

**Children, Youth, and Families  
At-Risk (CYFAR)**

**Return on Investment  
Study: A cost benefit  
analysis**

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**Submitted by:**



The Children, Youth, and Families At-Risk (CYFAR)  
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## Background

Cost-benefit analysis, or return-on-investment (ROI) analysis, is an outcomes-based approach to evaluation that enables organizations to understand and quantify the net social value they are creating with any given investment. Return on investment is an internationally recognized, stakeholder-informed process and approach for measuring the value social programs create for participants. For the Children, Youth, and Families At Risk (CYFAR) Grant Program, this ROI study monetizes the benefits for program participants and provides important data on the association between programs that foster life skills and resilience and the impact on individuals, families, and communities.



### Study Approach and Rationale

Return on investment foundations are in economic evaluation frameworks such as cost-benefit analysis (Gibson et al., 2011; King, 2014; Pathak & Dattani, 2014), and it is a core component of program evaluation. Cost-benefit analysis necessitates that monetary values be assigned to as many of the social, economic, environmental, and other outcomes or benefits of a program as possible (Arvidson et al., 2014; Pathak & Dattani, 2014). Examples of outcomes and benefits an ROI study can evaluate include *soft outcomes* (Millar & Hall, 2013) such as decision-making, well-being, and improved family relationships (Arvidson et al., 2014).

In this document, ROI for participation in CYFAR Sustainable Community Projects (SCPs) is calculated with a combination of benefits that may be short-term (e.g., realized soon after participation ends) and long-term (e.g., several months or years after participation ends). The following formula to estimate net benefits is used:

$$\text{Net Benefits} = Q \times P - C$$

Here,  $Q$  equals the estimated amount of change in measured outcomes resulting from the program,  $P$  equals the monetary value of a unit of the outcome, and  $C$  equals the cost to implement the program. Other ROI studies look at the present discounted value of programs over the lifetime of participants. Because CYFAR programs serve a wide age range of participants and provide programs of varying lengths, it is difficult to identify the appropriate discount to apply. Therefore, in this ROI study a conservative approach is taken to calculate the net benefits of each outcome for one year.

For this ROI study, data to describe participants and estimate costs was drawn from the 44 SCPs (see below) that received funding in 2017. In addition, publicly available data about the concurrent monetary value of positive outcomes associated with program participation was used, including both direct benefits (e.g., increased lifetime earning potential) and cost savings (e.g., reduced use of emergency services). In the review of the literature, the Washington State Institute for Public Policy cost-benefit model (Lee et al., 2012) was identified as one that aligned with this study's goals and topic areas. The Washington State Institute model uses effect sizes to determine  $Q$  when specific data about the effects of a program are unavailable. To estimate the amount of change in measured outcomes resulting from the program, effect sizes from the literature on community programs were used. Data from previous meta-analysis studies indicate a range of effect sizes (min = 0.17; max = 0.41) for youth participation in community programs across various outcomes such as academic functioning, health, and social behavior outcomes (e.g., Conway et al., 2009; Raposa et al., 2019). The calculations in this study demonstrate the net benefits using a similar range of effect sizes (small, medium, and large).

### **Sustainable Community Projects (SCPs) in 2017**

Sustainable Community Projects receive 5 years of funding from the United States Department of Agriculture (USDA) and the National Institute of Food and Agriculture (NIFA) to support comprehensive, intensive, community-based programs aligned with community needs. These SCPs promote positive child, youth, and family development to further the vision of the CYFAR Grant Program. In 2017, 44 SCPs received funding through the CYFAR Grant Program, serving 19,580 participants throughout the US. Figures 1 and 2 display information about the SCPs funded during 2017. Half of the SCPs (22 of 44) first received funding in 2014 and were in the 4th year of their grant during 2017.

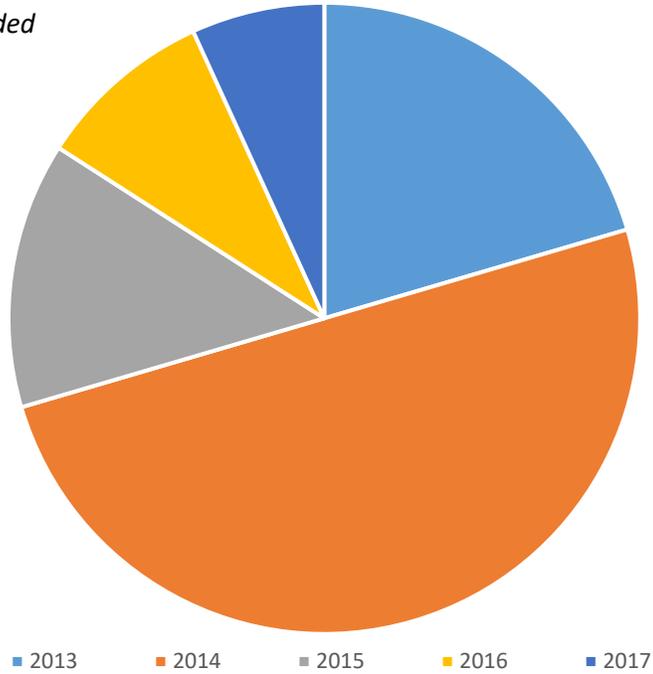


*Figure 1. Half of the SCPs first received funding in 2014 and were in the 4<sup>th</sup> year of their grant during 2017.*

**Figure 1**

### SCPs in 2017 by Year Funded

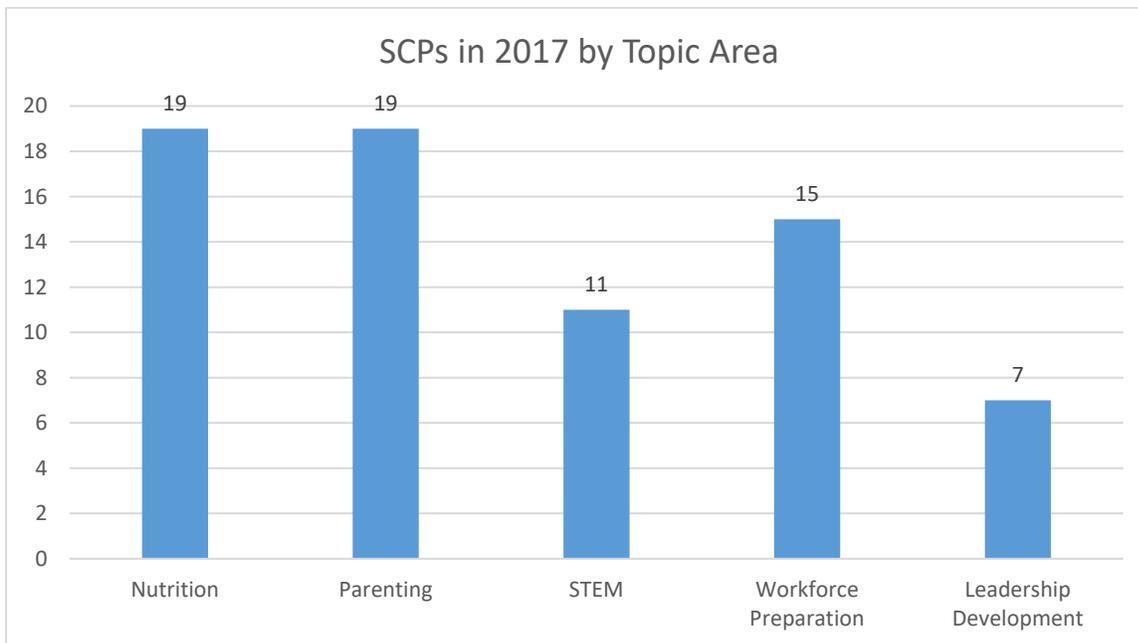
*SCPs in 2017 by Year Funded*



The SCPs focus on various topic areas with many SCPs targeting multiple topic areas through their programming. Most SCPs focused on nutrition or parenting, with each of these topic areas containing 19 SCPs.

**Figure 2**

*SCPs in 2017 by Topic Area*



The SCPs are embedded in their communities, and the participants across programs reflect this diversity (see Table 1). About half of all participants in 2017 identified as Hispanic, and about one quarter identified as Black or African American. The CYFAR Grant Program is targeted to at-risk children, youth, and families; a majority of participants in SCPs in 2017 were youth with relatively equal numbers of adults and children participating.

**Table 1**

*Participants in 2017 SCPs by Race and Age Group*

Age group	Hispanic	Non-Hispanic	White	Black or African American	American Indian or Alaskan Native	Asian	Native Hawaiian or Other Pacific Islander	More than one race	Total
<b>Child</b>	205	2209	1613	618	97	30	14	116	6070
<b>Youth</b>	1390	5747	3534	2756	198	53	8	463	7244
<b>Adult</b>	1276	555	93	16	23	29	9	50	6266
<b>Total</b>	7228	11526	7731	4161	389	154	312	674	18754

Note: Some data are missing from this table because not all projects reported participant demographic data. The total number of participants in SCPs in 2017 was 19,850.

## Overview of CYFAR ROI Study

The CYFAR Grant Program has funded SCPs that provide programs and activities to enhance the well-being of children, youth, and their families. Benefits of SCPs vary widely across projects depending on the structure of the programming, the target population (child, youth, and/or adult), the content of the program, and the community that is served. Although the SCPs vary widely, three similar outcome areas consistent with the Common Measures surveys were identified across projects: education, health, and social behaviors. Proxy variables were identified for each outcome as well as corresponding monetary values associated with these variables. Once the values were determined, the data was contrasted with the costs of the CYFAR Grant Program. A more detailed description is provided below.

### Measuring Benefits of CYFAR Initiative

Participation in community programs has numerous benefits to individuals and their families. Three outcome areas based on programming content to evaluate the participation benefits of CYFAR SCPs were chosen. Previous research has demonstrated areas where community programs are likely to impact individuals' lives. The specific outcome areas were also selected because they reflect important implications for the well-being of communities specifically and society generally. The proxy variables, along with the corresponding monetary values, are presented in Table 2.

## ***Education***



Education attainment is an important outcome that has implications for individuals' earnings and economic stability. Also, educational attainment can positively contribute to feelings of resilience among individuals and their families. The SCPs conduct programming that can help children, youth, and adults apply important skills, such as critical-thinking and problem-solving, to help further their educational goals. Therefore, the economic outcomes related to education identified for this study were the average annual earnings of adults with and without a high school diploma. These data were gathered from the Bureau of Labor Statistics (2017).

## ***Health***



Achieving and maintaining good health provides a foundation that helps individuals excel in many areas of their lives. The SCPs often conduct programming that directly supports healthy habits, such as nutrition and physical activity, which can underscore positive coping habits in times of stress and enhance resilience. For this study, the economic outcome related to health is the annual cost of health care (unspecified) visits. These data were gathered from the Centers for Disease Control and Prevention (2017).

## ***Social Behavior***



Positive social behavior is an important characteristic of any thriving community. A common thread across all SCPs is an emphasis on supportive relationships, team-building, and strengthening connections between families and their communities. Healthy and positive social behavior also fosters resilience in communities. Although positive social behavior can be difficult to assess on a large scale, the proxy variable identified for this study that reflects negative social behavior is the average annual earnings with and without a history of incarceration. These data were gathered from the Brennan Center for Justice (2020).

**Table 2***Proxy Variables and Monetary Values by Outcome Areas*

Outcome Areas	Proxy Variables	Monetary Values (per capita)
<b>Education</b>	Average annual earnings with and without a high school diploma (HSD)	Without an HSD - \$26,780 With an HSD - \$37,336
<b>Health</b>	Average annual cost of health care visits	\$10,739.00
<b>Social Behavior</b>	Average annual earnings with and without a history of imprisonment	Formerly imprisoned - \$6,700 No history of imprisonment - \$13,800

**Measuring Costs of CYFAR Initiative**

The CYFAR Grant program has been funded by the USDA/NIFA for nearly 30 years. The focus of CYFAR has been to support the development of SCPs in low-income communities across the United States (and territories), and numerous partnerships between postsecondary institutions and diverse communities have developed as a result. Once they receive a CYFAR grant, SCPs are eligible for funding for up to 5

*The breakdown of budgets are presented in Table 3, only the direct financial contribution of USDA/NIFA were considered in this cost-benefit analysis.*

years. Given this, the primary source of funding for the grantees is the financial support from USDA/NIFA. However, some SCPs may receive additional support, in the form of financial contributions, in-kind donations, volunteer hours, etc., from sources such as their community partners or private donors. Due to the potential variability of financial resources that contribute to a given program, it was not feasible to assess and incorporate these costs for this ROI study. Therefore, only the direct financial contribution of USDA/NIFA was considered in this cost-benefit analysis; the breakdown of budgets for SCPS is presented in Table 3.

**Table 3***Budget Request Limits for Fiscal Year 2017*

Description	Regular CYFAR SCP (single)	Joint CYFAR SCP
<b>Year 1 maximum amount requested per proposal</b>	\$80,000	\$160,000
<b>Years 2–5 maximum amount requested per proposal</b>	\$140,000	\$280,000

**Projected Economic Benefits of CYFAR Initiative**

The CYFAR Initiative can be described as having a positive return on investment if the benefits outweigh the costs and/or if there are social improvements or positive social implications based on its implementation. For simplicity, the focus of this study is on one fiscal year (2017) and the costs and benefits associated with the CYFAR Initiative for this year. This study provides a cross-sectional view of

the potential return on investment and can only extrapolate possible long-term impacts of CYFAR’s SCPs on the individuals, families, and communities they serve.

In 2017, there were 44 SCPs (38 single and 6 joint projects), including three new projects. Each new SCP received \$80,000 (\$240,000 total), each single project received \$140,000 (\$4.9 million total), and each joint project received \$280,000 (\$1.68 million total). This represents a total of \$6.82 million in financial cost for the CYFAR Initiative in 2017. The SCPs reported a total of 19,580 participants for 2017, which means the cost per participant was **\$348.31**. Using this cost per person as a comparison, the following sections contrast it against the previously mentioned benefits.

**Education**

The difference in average annual income for individuals who had a high school diploma compared to those who did not was \$10,556. There are several contributing factors to completion of high school, such as home environment and personality characteristics. As such, it is important to determine the estimated contribution of community programs apart from other factors. Table 3 presents the calculations of the net benefits of CYFAR SCPs for education outcome using high, medium, and low effect sizes. In these calculations, it is assumed that youth in ninth grade participated in an SCP for 4 years, yielding a total cost of \$1,393.26. Therefore, a 4-year investment by CYFAR totaling \$1,393.26 has the potential to produce a net benefit ranging from \$-337.66 to \$1,773.54 depending on the magnitude of the program’s effects.

**Education**

*A 4-year investment by CYFAR totaling \$1,393.26 has the potential to produce a net benefit ranging from \$-337.66 to \$1,773.54 depending on the magnitude of the program’s effects.*

**Table 3**

*Net Benefits of CYFAR SCPs for the Education Outcome Assuming High, Medium, and Low Effect Sizes*

Effect size (Q)	Monetary value of a high school diploma (P)	Per person cost (C) over 4 years	Net benefit
<b>0.10</b>	\$10,556.00	\$1,393.26	\$-337.66
<b>0.20</b>	\$10,556.00	\$1,393.26	\$717.94
<b>0.30</b>	\$10,556.00	\$1,393.26	\$1,773.54

## Health

The annual average per capita health care cost was \$10,739. Factors such as social determinants of health and healthcare options contribute to individuals' health. Table 4 presents the calculations of the net benefits of CYFAR SCPs for health outcome using high, medium, and low effect sizes. Therefore, a 1-year investment by CYFAR totaling \$348.31 has the potential to produce a net benefit ranging from \$725.59 to \$2,873.39.

## Health

*A 1-year investment by CYFAR totaling \$348.31 has the potential to produce a net benefit ranging from \$725.59 to \$2,873.39.*

**Table 4**

*Net Benefits of CYFAR SCPs for the Health Outcome Assuming High, Medium, and Low Effect Sizes*

Effect size (Q)	Monetary value of reducing health care costs (P)	Per person cost (C)	Net benefit
0.10	\$10,739.00	\$348.31	\$725.59
0.20	\$10,739.00	\$348.31	\$1,799.49
0.30	\$10,739.00	\$348.31	\$2,873.39

## Social Behavior

The difference in average annual income for individuals who were formerly imprisoned compared to those who were not was \$7,100. There are several contributing factors to imprisonment, such as the nature of criminal offense and social characteristics. Table 5 presents the calculations of the net benefits of CYFAR SCPs for social behavior outcome using high, medium, and low effect sizes. Therefore, a 1-year investment by CYFAR totaling \$348.31 has the potential to produce a net benefit ranging from \$361.69 to \$1,781.69.

## Social Behavior

*A 1-year investment by CYFAR totaling \$348.31 has the potential to produce a net benefit ranging from \$361.69 to \$1,781.69.*

**Table 5**

*Net Benefits of CYFAR SCPs for Social Behavior Outcome Assuming High, Medium, and Low Effect Sizes*

Effect size (Q)	Monetary value of improved social behavior (P)	Per person cost (C)	Net benefit
0.10	\$7,100.00	\$348.31	\$361.69
0.20	\$7,100.00	\$348.31	\$1,071.69
0.30	\$7,100.00	\$348.31	\$1,781.69

## Summary

The cost-benefit analysis conducted for this ROI Study suggests there is a potential for a positive return on the CYFAR Initiative's financial investment. In this study, the costs of the CYFAR Initiative were limited in scope to USDA/NIFA's financial investment. The benefits were focused on three outcome areas that represent the constructs assessed by CYFAR Common Measures (education, health, and social behavior). This study demonstrates that the outcomes associated with SCPs can be monetized and quantified in order to assess the net benefit of participation. The analysis was limited to evaluating only 1 year (2017) in an attempt to isolate the costs and benefits of participation. However, it is believed that there would be similar findings across SCPs for any given year. The findings suggest that the potential monetary return for participation in SCPs ranges from double (education outcomes) to more than triple (health outcomes) CYFAR's financial investment.



## Avenues for Future Research

This study is a first step in better understanding the range of benefits of the CYFAR Initiative. It is recommended that research in the following areas be considered to advance understanding on the many benefits of the CYFAR Initiative.

1. *Conduct return-on-investment studies separately for SCPs that serve children, youth, and adults.* Depending on the age of the participants, there are different expectations for how the SCPs will impact participants over time (short- and long-term outcomes) as well as the timeframe of impact (one year versus over multiple years). Future cost-benefit analysis might examine any benefits associated with the developmental ages of the participants and across different time intervals.

2. *Use SCPs' outcome data to evaluate specific changes for their participants.* It may be important to assess the different benefits of the CYFAR Initiative by using outcome data from each SCP. Future studies could explore if certain SCPs' outcome data are linked to certain benefits. For example, it might be useful to investigate whether scoring high on measures of life skills is associated with better health or academic outcomes.

3. *Evaluate return-on-investment analyses among SCPs with similar programming objectives or content.* The many SCPs within the CYFAR Initiative often have overlapping programming objectives and content, even though they are located in different states and serve different populations. It is recommended that future research compare and contrast costs and benefits of similar SCPs to assess critical components that might lead to more potential benefit.

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