

Evaluating the Forest Stewardship Program Through a National Survey of Participants

by

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Abstract

This paper reports findings from a national survey of 1,231 participants in the Forest Stewardship Program (FSP) of USDA's Forest Service. Launched in 1991, the FSP provides technical assistance through state forestry agencies to help landowners develop management plans for their non-industrial forestland. The survey allowed us to address five main evaluative questions. The answers we found were largely positive. (1) For the most part, the program was reaching the targeted clientele. Across the four regions, majorities of 57 percent to 73 percent of the surveyed participants reported that they had never before received professional advice for managing their forestland. (2) Majorities of 82 percent to 86 percent had begun to implement their plans, that is, they were carrying out management activities recommended in their plans. (3) In most cases, the practices being implemented amounted to a multiple-purpose approach to management (e.g., with the same owner pursuing both timber stand improvement and wildlife protection). (4) Majorities of 52 percent to 56 percent were applying practices that were new to them. (5) Finally, the program has stimulated its participants to spend considerable money on plan implementation beyond whatever reimbursements they received through cost sharing. Even owners who did not take part in cost share program reported significant expenditures.

INTRODUCTION

This paper reports on a survey of participants in USDA Forest Service's Forest Stewardship Program (FSP) that constitutes the first national-level evaluation of the program. Authorized by the Cooperative Forestry Assistance Act of 1978, as amended by the Forestry Title of the 1990 Farm Bill, FSP provides technical assistance through state forestry agencies to nonindustrial private forest (NIPF) landowners to help them develop written plans for managing their land with a whole property and multiple resource perspective (USDA Forest Service 1997)

In the authorizing legislation, Congress stated that FSP shall be directed to help NIPF owners understand and evaluate alternative actions they might take, such as:

- managing and enhancing the productivity of timber, fish and wildlife habitat, water quality, wetlands, recreational resources, and the aesthetic value of forest lands;
- protecting their forests from damage caused by fire, insects, disease, and weather; and
- ensuring that recommended management practices (e.g., afforestation, reforestation, improvement of timber stands, and practices necessary to enhance seedling growth and survival) sustain the long-term productivity of timber and nontimber resources so as to help meet future public needs for forest products and environmental benefits.

Most forest stewardship plans have been prepared under FSP. However, the 1990 Farm Bill also created the Stewardship Incentive Program (SIP), a sister program to FSP, which provides cost share assistance for preparing forest stewardship plans as well as for implementing practices identified in approved plans. SIP 1, Forest Stewardship Plan Development (one of nine SIP practice categories), has been used in 34 states and accounted for about 10 percent of total SIP cost share expenditures, 1991-1997 (USDA Forest Service 1999).

By late 1997 a total of more than 329,000 plans covering about 16.5 million acres had been completed by foresters, wildlife biologists and other resource professions in both the public (state agencies) and private sectors (consultants) (USDA Forest Service 1998). While the writing of this many plans is a major achievement, it represents also a heavy expenditure of scarce financial and staffing resources with, accordingly, less attention being given to other programs that provide service to NIPF landowners. Lacking good information on the extent to which participating landowners are implementing their stewardship plans, some members of the forest community are expressing concerns that too much money is going into generating plans instead of getting work done on the ground. Others, on the other hand, truly believe that the technical assistance provided by

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FSP will result in owners applying good stewardship practices.

Existing research studies indicate that the effectiveness of technical assistance varies by activity. Several studies have shown that landowners who employ the services of professional foresters for assistance with timber sales and marketing fare much better than unassisted owners in terms of receiving higher prices for their timber and being left with much better residual stands of timber (for examples, see Moulton and Cubbage 1990; and Cubbage et al. 1996). In contrast, technical assistance alone has generally not been effective in promoting increased reforestation (Skinner et al. 1990); but cost share programs such as the Forestry Incentives Program that offer both technical and financial assistance have been effective in promoting reforestation (Royer and Moulton 1987, Alig et al. 1990, Gaddis, et al. 1995). The effectiveness of technical assistance to promote NIPF landowners to undertake practices has not been well investigated.

FOCUS OF THE SURVEY

Beginning in late July 1998 and extending into May of 1999, random samples of owners with FSP plans were surveyed in four regions: Pacific States, Mountain and Plains States, South, and North.² Funding for the study was provided by the U.S. Forest Service. The survey questions focused on the traits of the plans and the participating owners, especially their own behaviors that the plans may have shaped. These foci of inquiry allowed us to address five evaluative questions.

- To what extent has the program provided technical assistance to owners who never before had obtained professional advice for managing their forestland?
- Have the assisted owners begun to carry out the management activities recommended in the plans?

² The “North” is USDA Forest Service’s Northeastern Area (Connecticut, Delaware, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin). The “South” is Region 8 (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia). The “West” is broken into Pacific States (Alaska, California, Hawaii, Oregon, and Washington), plus the Rocky Mountains/Great Plains (Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, Utah, and Wyoming).

- Do those implemented practices amount to a multiple-purpose approach to managing the land?
- To what extent has the program made a difference in the owners’ behavior, such as in introducing them to new practices and changing their objectives for their land?
- Has the program stimulated participants to make significant expenditures for implementing their plans?

SURVEY METHODS

From 46 of the 50 states,³ we obtained lists of forestland owners with approved Forest Stewardship Plans. With those lists, we drew a simple random sample for each region, with the aim of surveying 300 owners per region. That target was achieved or neared in all four regions (see Table 2). Eighty-four percent of the surveyed owners were interviewed by telephone (for an average of about 16 minutes per interview), while 16% participated via a mailed-back questionnaire sent to them when telephone contacts were not possible. The weighted overall response rate was 72%. Across the four regions the rates ranged from 63% in the Pacific States to 71% in the Mountains/Plains, 66% in the Southern states, and 76% in the North (no table).

MAJOR FINDINGS: The Clientele

According to the survey responses, the Forest Stewardship Program was reaching owners who should benefit from the program’s technical assistance. Among the participants with active plans (as opposed to those who had dropped out), from 57 percent (in the Pacific States) to 73 percent (Mountains/Plains) had never before received professional advice for managing their forestland (Table 1).

Participating Owners Were Carrying Out Recommended Management Activities

To inventory the contents of the sampled owners’ Stewardship Plans, the survey questionnaire asked if the plans contained recommended management activities with any of the following six purposes:

- Growing trees or caring for their health, such as planting trees, thinning trees, or fighting tree pests or diseases.
- Harvesting or marketing your trees, such as which trees to cut or when to cut and sell them.

³ Idaho, Michigan, and North Dakota were unable to provide us with the names of program participants. Hawaii was omitted because the records available to us indicated a total of just 28 plans having been written for forestland owners in that state.

- Improving or preserving your forestland as habitat for wildlife, including mammals, birds, fish, or other wildlife.
- Improving or preserving the quality of water resources like developing filter strips near ponds, fencing off streams from livestock, or reducing soil erosion near rivers or lakes.
- Agroforestry, such as building windbreaks or blending the growing of trees with cropping or pasturing.
- Some other purpose.

When owners replied “yes” about a purpose (e.g., harvesting or marketing trees), they were asked three follow-up questions: Had they been able to start carrying out any of the recommended activities for that purpose? If so, which activities had they started? And were any new to the owner?

Across all four regions, large majorities of the program participants—from 82 percent (in the Pacific States) to

86 percent (Northern)—reported that they had begun to implement their plans (Table 2). That is, the owners said they were applying at least one recommended activity (e.g., thinning trees) for at least one management purpose. How many of these owners fabricated activity to make themselves look good? We asked each owner who reported plan implementation to list specific activities being carried out. Over 82 percent gave us two or more different activities. Fabrication becomes less likely when it requires multiple, specific misstatements. Moreover, we tried to assure non-starters that their status was legitimate. Each question about whether planned activities had been started was prefaced with an excuse for non-implementation: “For lack of time or other reasons, some owners have not begun carrying out their plan’s recommended activities, while some owners have started. Have you been able to . . .?”

Table 1. Has the FSP been reaching owners who beforehand had not received advice from a specialist in managing forestland? Percentages of respondents with active plans who had and had not received such aid, by region

| | Pacific States | Mountain and Plains States | Southern States | Northern States |
|--------------------------------|----------------|----------------------------|-----------------|-----------------|
| No, had never received advice. | 57 | 73 | 58 | 69 |
| Yes, had received | 41 | 26 | 40 | 29 |
| Not sure | 2 | 1 | 2 | 2 |
| Total percentage | 100.0 | 100.0 | 100.0 | 100.0 |
| Total respondents | 270 | 244 | 272 | 331 |

Table 2. Progress in carrying out plans: Percentages of total surveyed owners reporting they had/had not started to implement their plans, by region

| | Pacific States | Mountain and Plains States | Southern States | Northern States |
|-------------------------|----------------|----------------------------|-----------------|-----------------|
| Started | 82 | 83 | 82 | 86 |
| Not begun | 8 | 6 | 8 | 8 |
| Dropped out or inactive | 10 | 11 | 10 | 6 |
| Total percentage | 100.0 | 100.0 | 100.0 | 100.0 |
| Total respondents | 301 | 275 | 302 | 353 |

As Table 2 indicates, across the four regions from 6 percent to 11 percent of the total respondents with FSP plans told us that they had dropped out of the program or were inactive. Another 6 percent to 8 percent still regarded themselves as being in the program but had not begun to implement their plans’ recommendations. We asked this latter group “why not” questions for each type of management purpose for which they reported no progress. Received in response were 168 separate explanations. The most common reason, given in 24 percent of these responses, was lack of

time to carry out the recommendations (no table). However, in most of these cases the FS plan was *not* of such recent origin that little if any progress could be expected. Fifty-eight percent of them reported their plans to have been written at least two years prior to the survey.

The second most frequent explanation—comprising 15 percent of the cases—were arguments to the effect that the timing was not yet right to apply the practices (e.g., the trees were not mature enough to be harvested).

And the third (from 14 percent of the total) was lack of funding, especially from formal cost-sharing programs.

“Growing trees or caring for their health” comprised the type of management purpose for which the highest percentage of owners reported some progress in plan implementation (Table 3). Across the four regions from 65 percent to 77 percent indicated that they had started to carry out at least one recommended activity of this type (e.g., “planting trees, thinning trees, or fighting tree pests or disease”). Second in relative frequency was “improving or preserving your forestland as habitat for wildlife,” with activity reported by 45 percent to 66 percent of the respondents. “Harvesting or marketing your trees” ranked third or lower in all regions.

These implementation percentages depended in part on whether a particular management purpose was contained in the FS plans. For example, only in the Plains states did agroforestry practices (such as

windbreaks) appear in more than 11 percent of the responding owners’ plans (see the percentages in parentheses in Table 3).

Harvesting or marketing was a management purpose in just 21 percent of the plans for the Mountains/Plains states, but from 38 percent to 53 percent in the other three regions. These three percentages suggest that the FS program has succeeded in overcoming at least somewhat the tendency of nonindustrial private forestland owners to overlook harvesting as a management purpose in favor of quality of life purposes like recreation and wildlife protection (Sampson 1997, Theo and Bergstrom 1996). However, our respondents still favored the latter type of purpose. For example, in Table 3 the surveyed owners who reported promotion of wildlife habitat as a purpose were 20 to 44 percentage points more numerous than those with harvesting/marketing as a goal (see the numbers in parentheses).

Table 3. Progress in carrying out plans: Percentages of total surveyed owners reporting they had started to implement recommended activities, by management purpose and by region, with the percentages who had such a purpose in their plans—whether carried out or not-- given in parentheses

| | Pacific States | Mountains & Plains States | Southern States | Northern States |
|----------------------------|----------------|---------------------------|-----------------|-----------------|
| Growing/caring for trees | 77 (83) | 68 (76) | 69 (80) | 65 (76) |
| Improving wildlife habitat | 45 (58) | 52 (65) | 66 (79) | 56 (69) |
| Improving water quality | 24 (31) | 25 (31) | 34 (43) | 20 (28) |
| Harvesting/marketing | 23 (38) | 16 (21) | 26 (53) | 38 (41) |
| Agroforestry activities | 9 (11) | 38 (46) | 6 (10) | 7 (9) |
| Total respondents | 301 | 275 | 302 | 353 |

Program Encouraged Owners to Manage Their Forestland with a Multi-Purpose Approach

Across the four regions, majorities of the surveyed owners (60 percent to 69 percent) reported that they had begun to implement recommended activities for at least two different kinds of management purposes such as improving tree stands *and* protecting wildlife (Table 4). Thirty-four percent to 44 percent reported progress in achieving three separate kinds of purposes. As discussed earlier, one of the Forest Stewardship

Program’s major goals was to encourage multi-purpose management of forestland. Ideally, the plan-development process enables owners to identify their several purposes and then to choose management practices that are complementary rather than conflicting. For example, an owner interested in improving both long-term income from harvesting and the quality of habitat for certain kinds of wildlife would agree to thin and harvest trees in ways that achieved both purposes.

Table 4. Progress in achieving the program’s multi-purpose approach to managing forestland: Percentages of total surveyed owners reporting they were carrying out at least two and three separate purposes, by region

| | Pacific States | Mountain and Plains States | Southern States | Northern States |
|---|----------------|----------------------------|-----------------|-----------------|
| Started to carry out at least two separate purposes | 60 | 65 | 69 | 62 |
| At least three purposes | 34 | 40 | 44 | 35 |
| Total respondents | 301 | 275 | 302 | 353 |

Table 5 presents per region the three most common combinations of management purposes that individual surveyed owners reportedly were carrying out. In *all* regions, the most frequent combination involved (1) some recommended activity or activities in the category, “growing trees or caring for their health,” plus (2) some activities with the purpose of “improving or preserving your forestland as habitat for wildlife.” Across the four regions, from 43 percent to

56 percent of the total surveyed owners reported implementing one or more activities in both of these categories. The combination of growing/caring for trees and improving water quality ranked second or third in two regions (Pacific and South). Combinations involving harvesting/marketing ranked second and third in the North and third in the Pacific States.

Table 5. Progress in achieving the program’s multi-purpose approach to managing forestland: The three most frequent combinations of management purposes (with percentages) that individual surveyed owners reported they had begun to carry out, by region

| | Pacific States | Mountain and Plains States | Southern States | Northern States |
|--------------------------|---|--|---|---|
| First most common | Growing/caring for trees and improving wildlife habitat (43%) | Growing/caring for trees and improving wildlife habitat (43%) | Growing/caring for trees and improving wildlife habitat (56%) | Growing/caring for trees and improving wildlife habitat (43%) |
| Second most | Growing/caring for trees and improving water quality (22%) | Growing/caring for trees and applying agroforestry practices (32%) | Improving wildlife habitat and improving water quality (31%) | Growing/caring for trees and harvesting/marketing trees (26%) |
| Third most | Growing/caring for trees and harvesting/marketing (22%) | Improving wildlife habitat and applying agroforestry practices (23%) | Growing/caring for trees and improving water quality (30%) | Harvesting/marketing trees and improving wildlife habitat (24%) |
| Total respondents | 301 | 275 | 302 | 353 |

Changing Forestland Management

To what extent did the Forest Stewardship Program help its clients to manage their land in ways that were new to them or different? Although a public-sector program may be judged a success for encouraging its clients to continue socially useful behavior that they had begun before participating in the program, there is the possibility that clients would have continued even without the program. Therefore, evidence of new or more intense activity may be considered stronger indicators of success. Our study found evidence of two kinds of changes in management behavior by significant percentages of the surveyed owners. In this paper we lack the space to test if variables other than

program participation shaped the new behaviors. The full report will contain that kind of multi-variate analysis (Esseks et al., forthcoming).

(1) New Management Activities Carried Out

The Forest Stewardship Program appears to have changed behavior in the sense of helping owners to carry out management activities that were new to them. Fifty-two percent to 56 percent of the total respondents per region answered, “yes,” there was one or more activities recommended in their FS plans that they had started to carry out and that were “new to you, that is, an activity that you had never done before” (Table 6).

Table 6. New management activities adopted: Percentages of surveyed owners reporting they had carried out at least one management activity that they “had not done before” in at least one, two, and three different categories of management purposes

| | Pacific States | Mountain and Plains States | Southern States | Northern States |
|---|----------------|----------------------------|-----------------|-----------------|
| Started at least one activity that was new | 55 | 52 | 55 | 56 |
| At least one that was new in two or | 33 | 36 | 33 | 30 |

| | | | | |
|---|------------|------------|------------|------------|
| more categories of purposes | | | | |
| At least one in three or more categories of purposes | 16 | 16 | 17 | 13 |
| Total respondents | 301 | 275 | 302 | 353 |

Thirty percent to 36 percent reported that they had begun applying such activities in at least two different categories of management purposes (such as growing/caring for trees and improving wildlife habitat).

It seems unlikely that owners would fabricate a “yes” answer of this type. For respondents worried about how socially desirable their answers sounded, continuing to apply good practices from the past was likely to seem better than admitting that they had just recently begun to use the practices.

Table 7 presents the percentages of total respondents, by type of management purpose, who reported that they were carrying out activities that were new to

them. The magnitudes of these percentages are determined in large part by the proportions of respondents who had started to apply the kind of management activity in question. For example, across the four regions relatively few owners—8 to 18 percent--said that harvesting or marketing activities were new to them, in part because only 16 percent to 38 percent had started to carry out any such activity (see percentages in parentheses, Table 7). For the opposite reason, many more owners reported new activities in the categories, “growing/caring for trees” and “improving wildlife habitat.” According to this table, the FS Program helped at least a third of the surveyed owners to apply new activities in the former category, and at least a quarter were introduced to practices for improving wildlife habitat.

Table 7. Progress in carrying out plans: Percentages of total surveyed owners who carried out new management activities, by type of management purpose and by region, with the percentages who had started any activity, new or old, of that type given in parentheses, by region

| | Pacific States | Mountains & Plains States | Southern States | Northern States |
|-----------------------------------|-----------------------|--------------------------------------|------------------------|------------------------|
| Growing/caring for trees | 44 (77) | 34 (68) | 39 (69) | 36 (65) |
| Improving wildlife habitat | 26 (45) | 30 (52) | 34 (66) | 26 (56) |
| Harvesting/marketing | 11 (23) | 8 (16) | 13 (26) | 18 (38) |
| Improving water quality | 13 (24) | 13 (25) | 17 (34) | 10 (20) |
| Agroforestry activities | 5 (9) | 19 (38) | 3 (6) | 3 (7) |
| Total respondents | 301 | 275 | 302 | 353 |

(2) The FS Program Helped Owners to Change or Strengthen Objectives for Their Forest Land

The experience of developing and implementing Forest Stewardship plans appears to have caused most surveyed participants with active plans to modify their management objectives. For five specified purposes, we asked the question, “When you compare your current thinking about your forest land to your thinking about it before you obtained your Forest Stewardship Plan, what is the likelihood of doing the following activities”: harvest timber for selling, improve wildlife habitat, improve or preserve water quality, install agroforestry practices, or apply a practice for recreational or aesthetic purposes. Across the four regions, from 82 percent to 85 percent of the respondents said that they were “more” or “less likely” to pursue at least one of those five objectives (Table 8). Across all regions, the purpose of improving wildlife habitat recorded the greatest swing towards it. From 43 percent to 55 percent of the owners said they were “more likely” to do it compared to their

intentions before receiving their FS plans (Table 8). In each region water quality improvement ranked second or third in positive changes. For negative impacts, the purpose of harvesting and selling timber was first or second in the percentages of respondents who reported a lower likelihood. Across the regions, 15 percent to 34 percent said that they were less likely to pursue it compared to their intentions before participating in the program (Table 8). In four-fifths of all the comparisons in Table 8, the swings to being “less likely” were smaller than the changes in a positive direction.

Some of the positive changes probably represent owners who wanted their answers to sound good. Being more willing to protect wildlife habitat or water quality is the socially desirable response in many parts of the country. However, we found evidence of a likely program effect when the answers of the owners who had begun to implement the management purpose in question (e.g., improve water quality) were

compared to those who had not started. Among the respondents who had begun something, higher percentages said that they were “more likely” to pursue that same something than they were pre-program. This

pattern was found in all the possible comparisons; and in 88 percent of the total pairings, the differences were statistically significant at the .05 level.

Table 8. Changes in the owners’ thinking about pursuing five forest management purposes: The percentages who reported being “more likely” and “less likely” to pursue a purpose compared to their thinking before receiving a Forest Stewardship Plan, by region among respondents with active plans

| | Pacific States | | Mountains & Plains States | | Southern States | | Northern States | |
|--|----------------|------|---------------------------|------|-----------------|------|-----------------|------|
| | More | Less | More | Less | More | Less | More | Less |
| Improving wildlife habitat | 43 | 5 | 49 | 4 | 55 | 2 | 48 | 4 |
| Improving or preserving water quality | 35 | 3 | 32 | 8 | 40 | 7 | 32 | 7 |
| Harvesting timber for sale | 22 | 15 | 17 | 34 | 28 | 18 | 33 | 16 |
| Installing agroforestry practices | 16 | 19 | 31 | 11 | 17 | 17 | 17 | 21 |
| Applying practices for recreational or aesthetic purposes | 25 | 17 | 27 | 15 | 31 | 15 | 28 | 12 |
| (More or less likely to pursue at least one of the five purposes) | (82) | | (85) | | (85) | | (84) | |
| Total respondents | 264 | | 244 | | 272 | | 331 | |

Stimulating Spending by Participants

Another kind of positive behavioral response from the clients of technical assistance programs is their expenditure of money to implement the given advice. Although the unpaid labor of owners, family, and friends may be all that is needed for some forestry practices (e.g., thinning or pruning), other practices (like seeding, spraying, and fencing) require paid inputs. Across the four regions, from 72 percent to 87 percent of the surveyed owners who had started to implement their plans reported expenditures for which they did not expect to be reimbursed (Table 9).

Among *all* program participants (including those who dropped out), the unreimbursed spending averaged from \$1,827 (Northern States) to \$3,629 (Pacific—Table 9). When we limit the analysis to owners with active plans and then divide them into two groups--those who reported receiving some cost share money and those who did not--participating in cost sharing

made a difference. For example, cost-share participants in our Pacific States’ sample reported an estimated average of \$5,250 that would not be paid back to them, while their nonparticipating counterparts averaged \$2,035. In the Southern and Northern states, the differences between these two groups varied by a factor of 2.0 and 3.6, respectively, while in the Mountains/Plains states, it was only 1.3. These differences are not surprising. As owners responded to the incentive of one or more government dollars for every dollar they spent, the total paid out by the cost-share clients tended to be higher than what the non-subsidized owners spent. The surprise might be in the average amounts of money reported by the non-cost-share respondents. Their money investments ranged from a low of \$806 per owner in the North to \$2,604 in the South (Table 9). Cost sharing helped, but apparently was not indispensable to significant expenditures for implementing the FS plans.

Table 9. Average unreimbursed expenditures for implementing Forest Stewardship Plans reported by surveyed owners: All respondents, those participating in cost share plans, and those not participating, by region (with numbers of respondents indicated in parentheses)

| | Pacific States | Mountains & Plains States | Southern States | Northern States |
|--|----------------|---------------------------|-----------------|-----------------|
| All surveyed owners | \$3628 (301) | \$2293 (275) | \$3441 (302) | \$1,827 (353) |
| Those who received public cost share money and had active plans | \$5250 (164) | \$2754 (158) | \$5112 (132) | \$2864 (185) |
| Those who did not received cost share money and had active plans | \$2035 (101) | \$2133 (81) | \$2604 (140) | \$806 (142) |
| (Percentage of total respondents who reported spending some unreimbursed money) | (79%) | (87%) | (83%) | (72%) |

SUMMARY OF MAJOR FINDINGS

The survey allowed us to address five main evaluative questions. The answers we found were largely positive. (1) For the most part, the program was reaching owners who should benefit from its technical assistance. Across the four regions, majorities of the surveyed participants reported that they had never before received professional advice for managing their forestland. (2) Majorities exceeding 80 percent had begun to implement their plans, that is, they were carrying out management activities recommended in

their plans. (3) In most cases, the practices being implemented amounted to a multi-purpose approach to management. (4) Majorities also were applying practices that were new to them; and (5) the FS program appeared to be stimulating substantial implementation expenditures beyond whatever reimbursements owners received through cost sharing. Even owners who did not take part in cost share program reported significant expenditures.

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