Ninety-three percent of LGUs with partnerships had a partner that contributed volunteers or mentors from their organization.

Counties that had partnerships in place that support SET programming reported that their partners were most likely to contribute the following: facilities or space (76 percent of counties with partnerships received this from their partners); program activities and services for participants (74 percent); volunteers or mentors from partner organizations (65 percent); and donations of materials or supplies (64 percent).

LGUs that have partnerships that support SET programming most often have partnerships with departments within their own LGUs, with non-profit organizations, with school districts, and with businesses. These “top partners” provide most of the contributions that LGUs receive from partnerships, but not all of them provide the same things. Exhibit 12 below shows the most common contributions that these “top partners” make to SET programming. Departments within

respondents' LGUs are most likely to contribute program activities or services for participants, program volunteers or mentors, and training for 4-H staff and volunteers. Non-profit organizations are most likely to contribute program activities or services for participants, program volunteers or mentors, and funding through grants and contracts. School districts are most likely to donate facilities and space, provide help with recruiting participants, and contribute volunteers or mentors. Businesses are most likely to provide funding through grants or contracts, donate materials or supplies, and contribute program activities and services for participants.

**Exhibit 12**  
**Most Common Contributions Among Top Partners**

<b>Top Partner</b>	<b>Most Common Contributions</b>	<b>Percent of LGUs that received this contribution from this partner</b>
Departments within LGU (n=27)	Program Activities/Services for Participants	82
	Volunteers or Mentors from Partner Organizations	67
	Training for 4H Staff/ Volunteers	67
Non-profit organizations (n=27)	Program Activities/Services for Participants	59
	Volunteers or Mentors from Partner Organizations	56
	Funding through Grants or Contracts	44
School districts (n=26)	Donation of Facilities and Space	77
	Help with Recruiting Participants	73
	Volunteers or Mentors from Partner Organizations	58
Businesses (n=23)	Funding through Grants or Contracts	65
	Donation of Materials or Supplies	61
	Program Activities/Services for Participants	57

Exhibit reads: Eighty-two percent of LGUs with partnerships within their LGU reported that these partnerships provided program activities or services for participants.

Counties that have partnerships that support SET programming most often have partnerships with school districts, non-profit organizations, and businesses. School districts are most likely to provide counties with: donations of facilities or space (71 percent of counties that had partnerships with school districts received such donations); programs, activities or services for participants (61 percent); and help with recruiting participants (55 percent). Non-profit organizations are most likely to provide counties with: programs, activities or services for

participants (50 percent of counties that had partnerships with non-profit organizations received such contributions); volunteers or mentors (48 percent); and donations of facilities or space (45 percent). Businesses are most likely to provide counties with: donations of materials or supplies (62 percent of counties that had partnerships with businesses received such donations); volunteers or mentors (37 percent); and programs, activities or services for participants (35 percent).

Volunteers are an important part of 4-H in general, and SET programs are no exception. While not all LGUs with partnerships were able to report the number of volunteers those partnerships have yielded, some were able to do so. As shown in Exhibit 13, school districts on average provided the most volunteers per LGU, followed by faith-based organizations and businesses.

**Exhibit 13  
Number of Volunteers from Different Partner Organizations**

	Mean per LGU	Median	Standard Deviation	Total volunteers	Number of LGUs reporting
School districts	217	25	675	3,687	n=17
Faith-based organizations	62	12	106	311	n=5
Businesses	40	15	66	556	n=14
Local colleges	30	18	34	242	n=8
Local government agencies	28	12	41	196	n=7
Non-profit organizations	20	10	26	294	n=15
National 4-H partners	3	2	2	24	n=9
Media organizations	8	10	5	24	n=3

Exhibit reads: For the 17 LGUs who reported having volunteers from their partnerships with school districts, the mean number of volunteers per LGU was 217, the median was 25, the standard deviation was 675, and total number of volunteers was 3,687.

In the counties that were able to provide information about their SET volunteers, school districts on average provided the most volunteers per county (13 volunteers per county with 196 counties reporting), followed by non-profit organizations (eight volunteers per county with 136 counties reporting), and businesses (six volunteers per county with 122 counties reporting).

***Tactics used to develop partnerships.*** In order to develop lasting partnerships between organizations, certain elements often need to be in place. The partners should have an understanding of each other's goals, a plan for communicating with one another, and a structure in place for evaluating and improving the partnership. LGUs with partnerships that support SET were asked to report the extent to which they had considered such steps in developing partnerships. Most commonly, LGUs reported that they had considered how to engage the partner organization in meaningful ways (e.g., through activities with participants): 43 percent reported having done so to a great extent, and another 43 percent did so to some extent. One respondent has successfully engaged volunteers from partner organizations: "Volunteers have taken ownership of programs they've worked with and thus are committed to return each year."

Most LGUs also said they had considered how to define attainable goals for their partnerships. Forty-two percent reported doing so to a great extent, and 36 did so to some extent. Fewer LGUs reported that they had considered establishing a plan for communicating with their partner organizations (26 percent did so to a great extent, and 42 percent did so to some extent.) A similar number of respondents reported that they had considered how to evaluate their partnerships to identify strengths and weaknesses (26 percent did so to a great extent, and 39 percent did so to some extent.)

The results of the County Implementation Survey suggest that responding counties used tactics to develop partnerships in ways similar to those of the LGUs. Like LGUs, counties were most likely to report that they had considered how to engage their partner organizations in meaningful ways: 41 percent reported having done so to a great extent, and 37 percent did so to some extent. Twenty-seven percent of counties reported that they had considered establishing a plan for communicating with their partner organizations to a great extent (45 percent did so to some extent.) Like LGUs, counties were less likely to report that they had considered how to evaluate their partnerships to identify strengths and weaknesses (15 percent did so to a great extent, and 46 percent did so to some extent.)

***Challenges to building partnerships.*** Some responding LGUs reported that they have had difficulty establishing strong partnerships to support SET programming. All respondents (whether or not they had partnerships that support SET programming) were asked to reflect on the challenges their LGUs had experienced in trying to establish and maintain partnerships. The greatest challenge LGUs faced was a lack of resources to seek out partnerships. As shown in Exhibit 14 below, 55 percent of LGUs felt that a lack of resources was a major challenge, while 38 percent felt it was a minor challenge. In their comments, respondents described the types of resources they lacked. One respondent wrote that staff time was limited, saying, "With partnerships comes the increased time demand, sometimes with no funding for additional staff to administer the partnership." Another respondent wrote, "We have lots of ideas and opportunities to develop partnerships but always struggle with allocating [staff] resources to implement the ideas."

Another respondent reported, "Most partners or potential partners have stated that the 4-H SET goals are noble and needed." However, this respondent wrote that potential partners' limited resources also pose challenges: "Most partners or potential partners are not able to commit the time needed to help create a sustainable 4-H SET collaborative partnership. The 4-H

SET Program activities are initiated by me and two other colleagues in addition to our other roles and responsibilities.”

Other challenges to building partnerships were that partnerships the LGUs have developed have not yet resulted in any collaborations. Challenges such as identifying potential partners and identifying how partnerships can fulfill 4-H SET program needs have been minor challenges for the majority of LGUs. One respondent noted that finding appropriate tasks for partners is important, but that it can be difficult and requires staff time. Although there is “much enthusiasm for SET work,” this respondent reported, “It has been a challenge to identify concrete tasks for partners to take on as we develop new focus areas in SET programs. There are potential funders who have indicated an interest but we have yet to capitalize on those until we clearly identify their role. Much of that work in developing partnerships is done through our 4-H Foundation. We have not had a director in place for more than a year so that work moves a little more slowly.”

For another respondent, “differences in pedagogy” with partners posed a challenge in building partnerships: “We have to ensure partners have similar philosophies in science, engineering and technology education, e.g., experiential and inquiry-based.”

**Exhibit 14**  
**Challenges to Building Partnerships (n=40)**

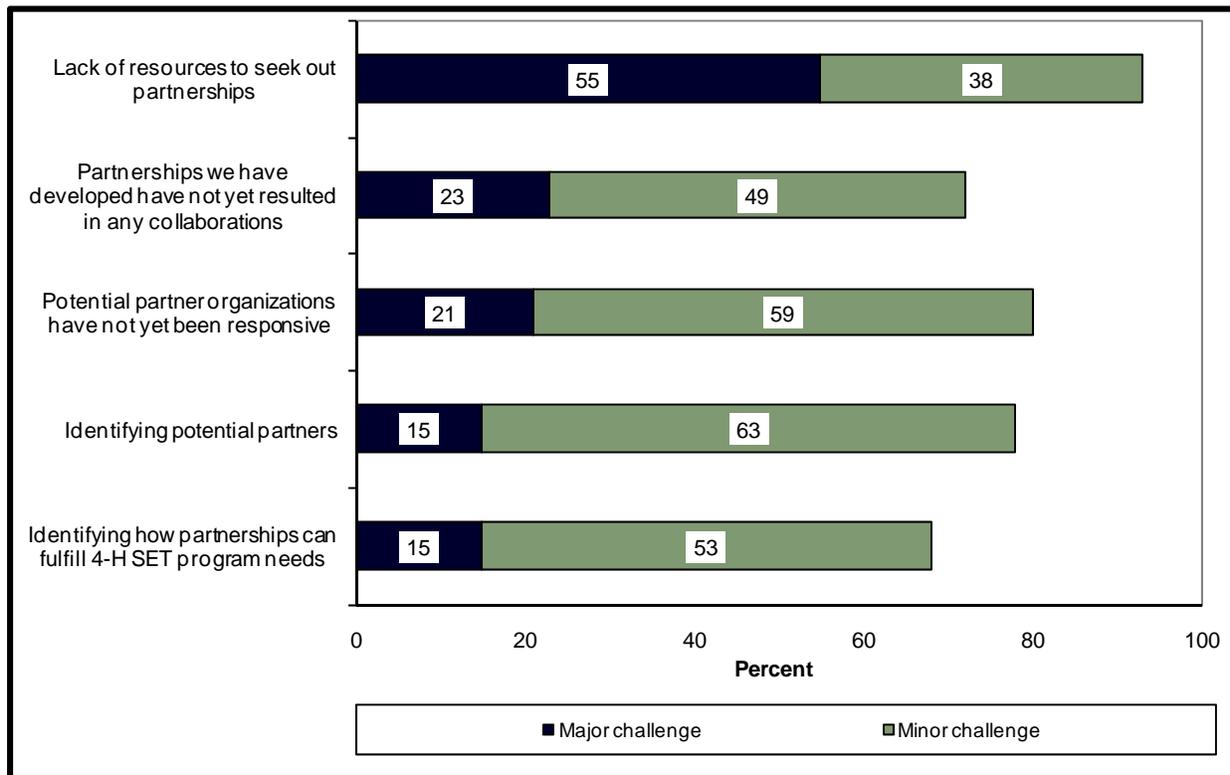


Exhibit reads: Fifty-five percent of 4-H SET programs reported that a lack of resources to seek out partnerships is a major challenge.

Multiple respondents commented on how their partners view 4-H's increased involvement in science, engineering, and technology. One respondent felt there was a "disconnect between 4-H and 4-H SET" and that "getting people to understand and know new 4-H programming, and what role these partners could play" was a challenge. Another respondent commented, "I think these partnerships have given media, businesses and others a different perspective on what 4-H is adding and offering to the various communities besides the usual cows and cooking myth. We are showing how diverse we can be and [are] changing with [the] times."

Counties reported similar challenges to building partnerships: as was true for LGUs, lacking resources to seek out partnerships posed the greatest challenge. However, counties were more likely than LGUs to report that identifying potential partners and identifying how partnerships can fulfill SET program needs were challenges (28 percent and 24 percent of counties reported that these tasks posed major challenges.)

## **Staffing and Professional Development**

Like all 4-H programs, effective SET programs require staff who have the ability to create both a positive environment for youth and opportunities for experiential learning. In addition to this ability, staff in SET programs must also understand how to teach content and skills related to science, engineering, and technology. Overall, LGUs report difficulties in finding staff with enough expertise to lead SET programming. In addition, while appropriate SET training opportunities appear available (or not extraordinarily difficult to develop), LGUs did report difficulty in finding funding for such training.

***Staff and volunteers supporting SET programming.*** The number of staff and volunteers supporting SET programming in LGUs varied widely, possibly reflecting the varied levels of SET implementation among responding LGUs. Among the 34 LGUs that reported the number of paid adult staff working on SET in their states, the number of paid staff ranged from zero to 200, with an average of 34 and a median of 10 staff. In keeping with 4-H's nature as a volunteer-driven organization, some LGUs reported having large numbers of volunteers that supported SET programming. However, only 29 of the 42 responding LGUs actually provided the number of adult volunteers in their states that support SET. Among these LGUs, the number of volunteers ranged from zero to 13,436, with an average of 1,020 and a median of 75. Exhibit 15 displays the reported number of staff and volunteers supporting SET programming in each region.

**Exhibit 15**  
**Number of SET Staff and Volunteers, by Region**

		<b>Northeast (n=5)</b>	<b>North Central (n=7)</b>	<b>South (n=10)</b>	<b>West (n=8)</b>	<b>1890 (n=4)</b>	<b>All Regions (n=34)</b>
Paid Staff	Mean	10	56	56	15	7	34
	Median	10	35	32	7	7	10
	Standard deviation	9	55	67	27	4	49
		<b>Northeast (n=4)</b>	<b>North Central (n=6)</b>	<b>South (n=8)</b>	<b>West (n=7)</b>	<b>1,890 (n=4)</b>	<b>All Regions (n=29)</b>
Volunteers	Mean	354	3,025	383	982	19	1,020
	Median	103	300	82	20	16	75
	Standard deviation	577	5,327	858	2,469	17	2,789

Exhibit reads: In the Northeast, the mean number of paid staff working in SET programs is 10, the median is also 10, and the standard deviation is nine.

In comments about their successes regarding SET staffing, some LGUs reported an increase in the interest and involvement of staff in SET programming. One respondent wrote, “There is a lot of interest in SET topics statewide, and faculty are really on board with implementing SET programming in their local programs.” Another respondent wrote, “I think the POA has rejuvenated some older agents and interested the newer agents in a positive manner because of some of the new directions that we are working towards.”

***Challenges to implementing SET programming.*** The most common staff-related challenges to implementing SET programming were related to funding. Eighty-three percent of LGUs reported that limited funding to hire staff with SET expertise poses a major challenge (Exhibit 16). Eighty-three percent of LGUs reported that limited funding to train staff and volunteers in 4-H SET program delivery is a major challenge.

Besides lacking funds to hire staff with SET expertise, LGUs also reported that recruiting volunteers, county-level staff, and paid staff with the required expertise were major challenges. Fifty-eight percent of LGUs reported that recruiting volunteers with expertise in SET areas was a major challenge, and 44 percent reported that recruiting county-level staff with enough expertise to oversee SET programming was a major challenge. Recruiting staff with expertise in SET areas was a major challenge for 35 percent of LGUs.

Twenty-five percent of respondents reported that locating or designing relevant training for staff and volunteers in 4-H SET program delivery was a major challenge to implementing SET programming, while 68 percent said this posed a minor challenge.

## Exhibit 16 Staffing Challenges to Implementing SET Programming

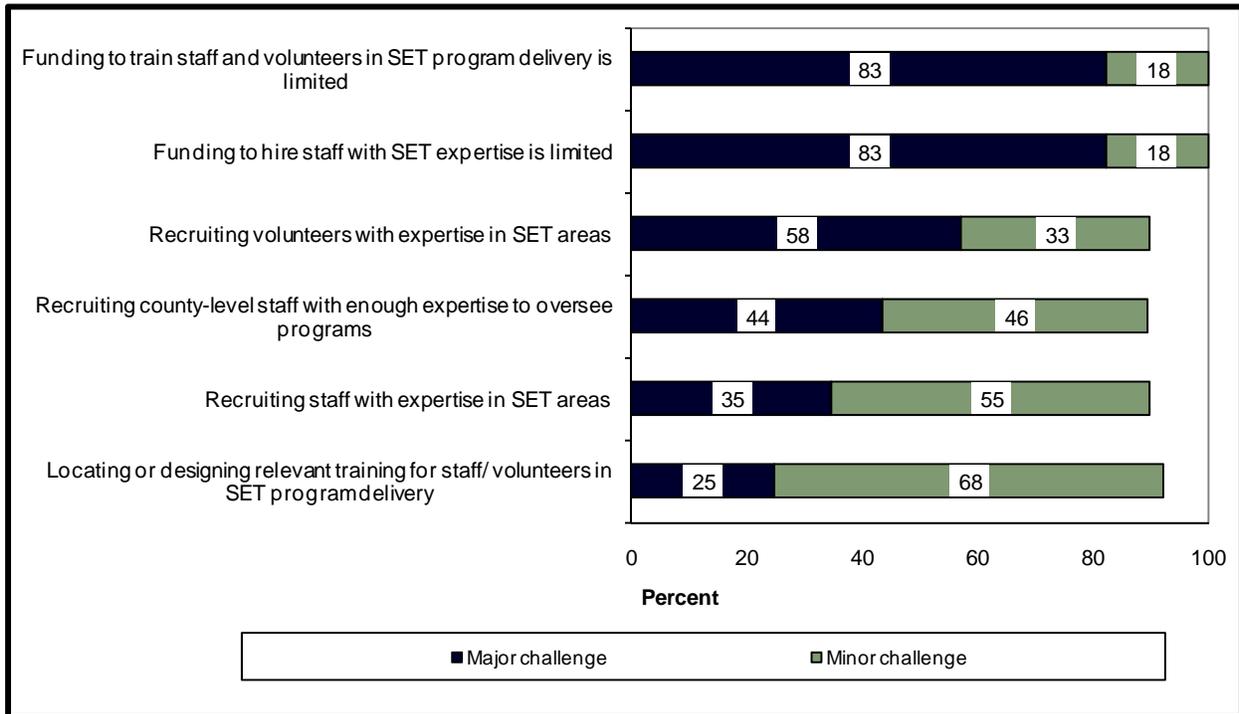


Exhibit reads: Eighty-three percent of 4-H SET programs reported that limited funding to train staff and volunteers in program delivery is a major challenge.

Comments that respondents made about implementing their POA with respect to staffing reflect these challenges. One respondent wrote, “We do not have a SET/STEM state specialist currently on staff who can focus on [SET]. It is a challenge to identify volunteers with the technical skills to lead this area. [We] need new volunteers and new approaches to recruit them.” Another respondent commented, “Some of the programming that we are offering is a big change and the expertise in these areas are limited. The youth are ahead of the adults in many cases with this new programming.”

County respondents reported similar challenges to implementing SET programming: having limited funding and recruiting staff with SET expertise were major challenges, although recruiting county-level staff with such expertise was less of a challenge for counties than it was for LGUs. Locating or designing relevant training was more challenging for counties than it was for LGUs.

**Professional development for SET staff.** Almost all LGUs who responded to the survey reported that there were at least a few professional development opportunities in their state for 4-H staff and volunteers to build their program delivery skills for instructing youth in SET areas. Seventy-three percent of LGUs reported that there were a few opportunities, and twenty percent said there were many opportunities. (Five percent said there were no professional development opportunities, while three percent were not sure.)

The most commonly used format for professional development was “train-the-trainer:” 84 percent of LGUs who had SET professional development reported using this format (Exhibit 17). Other commonly used professional development formats included implementation training, mentoring or coaching, and individual and guided development.

**Exhibit 17**  
**Professional Development Formats Used**

	Percent of LGU's (n=37)
Train-the-trainer	84
Implementation training	60
Mentoring or coaching	57
Individual and guided development	49
Webinars or web conferencing	46
Web-based instruction	14
Study groups (learning circles)	8
Inquiry/action research	8
Observation/assessment - lesson study	5

Exhibit reads: Eighty-four percent of LGUs used train-the-trainer as a professional development format.

One respondent wrote of a web-based instruction program: “Recently [the LGU] purchased [a] webcam and online web meeting license for every 4-H staff member to allow us to more effectively manage geographic distance and budget constraints that limit PD opportunities.”

There are many SET-related professional development opportunities currently available, according to the LGUs who responded to professional development questions. As shown in Exhibit 18, all of these LGUs said that professional development related to introducing their staff and volunteers to SET either was already available (82 percent of LGUs) or had been planned (18 percent). Forty-eight percent of LGUs reported that professional development for integrating SET skills and content into existing 4-H programming was available, and a similar number of LGUs reported that there were plans for this type of professional development (45 percent). LGUs were less likely to report that professional development on designing SET programming or implementing the Power of Wind curriculum were available or that there were plans to offer such professional development.

**Exhibit 18**  
**4-H SET Professional Development Topics (n=40)**

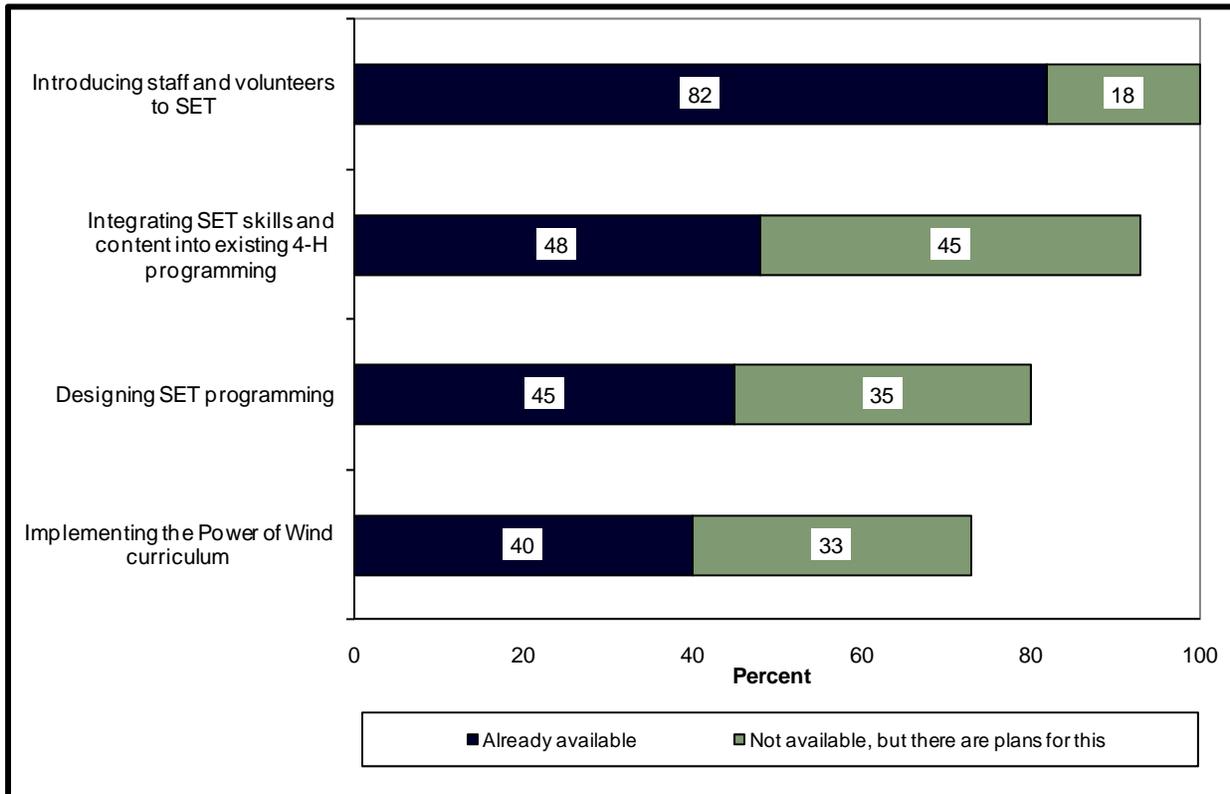


Exhibit reads: Eight-two percent of 4-H SET programs reported that introducing staff and volunteers to SET is already available as a professional development topic.

Counties were less likely than LGUs to report that there were professional development opportunities available in their areas: 46 percent said there were a few professional development opportunities in their counties, and three percent said there were many opportunities. This difference may reflect the fact that much of 4-H’s professional development takes place at the state level.

***Challenges in offering SET-related professional development.*** Acquiring funding for professional development was a major challenge for LGUs, especially for travel and staff time. Eighty-eight percent of LGUs reported that acquiring funding to send staff and volunteers to existing trainings, conferences and other SET-related professional development opportunities was a major challenge (10 percent reported it was a minor challenge.) In addition, 73 percent of LGUs reported that acquiring funding to develop SET-related professional development opportunities for staff was a major challenge (25 percent reported it was a minor challenge.)

While LGUs may lack funding for professional development, they report that SET-specific professional development is indeed available: identifying SET-related professional development opportunities was a minor challenge for 50 percent of LGUs and not a challenge for

43 percent. Developing and offering such professional development posed a minor challenge for 60 percent of LGUs, and was not a challenge for 15 percent.

The challenges that LGUs reported in implementing their POA with respect to staffing and professional development included, as one respondent wrote: “Funding and time! Without funding it is hard to implement trainings and youth programs. We also offer a variety of existing programs throughout the state and therefore find it hard to find the time to develop and implement new programs.” While LGUs have found staff to be enthusiastic about SET programming, staff also need professional development in SET areas in order to increase their expertise and confidence in delivering SET content. One respondent wrote, “Staff often [want a] ‘4-H’ SET curriculum and are wary of using any other resources. They would like very step-by-step instructions.”

Acquiring funding for SET professional development posed challenges for counties, as it did for responding LGUs. Finding professional development opportunities that were accessible to county staff was also difficult: 43 percent of counties said this was a major challenge and 45 percent said it was a minor challenge.

## Curriculum

The 4-H SET initiative seeks to make the scientific aspects of programming explicit, and in doing so, to improve participants’ skills in and understanding of the SET fields. In order to begin a new SET program or remake an established program to focus on SET, LGUs need suitable curricula that programs can use.

***Approaches to developing and implementing SET programming.*** The most common approach programs are using to develop 4-H SET programming is integrating SET concepts into established 4-H programs: 27 percent of LGUs report that programs use this approach to a great extent and 44 percent to some extent, while 27 percent use this approach to a limited extent. The second-most common approach programs use to develop SET programming is adapting existing curricula developed outside of 4-H for 4-H SET programming: 20 percent of LGUs report that programs use this approach to a great extent, and 51 percent to some extent. Few LGUs reported that programs use any of these approaches “to a great extent,” perhaps indicating that efforts to develop 4-H SET programming in most states are not yet in full swing.

One reason that these two approaches to developing programming were the most common could be that they likely require less money, staff time and staff expertise than would be required to develop SET curricula from scratch. About half of LGUs reported that programs are developing their own 4-H SET curricula to a great extent (13 percent) or some extent (40 percent), while the other half of LGUs reported programs did this to a limited extent (15 percent) or not at all (33 percent).

Perhaps because programs seem to be focusing more on remaking existing programming or adapting existing curricula, LGUs most often reported that programs are adopting the Power of Wind curriculum to a limited extent (32 percent) or to some extent (27 percent). One

respondent who knows of programs that have adopted the Power of Wind curriculum said that its introduction has been positive: “The Power of Wind has generated a good deal of interest in recruiting volunteers, and training will occur this fall.”

Another respondent described the various approaches programs are using, which include integrating SET concepts into established Animal Science programs, adopting the Power of Wind curriculum, and adapting curricula developed outside of 4-H: “We are in the process of reviewing several animal science curricula and hope to release updated material early next year. In addition more counties are using the Power of Wind curriculum and were very engaged in the bio-blast experiment and accompanying materials due to our state’s interest and focus on renewable energy. We are also reviewing all SET [curricula] used by [this LGU] to determine if it is compatible with National Science Education Standards.”

In order to help programs implement SET programming, 73 percent of LGUs reported that they are currently identifying SET curricula and sharing them with programs. In addition, 58 percent of LGUs currently offer training on specific SET curricula, and 58 percent offer training on SET content areas. Forty-five percent of LGUs report identifying businesses, faculty and other community resources that programs can utilize to develop curricula.

While 49 percent of counties reported identifying SET curricula and sharing them with programs, only about 20 percent reported using any of the other approaches to implementing SET, such as developing their own SET curricula, offering training on specific SET curricula, or offering training on SET content areas. These results suggest that more is being done at the state level than at the county level to develop curricula.

***Challenges to implementing SET curricula.*** LGUs reported that potential SET curricula are indeed available but that purchasing such curricula can be difficult. Developing SET curricula in-house and integrating SET concepts into existing 4-H programming also posed major challenges for LGUs (Exhibit 19). One respondent wrote that the difficulty in developing new curricula lies in funding: “Writing new curriculum that covers cutting edge and exciting SET research is expensive and difficult. Especially if you want to have it be research based (evaluated), and able to be shared nationally or at least regionally. It is difficult to fund these kinds of efforts.”

Comments from respondents reflect the fact that some LGUs lack the staff, time or other resources to implement SET curricula in programs. One respondent wrote, “We have yet to move forward with plans to develop a robotics program. Only a limited number of counties have programs in place. Our goal is to find funding, curriculum, and manpower to launch a comprehensive robotics program.”

Besides limited funding and resources, respondents reported that staff members’ misconceptions regarding the concept of “SET” can undermine efforts to integrate SET into 4-H programming. One respondent commented, “Perceptions among field staff sometimes limit their understanding of what SET programs entail. Many traditional programs are science based but are not thought of as part of SET.” Another respondent agreed with this sentiment, writing, “In

addition the definition of SET is still widely perceived as only engineering and technology while agricultural and natural sciences are perceived as a separate program area.”

**Exhibit 19**  
**Challenges to Implementing SET Curricula (n=41)**

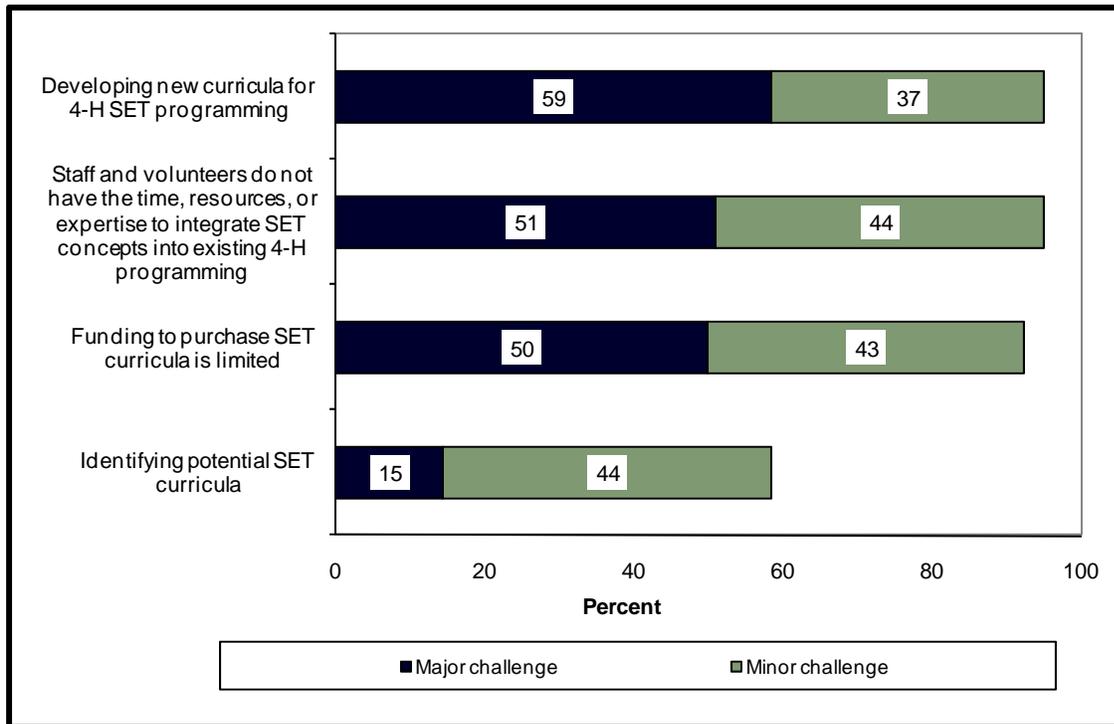


Exhibit reads: Fifty-nine percent of 4-H SET programs reported that developing new curricula for 4-H SET programming is a major challenge.

Attitudes towards and experience in the SET fields can play a role in how willingly SET curricula are adopted: one respondent reported receiving a “great response from county staff wanting more curricula involving SET”, while another respondent wrote, “4-H staff are gatekeepers to the curriculum and are less likely to promote project areas in which they don't have a personal comfort or knowledge.”

Results of the County Implementation Survey were similar to those of the State Implementation Survey with respect to the challenges of implementing SET curricula. The most challenging aspects of implementing SET curricula for counties were limited funding to purchase SET curricula (a major challenge for 63 percent of counties), and limited staff and volunteer time to integrate SET concepts into existing 4-H programming (a major challenge for 53 percent of counties). In addition, developing new curricula for 4-H SET programming posed a major challenge for 49 percent of counties.

## Evaluation

***Approaches to evaluating SET programming.*** Evaluation can be a useful tool for people designing new programs or making changes to established programs, and almost all LGUs are using or planning to use some form of evaluation for the SET programs they run. LGUs were asked to report the evaluation approaches they are currently using as well as the approaches they plan to use in the future. The most common evaluation approach that LGUs reported using was developing evaluation tools such as surveys, focus groups, or observations to assess 4-H SET programming: 40 percent of LGUs are currently developing evaluation tools, and another 43 percent plan to do so in the future.

One respondent commented that because individual 4-H programs can be quite different from one another, it is difficult to evaluate them as a group: “Perhaps we should consider a ‘template’ that can be adapted for county use; otherwise, the county programs are so varied that evaluating them individually seems daunting.” Some LGUs have succeeded in creating standard evaluation instruments for SET programming that counties and programs can use. One respondent described the standardized SET evaluation instrument the LGU has created, but noted that this instrument cannot be used in all situations: “We have created a generic SET evaluation tool, and are working with specific states using a shared evaluation for three specific project areas.” This respondent continued, “We’ll have to work on how to evaluate the district-specific programs, and to make sure the SET areas are accomplishing what we intended.”

Thirty-four percent of LGUs reported that they are currently analyzing data from 4-H SET evaluations, while 56 percent have plans to do so in the future. One LGU has successfully developed an evaluation tool for counties to use, but has found the data analysis itself time-consuming: “[Counties could] select appropriate SET related survey items from an online ‘question bank’ for use in preparing evaluation instruments. Because of this resource, far more evaluation data is now available.” This respondent continued, “Training field staff was a minor challenge while tabulating and analyzing the volume of data was a significant challenge. All analysis is done at the state level.”

While less than one third of LGUs reported currently using the results of evaluations to improve their SET programming in some way, many LGUs have plans to do so in the future. Twenty-seven percent of LGUs are using the results of their evaluations to guide programming decisions, and 63 percent plan to do so. In addition, 27 percent of LGUs are currently using evaluation results to help replicate promising 4-H SET approaches, while 61 percent plan to do so.

Currently, only 20 percent of LGUs reported that they are training 4-H SET program providers to evaluate 4-H SET programming, but 63 percent plan to do so in the future. One respondent reported successfully training staff to conduct evaluation: “Our LGU has involved county staff in a evaluation cohort to develop evaluations for SET programming.” However, this respondent continued, “This is very time consuming! [It is] sometimes difficult to see the benefit short term.”

The results of the County Implementation Survey suggest that counties are using the above evaluation approaches less often in general than are LGUs. However, the approaches that counties did use mirrored those used at the state level: counties most often reported developing evaluation tools that can assess SET programming (24 percent did so), and rarely reported training 4-H SET program providers to evaluate SET programming (eight percent did so).

**Challenges to evaluating SET programming.** The greatest reported challenge to evaluating 4-H SET programming was a lack of sufficient resources to pay staff to spend time on evaluation: this was a major challenge for 49 percent of LGUs and a minor challenge for 44 percent (Exhibit 20). LGUs also reported that they lack sufficient resources to train staff and volunteers to use evaluation tools: this was a major challenge for 42 percent of LGUs, and a minor challenge for 46 percent. About one third of LGUs reported a lack of sufficient resources as a major challenge in developing evaluation tools, collecting, and analyzing evaluation data.

**Exhibit 20**  
**Challenges to Evaluating SET Programming (n=41)**

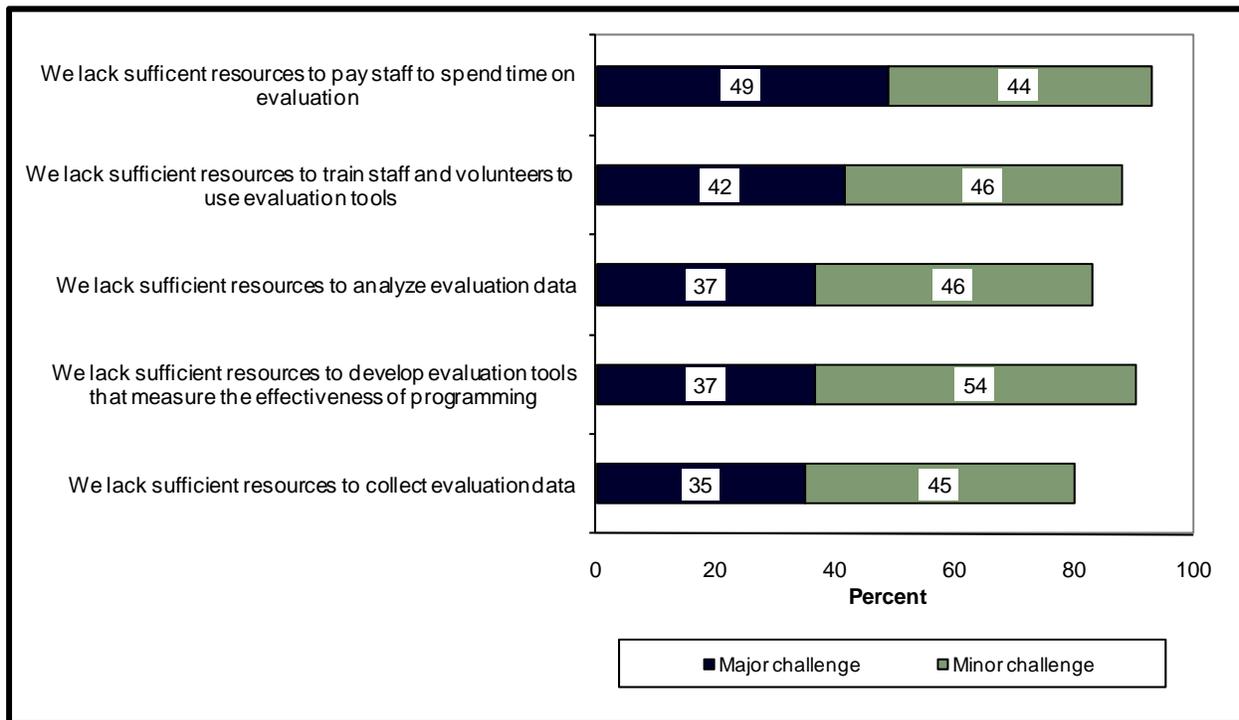


Exhibit reads: Forty-nine percent of 4-H SET programs reported that their lack of sufficient resources to pay staff to spend time on evaluation is a major challenge.

Some respondents wrote that their LGUs had difficulty implementing their Plans of Action with regard to evaluation because staff lacked the time or expertise to conduct evaluations, or to analyze evaluation data. For example, one respondent wrote, “The challenge is staff time; we have someone who can analyze data, but [we are] unsure of the [willingness of] staff to complete the evaluation process; their time is limited.” Another respondent wrote, “The

primary challenges of SET evaluation include limited staff time and overburdening volunteers and youth with data collection.”

County survey responses mirrored those of the LGUs with respect to evaluation challenges: the two greatest challenges for counties were a lack of sufficient resources to pay staff to spend time on evaluation, and a lack of sufficient resources to train staff and volunteers to use evaluation tools.

## **Marketing and Communications**

*Approaches to marketing SET programming.* Almost all LGUs reported using or planning to use a variety of approaches to market 4-H SET programming and communicate with others about 4-H SET. Ninety percent of LGUs reported that they are informing current 4-H participants about 4-H SET programs, and the other 10 percent have plans to do so in the future. Many LGUs also reported that they are informing local schools about 4-H SET and requesting their involvement and support (81 percent are currently doing so, and all the others have plans to do so.)

By using their established relationships and building on shared interests, local programs have had success in marketing SET programming to schools. As one respondent wrote, “It seems that [SET] is so in line with other organizations’ focus (including schools, University, etc); most are very receptive.” Another respondent wrote, “Many counties have a long established relationship with local school systems which allow easy access to marketing 4-H programs to youth.” However, a third respondent described one of the challenges that 4-H staff face when communicating with schools about SET as “finding a unique niche to market. Schools call it STEM and 4-H calls it SET. That is confusing!”

In addition to communicating with local schools, 78 percent of LGUs report that they are informing university faculty and students in science, engineering and technology departments about 4-H SET and requesting their involvement, and another 20 percent have plans to do so. One respondent described the various marketing approaches the LGU is using, and how marketing SET within the university may open up new funding opportunities: “We have been actively ‘marketing’ 4-H programs on the campus of our LGU by establishing a Saturday Science program for 4-H youth and by engaging faculty in a number of on and off campus activities. By increasing awareness on campus we can improve our access to funding opportunities. For the first time, we also hosted a Summer Science Program on campus which was a great start to working with school administrators, faculty, and staff of the LGU.” While these on-campus marketing efforts have so far been successful, this respondent also said that finding funds for the Saturday Science program was difficult.

In addition to informing current participants, local schools, and university faculty and students about SET, about two thirds of LGUs reported that they hold community events to improve public awareness of SET (68 percent are currently doing so, and 22 percent plan to do so.). One respondent wrote that “broadening public perspective of 4-H programming to include science literacy as something 4-H affects” was a challenge.

Communication with 4-H staff about SET was also reported to be part of the LGUs' work. One respondent described efforts to increase 4-H staff's and the public's awareness of SET: "4-H staff understanding of SET has improved but needs to continue to strengthen. [...] We are also planning a 4-H SET open house this month showcasing programs and opportunities to both external and internal audiences." This respondent continued, "Some 4-H staff are still confused about the programs and opportunities in SET. We need to do a better job organizing our programs and positions to reflect SET programmatic focus. We also need to improve SET promotion materials for county use."

Fifty-five percent of LGUs reported that they are currently holding recruiting events to encourage youth who are new to 4-H to enroll in 4-H SET programs, and 40 percent have plans to do so. In addition, 54 percent of LGUs report they are currently informing businesses and organizations about 4-H SET programming to seek partnership opportunities. One respondent wrote how her LGU gained momentum after successfully securing one source of funding for SET: "Securing the first donor to assist with these efforts was difficult . . . now that we can share results of that effort, others are coming on board and we are building in our marketing efforts as we fund new projects/activities."

Last, some LGUs report using public service announcements to increase public awareness of 4-H SET. Forty-four percent of LGUs currently do so, and 29 percent have plans to do so in the future.

Although almost all counties who responded to the County Implementation Survey reported informing current 4-H participants about 4-H SET programs (93 percent), and half reported informing local schools about 4-H SET (51 percent), less than a third of counties reported using any other marketing approach. These results could indicate that much of the marketing and communication about 4-H SET – aside from communicating with participants and local schools – is done at the state level.

***Challenges to marketing SET programming.*** The most significant challenge that LGUs face in marketing 4-H SET programming is limited funding. As shown in Exhibit 21 below, the fact that funding to promote 4-H SET was limited posed a major challenge for 78 percent of LGUs and a minor challenge for 22 percent. The second most significant challenge that LGUs reported was that staff do not have the time, resources or expertise to market 4-H SET programming.

Some LGUs find that the messages about SET across their states are inconsistent. As one respondent wrote, "Each county markets their SET program in their own unique way. Depending on the county this has been successful to various extents. Counties with higher technical populations seem to be marketing more effectively." This respondent continued, "We don't currently have anyone at the state office with marketing expertise or responsibility. We are working on finding funds to bring in this resource."

Another respondent, after detailing the many efforts the LGU has made at the state level to market 4-H SET, such as presentations at conferences and events, described efforts at the local level in this way: "Marketing at the local level has varied, with notable successes in many

counties with school districts, other youth agencies, science centers/museums, and county government agencies.” When asked to describe the challenges in implementing the LGU’s POA with regards to marketing, the respondent wrote: “Primary challenges include: 1) inconsistency in messages and branding; 2) limited resources to reach higher impact outlets (e.g. TV and radio); and 3) limited staff time.”

County responses regarding marketing challenges mirrored those of LGUs: the two most challenging aspects of marketing for counties were limited funding and limited staff resources.

**Exhibit 21**  
**Challenges to Marketing SET Programming (n=41)**

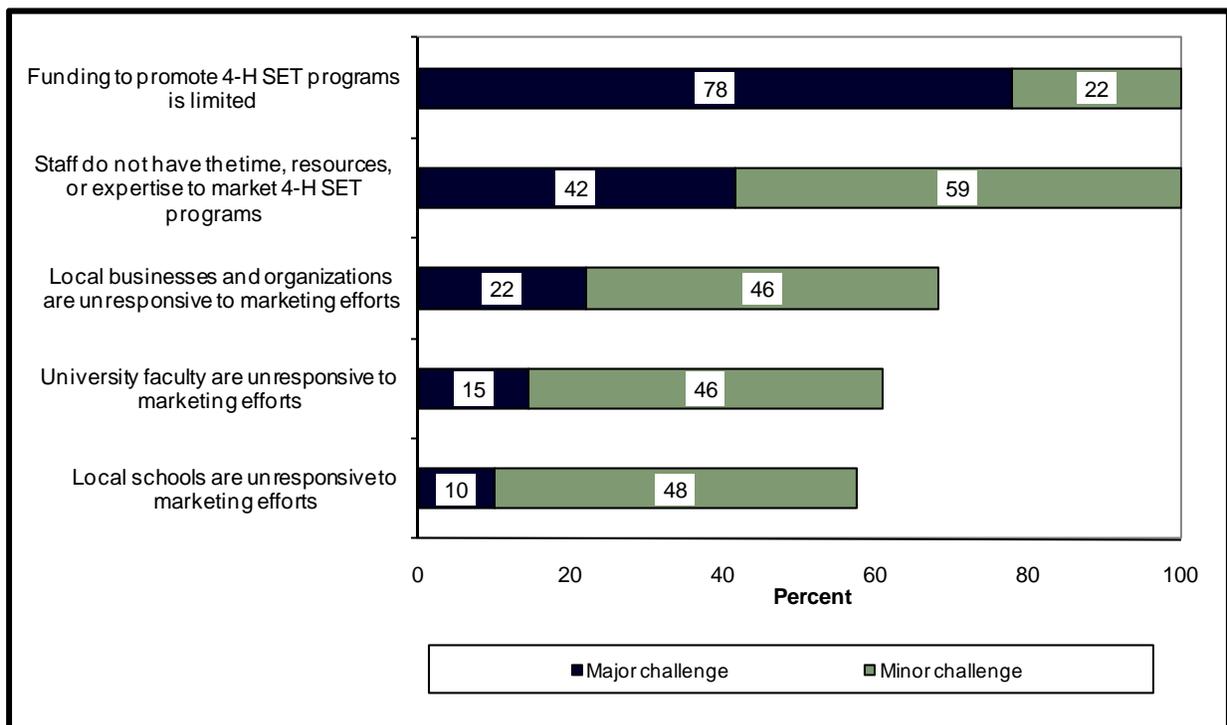


Exhibit reads: Seventy-eight percent of 4-H SET programs reported that limited funding to promote 4-H SET programs is a major challenge.

## Funding

As indicated in the responses reported above, LGUs often point to a lack of funds as an impediment to moving forward with SET programming. In the survey, they described how they have sought funds and the challenges they experience in the pursuit of funds.

**Approaches to securing funding for 4-H SET.** LGUs’ most common approaches to securing funding for 4-H SET programming were seeking private grants and seeking federal, state, or local government funds. Seventy-eight percent of LGUs reported currently seeking private grants, and 20 percent plan to do so in the future. Also, 78 percent of LGUs report seeking government funds, and 17 percent plan to do so.

As discussed in the Partnerships section above, LGUs also reported soliciting funding or in-kind donations from businesses. Seventy-three percent of LGUs reported that they currently do this, and 20 percent reported that they plan to do so in the future. In addition, 66 percent of LGUs reported soliciting funding or in-kind donations from their LGU or from other universities (15 percent have plans to do so.)

Some LGUs reported soliciting funding or in-kind donations from 4-H Friends and Alumni Association: 50 percent currently do so, and 20 percent have plans to do so in the future.

Of successes in funding 4-H SET, one respondent wrote, “We have written [applications for] and received funding through state, national, and private sources primarily for statewide SET programs.” Another respondent described the successes the LGU has had in securing government funding by utilizing partnerships with faculty within the university: “Working with faculty in Veterinary & Biological Sciences, we have been able to submit for and be awarded a grant from NIH that will support education on virology. A USDA grant was submitted and awarded in partnership with another faculty member for educational programming on water quality and conservation.”

Results of the county survey suggest that counties that responded to the County Implementation Survey were much less involved in securing funds for 4-H SET than were LGUs. Thirty-two percent of counties reported seeking private grants to support SET, and 29 percent reported soliciting funding or in-kind donations from businesses. These responses could indicate that much of the search for 4-H SET funding happens at the state level.

***Challenges to funding SET programming.*** The most common challenge LGUs faced in securing funding for 4-H SET programming was that staff lack the time and/or resources to seek funding for 4-H SET programming. Seventy-three percent of LGUs reported this as a major challenge, while 22 percent reported it as a minor challenge (Exhibit 22). As one respondent wrote, “The primary challenge is time or personnel to write the grants or make the personal contacts with potential funders.”

The second most common challenge was that staff lack expertise in grant writing and seeking funding. Some respondents described the need to help county-level staff in this effort. For example, one respondent wrote, “Most grants are written by state staff and only a very small percentage are generated by county staff. We need to better equip county staff to identify sources and secure funding for local SET programs.”

**Exhibit 22**  
**Challenges to Funding 4-H SET Programming (n=41)**

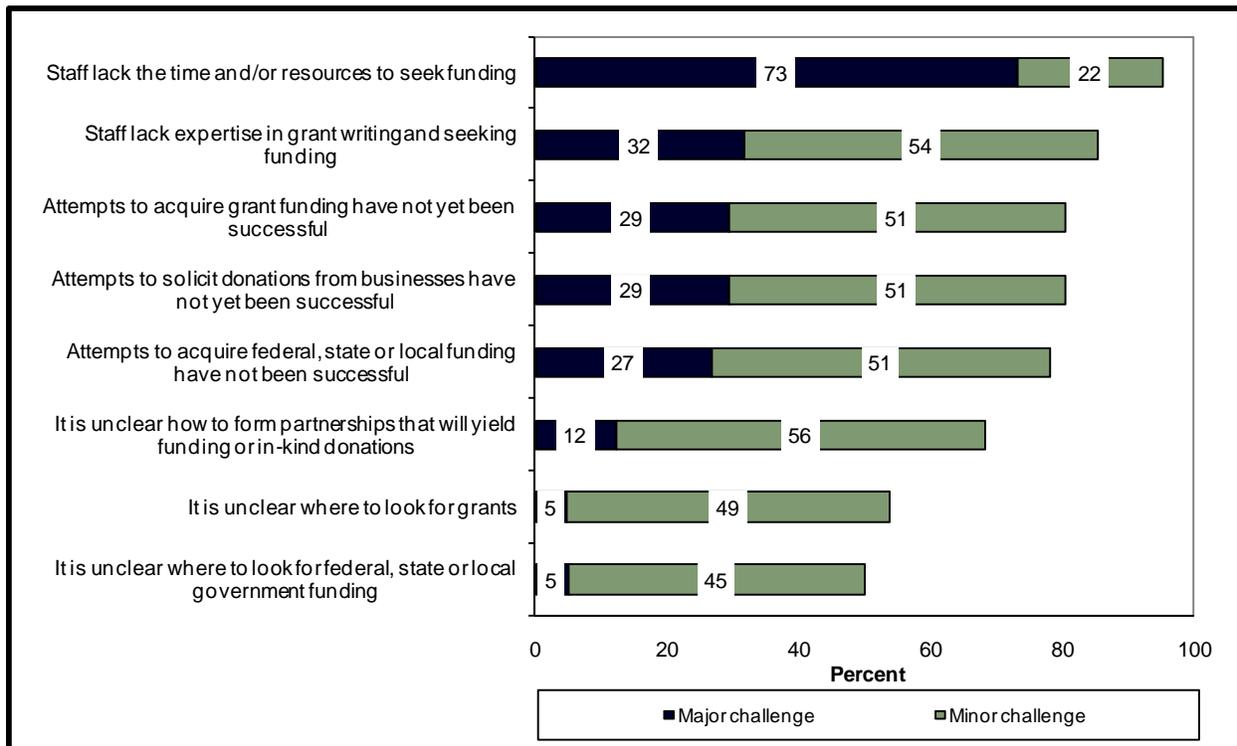


Exhibit reads: Seventy-three percent of 4-H SET programs reported that staff's lack of time and/or resources to seek funding is a major challenge.

LGUs successes in obtaining funding for 4-H SET programming are mixed; for many, a lack of success in obtaining funding poses only a minor challenge. Some LGUs reported that their attempts to solicit donations from businesses have not yet been successful; this posed a major challenge for 29 percent of LGUs. In addition, a lack of success in obtaining private grants posed a major challenge for 29 percent of LGUs. For 27 percent of LGUs, a lack of success in attempts to acquire federal, state, or local funding have posed a major challenge. Some respondents wrote that the current economic downturn has affected their ability to obtain funding. One respondent commented, “We were very fortunate to invest heavily in robotics and GPS two years ago, when funds were available. The current economy will be a definite challenge as we move forward.”

While LGUs reported that staff often lack the resources to pursue funding opportunities, they do know where to find funding. Few LGUs (only five percent) said that a lack of clarity on where to look for grants or government funding was a major challenge. Not knowing where to look for grants was a minor challenge for 49 percent of LGUs, and not knowing where to look for government funding was a minor challenge for 45 percent.

Limited staff resources, time, and expertise also posed the greatest challenges for responding counties in seeking funding to support SET. However, counties were more likely than LGUs to report that a lack of clarity on where to look for government funding, where to

look for grants, or how to form partnerships with businesses to support SET were major challenges. Thirty-one percent of counties reported that not knowing where to look for government funding was a major challenge (47 percent said it was a minor challenge), 31 percent reported that a lack of clarity in how to form partnerships to support SET posed a major challenge (45 percent said it was a minor challenge), and 26 percent of counties reported that not knowing where to look for grants was a major challenge (48 percent said it was a minor challenge.)

### Relationship with National 4-H SET Leadership Team

Overall, LGUs reported that communication about expectations between LGUs and the National 4-H SET Leadership Team (LT) has been clear, and that the LT has provided feedback regarding their Plans of Action (Exhibit 23).

**Exhibit 23**  
**LGUs' Views of National 4-H SET Leadership Team (n=42)**

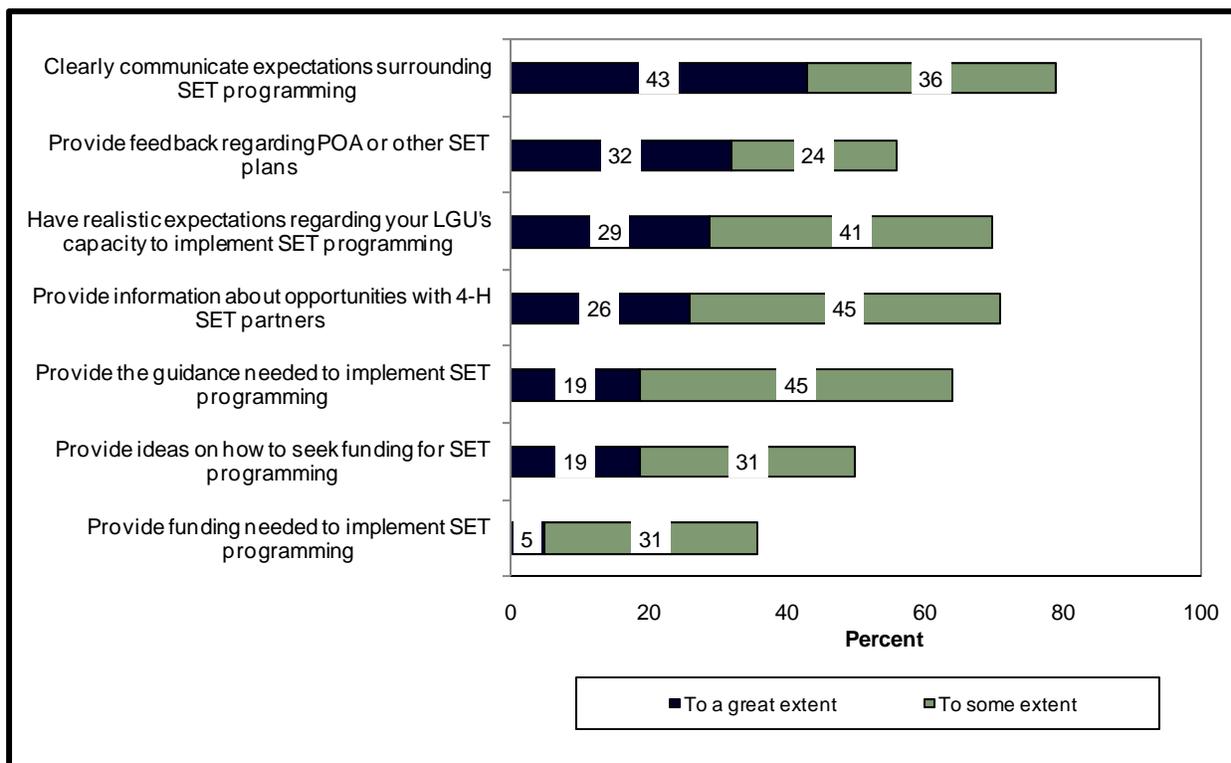


Exhibit reads: Forty-five percent of LGUs reported that the national 4-H SET leadership team provides information about opportunities with 4-H SET partners to a great extent.

Also, 69 percent of LGUs reported that the LT has realistic expectations regarding their capacity to implement SET programming (29 percent felt the LT had realistic expectations to a great extent, and 41 percent to some extent.) In addition, 71 percent of LGUs reported that the LT had provided information about opportunities with 4-H SET partners (e.g., on securing

grants, recruiting volunteers, or taking advantage of programming opportunities). Twenty-six percent of LGUs felt the LT had provided such information to a great extent, and 45 percent felt it had done so to some extent.

However, fewer LGUs thought that the LT had provided the guidance needed to implement SET programming, provided ideas on how to find funding, or provided funding themselves.

## Conclusions

- According to the LGUs responding to the survey, many 4-H staff, volunteers, and partner organizations are enthusiastic about the SET initiative and agree that its goals are important.
- Some LGUs have been able to build strong partnerships to support SET programming, and have begun to integrate SET programming into their extension services in ways that fit their extension area's needs.
- The central factors reported to affect an LGU's capacity to promote SET programming are funding and staff resources (including the time required to seek funding). These two factors affect almost all aspects of SET implementation.
- LGUs report knowing where to seek funding for 4-H SET, but lack the staff time and/or expertise to secure funds.
- The qualities that make 4-H programming easily adaptable to local interests and needs can pose difficulties for collecting systematic data on a national scale.
- The wide variations in the SET Ready program and enrollment data collected for this evaluation indicate inconsistencies in the methods LGUs use to track and report such data.

## Recommendations

- More guidance from the National Leadership Team on how to implement SET in the face of limited funding and staff resources would aid LGUs in their implementation of the SET initiative.
- LGUs would also benefit from guidance from the National Leadership Team on how best to integrate SET concepts and instructional techniques into existing programming. This guidance could address ways of offering more and better SET programs in spite of limited budgets and staff and volunteer resources.

- LGUs need support in training staff and volunteers to deliver 4-H SET programming on a large scale. Program evaluation is another area in which LGUs need more support or encouragement; the widespread reports of inadequate funding for evaluation point to a need for some combination of funding and guidance.
- As one means of providing guidance on all aspects of program implementation, the National Leadership Team could facilitate conversations among leaders at various LGUs so that they can learn from each other's experiences in implementing SET. For example, LGUs who have not yet built partnerships to support SET would benefit from the advice of those LGUs who have been able to do so.
- LGUs would benefit from the support from the National Leadership Team in pursuing funds for 4-H SET, such as training for staff and volunteers on writing grant applications.
- In order to accurately assess the progress of the SET initiative, the data systems that LGUs use to collect program information need greater uniformity, with agreed-upon definitions of key terms such as "program" and "project" for LGUs to use in data collection.
- LGUs appear to need guidance or resources in addition to the SET Checklist so that they are able to determine accurately which of their programs are SET Ready.