ECONOMIC IMPACTS FROM THE USDA FOREST SERVICE'S COLLABORATIVE FOREST RESTORATION PROGRAM 2001-2016

New Mexico Forest and Watershed Restoration Institute

Forest Stewards Guild
putting the forest first

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QB LLC

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REPORT

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QB, LLC is a professional business and technical consultancy enabling client success through program development, implementation, management, and monitoring and evaluation. Under the leadership of Naomi Engelman, QB, LLC provides a range of services for federal agencies, non-profits, small businesses, and start-ups.

Forest Stewards Guild Mission:

The Forest Stewards Guild practices and promotes ecologically, economically, and socially responsible forestry as a means of sustaining the integrity of forest ecosystems and the human communities dependent upon them. Our members are foresters, conservationists, resource managers, scientists, students, policy makers, and land stewards working in forests throughout the United States and Canada. Our research program synthesizes existing knowledge and conducts novel scientific studies as a complement to Guild member's place-based experience.

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Contents

Tables

EXECUTIVE SUMMARY

The Collaborative Forest Restoration Program (CFRP), administered by the USDA Forest Service Southwestern Region, was established by an act of Congress in 2000 to provide cost-share grants to stakeholders engaged in collaborative forestry restoration efforts. The program's purposes are:

1. to promote healthy watersheds and reduce the threat of large, high intensity wildfires, insect infestation, and disease in the forests in New Mexico;
2. to improve the functioning of forest ecosystems and enhance plant and wildlife biodiversity by reducing the unnaturally high number and density of small diameter trees on Federal, Tribal, State, County, and Municipal forest lands;
3. to improve communication and joint problem solving among individuals and groups who are interested in restoring the diversity and productivity of forested watersheds in New Mexico;
4. to improve the use of, or add value to, small diameter trees;
5. to encourage sustainable communities and forests through collaborative partnerships; and
6. to develop, demonstrate, and evaluate ecologically sound forest restoration techniques.

This report quantifies the CFRP's contribution to the state's economy. It provides an in-depth overview of the economic outcomes and impacts from 200 CFRP awards initiated during the 2001- 2016 fiscal year period. The primary purpose of the report is to determine what resulted from the Forest Service's investment of $60,874,032 in funding that was provided to four types of entities: private companies, non-profit organizations, tribes, and quasi-governmental agencies.

The effort, commissioned by the Forest Service Southwestern Region, was conducted by QB, LLC, a woman owned, New Mexico based small business, in collaboration with the Forest Stewards Guild, a New Mexico based non-profit organization, and the New Mexico Forest and Watershed Restoration Institute at New Mexico Highlands State University.

The research team attempted to contact people associated with all 200 CFRP grant agreements implemented during the analysis period (2001 – 2016). Respondents were asked to quantify the total revenue generated from new products and services directly related to their CFRP awards. They also were asked about related economic outcomes, including increased sales of existing products and services, follow-on contracts, licensing revenue, and sales by licensees and spin-out companies. Awardees provided comprehensive information on the economic outcomes for 61.5% of the grant agreements.

About 80% of CFRP recipients who contributed to the analysis reported earning additional revenues because of program participation. IMPLAN economic impact modeling software was used to estimate the overall effects on the New Mexican economy from both the grant expenditure itself and subsequent additional revenue generated from CFRP engagement. CFRP engagement includes annual workshop attendance, which was reported to be very valuable. The only qualitative question asked how participating in the program affected their entity.

Because of non-responding entities, the effects of inflation, and other factors analyzed in the report, results are believed to understate the totality of economic impacts.

Major findings include the following:

- $151,453,521 in additional revenue generated
- 9:1 return on the USDA Forest Service investment[1]
- $379 million in total statewide economic output
- 4,646 jobs (an average of 290 jobs per year over the 16-year analysis period)

9:1 return on the Forest Service investment

4,646 jobs created
(an average of 290 jobs per year)

$379 million
in total statewide economic output

$151 million
in additional revenue generated

1 *Equals sum of grant effects multiplier plus additional funds generated effects multiplier (1.69 + 7.29 = 8.98)*

PURPOSE OF REPORT

The purpose of this report was to quantify the CFRP's overall contribution to the New Mexican economy, by answering the question: **What came of the Forest Service's CFRP investment of approximately $61 million to 124 different entities in 200 separate agreements?** The report examined the economic outcomes and impacts up to 2020 from all Forest Service CFRP awards implemented during 2001-2016.

Key objectives were to value the program's contribution to new economic activity and job creation; and to inform administrators of program successes and areas ripe for improvement.

A CFRP project near Black Lake, NM.

THE CFRP PROGRAM

The CFRP was established in 2000 to help the federal government address the ecological imbalance of New Mexico's forests which, after a century of fire suppression, logging, and livestock grazing, has resulted in reduced biodiversity – providing fewer benefits to humans, wildlife, and watershed - and high intensity fires that endanger lives, livelihoods, and ecological stability. The enabling legislation, the Community Forest Restoration Act of 2000,[2] was based on the conviction that collaborative restoration projects may:

- lead to the development of cost-effective restoration activities;
- empower diverse organizations to implement activities which value local and traditional knowledge;
- build ownership and civic pride; and
- ensure healthy, diverse, and productive forests and watersheds.

The authorizing legislation appropriated $5,000,000 annually to operate the program. The actual overall program budget from 2001-2012 was $4.96 million. From 2012 on, the program received $4 million annually.

Proposed projects may be on any combination of federal, tribal, state, county, or municipal forest lands. A project's federal share cannot exceed 80% of the total cost and the 20% cost-share may be cash or in-kind. To be eligible to receive funding, a project must:

1. address the following objectives:
    a. *reduce the threat of large, high intensity wildfires and the negative effects of excessive competition between trees by restoring ecosystem functions, structures, and species composition, including the reduction of non-native species;*
    b. *re-establish fire regimes approximating those that shaped forest ecosystems prior to fire suppression;*

2 *Public Law 106-393 Oct. 30, 2000.*

   c. *preserve old and large trees;*
   d. *replant trees in deforested areas; and*
   e. *improve the use of, or add value to, small diameter trees;*
2. comply with all federal and state environmental laws;
3. include a diverse and balanced group of stakeholders;
4. incorporate current scientific forest restoration information;
5. include a multiparty assessment to –
   a. *identify both the existing ecological condition and desired future condition;*
   b. *report on the positive or negative impact and effectiveness of the project;*
6. create local employment or training opportunities;
7. not exceed four years;
8. not exceed a total annual cost of $150,000 (federal portion not to exceed $120,000), nor exceed a total project cost of $450,000 (federal portion not to exceed $360,000);
9. leverage funding through in-kind or matching contributions;
10. include an agreement by each stakeholder to attend an annual workshop.

Projects are selected via recommendations from a technical advisory panel comprised of 12 to 15 members to include the following:

1. a natural resource official from the State of New Mexico;
2. at least two representatives from federal land management agencies;
3. at least one tribal or pueblo representative;
4. at least two independent forest ecosystem restoration scientists;
5. equal representation interest from
   a. conservation;
   b. local communities; and
   c. commodity.

The legislation does not specify limitations to the types of entities eligible for funding. As such, awards have been made to the following entity types:

1. non-profit organizations;
2. for-profit businesses;
3. tribes or pueblos; and
4. governmental or quasi-governmental entities.[3]

Overall program administration is provided by the Secretary of Agriculture acting through the Chief of the Forest Service. Day-to-day operations are managed by a New Mexico based Forest Service employee with assistance from five program coordinators representing each of New Mexico's national forests (i.e. Carson, Cibola, Gila, Lincoln, and Santa Fe).

Applicants may compete for concurrent but unique projects and may receive multiple awards simultaneously and over time.

3 *Quasi-governmental entities include, for example, Soil & Water Conservation Districts, educational institutions, and Resource Conservation and Development (RC&D) programs.*

IMPORTANCE OF THE REPORT

This report is the first in-depth economic impact analysis of the entire CRFP. It utilizes the well-known national IMPLAN model to estimate two key impacts of the overall program:

1. the impacts directly related to the CFRP activity itself; and
2. the impacts related to the subsequent generation of new revenue that resulted from award implementation.

In short, this study quantifies the CFRP's overall contribution to New Mexico's economy and provides an in-depth response to the overarching question: What resulted from the Forest Service investment of approximately $60.875 million in 200 projects initiated by 124 entities?

This study asks:

What resulted from the Forest Service investment of approximately $60.8 million in 200 projects initiated by 124 entities?

A thinned and burned stand on Cerro de la Olla following a CFRP.

RESEARCH TEAM

This economic impact study was conducted by QB, LLC, a woman-owned, New Mexico based small business. Naomi Engelman, QB, LLC's managing director, has been affiliated with the CFRP since the early 2000's when she served as program manager for a non-profit organization's award. In addition to contributing to the management of several awards, Naomi has also assisted applicants with proposal writing. She has a deep familiarity with the CFRP program, process, and personnel. Prior to completing this study, Naomi contributed to a substantial study by TechLink analyzing the economic impacts of the Department of Defense's (DoD) Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) programs.[4]

Jennifer Raven, a Master of Business Administration (MBA) candidate at the Anderson School of Management, University of New Mexico, provided essential assistance with data management, IMPLAN input and analysis.

METHODOLOGY

In April 2020, a letter from the Acting Regional Forester for the Southwestern Region of the USDA Forest Service (Appendix 1) was emailed to all CFRP award recipients informing them of this effort and requesting their participation. The email was not received by all due to outdated or changed email addresses. QB, LLC was supplied with a list of awardees indicating which awardees received the email along with other contact information and award details. Summaries of awards were also provided. While the list contained errors and omissions, it served as the data collection starting point.

A tour of Wallatowa Timber Industries in the Jemez Mountains.

The intention was to contact all 2001 – 2016 awardees before the end of 2020. However, due to COVID-19 related delays and restrictions, not all entities were reached. Entities were asked to share the total revenue generated as a result of having their CFRP awards. The data analysis phase consisted of aggregating and processing the information for IMPLAN modeling to determine the program's overall contribution to the New Mexican economy. Impacts for the award funding and subsequent revenue generated because of participation in the program were assessed.

4 *https://techlinkcenter.org/economic-impact-reports/8*

Data Gathering

Because a number of these awards were nearly 20 years old, it was challenging to find people who were familiar with the project and had access to the necessary revenue data. Some entities went out of business, moved, or merged. And some key contacts no longer worked for the awardee, changed position, moved, retired, or died. In many cases, the requested data surpassed the Internal Revenue Service's document retention requirements and was simply not available.

It was decided to limit the analysis to awards received before 2017 since the typical award lasts three years, and many 2017 and later awards are still in progress, with impacts yet to be realized. Cancelled awards were also removed from the data set. In sum, this economic impact analysis included 200 CFRP contracts awarded to 124 entities from 2001 – 2016 valued at approximately $60.875 million.

Multi-party team members Bryan Bird and Gabriel Romero discuss the prescription on a Chacon and Sons CFRP, Carson National Forest.

Award recipients are diverse. In addition to the four categories of entities that are eligible to receive CFRP funding (non-profit organizations, for profit businesses, tribes or pueblos, and governmental or quasi-governmental entities), there are multiple types of awards. Awards may be (1) planning (P), (2) implementation (I), (3) utilization (U), or a combination thereof (I/U, P/I, P/I/U). And, a number of entities received multiple awards throughout the history of the CFRP.

Response data was collected on individual data in-take forms pre-populated with award specifics including award number, project title, and award amount. Entity name, address, contact information for the responder, along with project start and end dates were verified and updated during the interview process. Project summaries were especially useful when collecting data for entities with multiple awards.

A total of 65 entities representing 123 awards were included in this study.

QB, LLC attempted to contact 164 of the 200 awards (82%) during 2020 via email and/or telephone, oftentimes, both. After considerable effort (some entities were contacted by phone and/or email more than ten times over the course of multiple months), responses were received for 123 awards, resulting in an overall response rate of 61.5%. The response rate for those that were attempted to be reached for the study is 75%. Additional money and time would have resulted in a higher response rate.

Participants were informed that the purpose of the study was to quantify the economic impact CFRP has had on the New Mexican economy, and that results would be documented in a report for the Forest Service to use in securing funding to continue the program,

as well as to inform about areas for program improvement. Upon making contact with an awardee, the USFS letter was re-sent to support the legitimacy and confidentiality of the study. Participants required and were provided assurance that their data would be kept confidential and aggregated with others.

Participating Entity Statistics

The types of entities represented by study participants include the following:

Type of Entity (of those that have responded)	Responses	% of Responses	% of Total Awards
Non-Profit	44	35.8%	22.0%
Business	39	31.7%	19.5%
Tribe	19	15.4%	9.5%
Government	21	17.1%	10.5%

Table 1. Study participants by entity type.

The breakdown of the 123 awards that contributed to the effort are as follows:

- Non-profit: 23 (14 entities had 1 award, 5 entities had 2 awards, 3 entity had 3 awards, 1 entity had 6 awards, 1 entity had 8 awards)
- Business: 23 (10 entities had 1 award, 10 entities had 2 awards, 3 entities had 3 awards)
- Tribe: 9 (4 entities had 1 award, 2 entities had 3 awards, 2 entities had 4 awards)
- Government: 10 (4 entities had 1 award, 2 entities had 2 awards, 1 entity had 3 awards, 1 entity had 4 awards, 1 entity had 5 awards)

A total of 65 entities representing 123 awards were included in the data collection phase of this study.

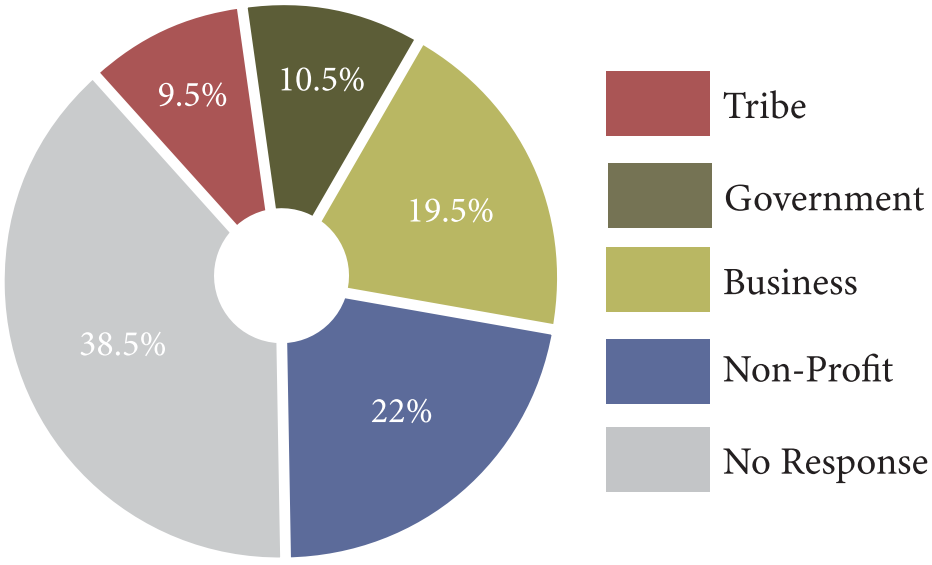

Figure 1. Study participants by entity type out of total awards, No Response inculdes many entity types.

The types of grants represented by study participants include the following:

Types of Grant (of those that responded)	Responses	% of Responses	% of Total Awards
Implementation	38	30.9%	19.0%
Implementation & Utilization	35	28.5%	17.5%
Utilization	16	13.0%	8.0%
Planning	13	10.6%	6.5%
Planning & Implementation	12	9.8%	6.0%
Planning, Implementation & Utilization	9	7.3%	4.5%

Table 2. Study participants by grant type.

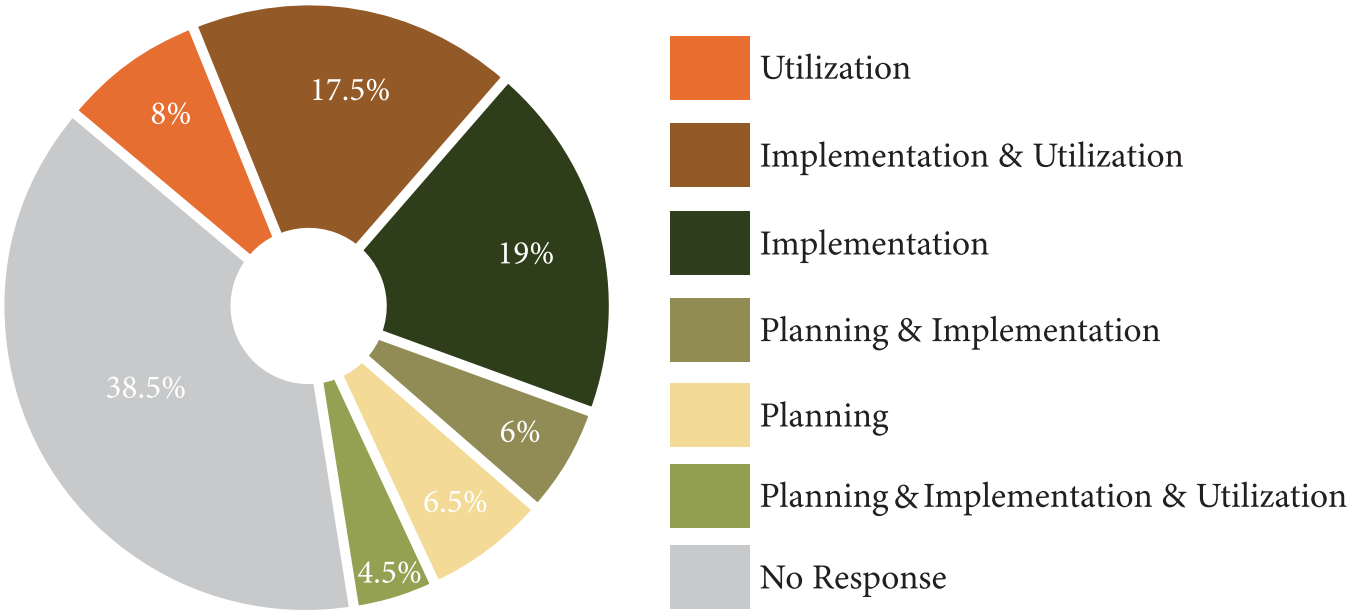

Figure 2. Study participants by grant type (No Response inculdes all grant types)

Non-participating Entity Statistics

The types of entities that did not participate in the effort are demonstrated in the following table:

Type of Entity (of those remaining)	Non-Responses	% of Non-Responses	% of Total Awards
Non-Profit	12	15.6%	6.0%
Business	34	44.2%	17.0%
Tribe	16	20.8%	8.0%
Government	15	19.5%	7.5%

Table 3. Non-participants by entity type.

The breakdown of the 77 awards not included in the analysis are as follows:

- Non-profit: 9 (7 entities had 1 award, 1 entity had 2 awards, 1 entity had 3 awards)
- Business: 26 (21 entities had 1 award, 2 entities had 2 awards, 2 entities had 3 awards, 1 entity had 4 awards)
- Tribe: 11 (7 entities had 1 award, 3 entities had 2 awards, 1 entity had 4 awards)
- Government: 13 (11 entities had 1 award, 2 entities had 2 awards)

A total of 59 entities representing 77 awards were not included in the data collection phase of this study.

Participation Summary

Only one business with three awards directly refused to contribute to the study, citing confidentiality concerns. Most participants did so out of a sense of obligation to the program, a desire to see the program continue, and the opportunity to provide confidential feedback regarding their experience. Several award recipients regretted not being able to provide the requested data.

Reasons for not participating in the study include, but are not limited to, the following:

- No outreach attempt was made
- Respondent refused to provide requested data
- Entity is no longer operational in this field
- Data was not available
  - *No records could be found*
  - *No person could be found who had familiarity with the project*

Of the $60,874,032 in grant funds distributed via 200 CFRP awards from 2001 through 2016, $37,856,539 was allocated to the 123 participating awards and $23,017,493 was disbursed to the 77 awards that did not respond to the study. In sum, 62.2% of distributed award money has associated completed survey data with specified leveraged funds analyzed through IMPLAN, while 37.8% of distributed award money is associated with non-responsive awards. Total projected outcomes included in the Appendices are based on multipliers from actual data.

$60.8 million in grant funds were distributed across 200 awards from 2001 to 2016, $37.8 million went to 123 participating awards and $23 million went to 77 awards that did not respond.

Survey

Entities were asked a series of questions to elucidate the economic impact of their CFRP awards. Respondents were assured confidentiality and anonymity. It was explained that sensitive proprietary data would be aggregated with other responses and not shared with the Forest Service.

Because of the diversity of grant recipients, the questions were modified in real-time to be more applicable to the specific entity. For example, a for-profit business is comfortable talking about "sales" of products and/or services while a non-profit typically is not. A non-profit prefers to refer to "sales" as "revenue", "income" or "funding". While the specific words may have been modified from one interview to another, the intent was the same across the board. And, what could be interpreted as the same question, was asked a number of different ways, in order to ensure no new monies leveraged from the CFRP experience was left out.

Questions were informed by, and modified from TechLink's DoD SBIR study and included the following:

- Did your entity develop any new products or services based on your CFRP award? If so, what were the total sales/revenues/funding of these new products or services?
- Did sales/revenue/funding of other, non-CFRP related, products or services increase as a result of having the CFRP? If so, what were the total sales/revenues/funding of these non-CFRP related products or services?
- Did this CFRP award lead to any other related follow-on awards (not including additional CFRP awards)? If so, what was the value of those awards?
- Did you license or partner with another entity for anything developed with CFRP funding? If yes, what were the total royalties/payments received? If possible, please quantify the total associated sales made by the licensee(s)/partner and provide contact information so we can follow up.
- Did you create a new entity to commercialize anything developed with CFRP funding? If yes, please quantify, if possible, the total associated sales/revenues made by the new entity and provide contact information so we can follow up.
- Did you receive any subsequent investment funding, such as venture capital or angel funding, related to the CFRP? If so, what was the total amount of these investments?
- Was your entity acquired as a direct result of what was developed with CFRP funding? If so, what was the acquisition amount?

CFRP grantee Silver Dollar Racing and Shavings sells animal bedding at a Big R store in Santa Fe.

Examples of leveraged funding include the following:

- Revenue generated from new products/ services[5]
- Increased revenue of existing products/services because of new products/services[6]
- New revenue as a result of being a part of the CFRP network[7]
- New revenue to continue or expand a CFRP initiated endeavor
- New revenue as a result of successful CFRP award completion[8]

The final question was the only qualitative question in the study. It asked: How did having the CFRP impact your entity? Or, asked another way, if you had not received the CFRP funding, what would have happened to your entity?

Partners gather on the Santa Fe National Forest to discuss post-fire effects and treatment effectiveness in the face of a recent wildfire.

Responses were recorded during the interview process. Electronic copies of data intake forms were sent to all participants so they may review and validate their responses. No other attempt was made to verify award recipient provided data.

Qualitative Feedback

In general, study participants welcomed the opportunity to share their opinions about the CFRP itself. And, because Naomi Engelman, who conducted all of the interviews, has a long-standing relationship with the program and many of its awardees, trust was already established, making interviews smoother and responses more forthcoming. Feedback addressed program intentions, management, and implementation. Recipients comments led the report authors to conclude the following:

- This study is long overdue for many reasons including, but not limited to, the following:
  - IRS records retention limitations vary from three to ten years depending on the circumstances; entities cannot be expected to retain records longer than legally required without a contractual obligation to do so.
  - Because so much time has elapsed since many of the awards were implemented, entities lack institutional project knowledge due to internal operational and personnel changes.
  - Many entities revealed insufficient record keeping methods and lack of basic bookkeeping expertise - shortcomings that could have been discovered and corrected earlier.
- Forest Service personnel turnover, favoritism, inconsistencies, and change in priorities is detrimental to program reputation and outcomes. The following examples serve to illustrate this point:
  - The Forest Service disallowed one awardee's material usage once it was discovered to whom

5 *Awardee purchases equipment or develops know-how enabling a new product/service offering.*
6 *A new buyer purchases newly available firewood and also buys previously available posts, poles, and latillas.*
7 *A connection is made at a CFRP event which leads to new revenue.*
8 *Demonstrated CFRP success leads to new revenue.*

the product was being sold. The awardee's material was diverted to another, unrelated use, leaving them in the lurch.
    - The Forest Service reneged on land promised for the establishment of a new fire department "causing further strained relations between the community, who had expended considerable effort, and the Forest Service."
    - A project was supported and encouraged at one level, but then "Fire and NEPA staff buried the NEPA after it was completed," leaving the awardee to believe the Forest Service was never committed to actually implementing the project.
    - A project's material removal effort was stymied by Forest Service staff who declared the egress road unusable at the 11th hour. The awardee was reportedly required to abandon the cut and skidded material and purchase another area for the needed material. The awardee felt betrayed by broken promises and vowed to never participate in the program again.
    - Program administration requested non-profit involvement for collaborative project work while on-the-ground Forest Service staff were resentful of the involvement because it created the perception of unexpected extra work. Forest Service staff asked, "why was the non-profit bothering them and making their jobs more difficult?" While the extra work was supposedly necessary and part of staff's job responsibility, project participation was made very uncomfortable resulting in a negative experience for the non-profit.
    - While some Forest Service staff on the ground are very supportive of CFRP implementation, others are reportedly, not at all supportive, resulting in significant complaints and program vilification.
- The program has developed a reputation for becoming a proposal writing contest with less concern about actual on-the-ground project implementation capacity; furthermore, many smaller entities feel they can no longer compete with entities that can afford to hire professional grant writers. Electronic submission requirements are a real burden for some entities while disproportionately favoring others.
- Planning projects that evaluate new business opportunities are useful for allowing entities to experiment but step away if outcomes are unfavorable, saving them from "throwing good money after bad."
- Interim and final reports are routinely "white-washed" for fear of "consequences" if awardees are honest about their experience.
- A perception exists that "Anglos" disproportionately benefit from awards relative to "Hispanics."
- The fact that some entities receive multiple awards while others get repeatedly turned down has led to very negative feelings about the program.
- A perception exists that the program is too focused on science and research and needs to refocus on treating the land and supporting industry.
- More emphasis should be made on collaboration. Entities that purchase equipment with CFRP funding should be required to collaborate with other CFRP recipients "instead of charging exorbitant rates for utilizing grant subsidized equipment."

Recommendations

Based on qualitative feedback from study participants, implementing the following recommendations would provide the Forest Service with high-quality information for critical decision making.

- Conduct a similar analysis every five years.
- Align program marketing and outreach with legislated program goals and objectives.
- Make it required to respond to grant related studies/assessments in future direct grant agreements.

DATA ANALYSIS

IMPLAN, the popular economic impact analysis platform that connects extensive databases, economic factors, multipliers, and demographic statistics with a modeling system, was used to estimate the economic impact of the total revenue generated as a result of CFRP participation. Thousands of academics, researchers, agencies, associations, governments, and business professionals use IMPLAN. It can predict economic impacts on regions as small as a single zip code to the entire nation. IMPLAN relies on an input-output model which examines relationships between industries and institutions within an economy.[9]

IMPLAN updates its datasets annually. It uses thousands of data points from more than 90 sources. Primary data sources include the following:[10]

- CEW: Census of Employment and Wages (Bureau of Labor Statistics - BLS)
- REA: Regional Economic Accounts (Bureau of Economic Analysis - BEA)
- CBP: County Business Patterns (Census Bureau)
- NIPA: National Income and Product Accounts (Bureau of Economic Analysis - BEA)

However, raw data availability varies by year and with each level of regional resolution. In other words, nearly all database components are available at the national level, while increasingly less raw data is available at the state, county, and zip code levels. Therefore, the size of the region designated in an IMPLAN model matters.

IMPLAN employs a Multi-Regional Input-Output (MRIO) approach to analysis, making it possible to track how an impact on one industry in a specified region affects the production of other industries and household spending in adjacent regions. With MRIO analyses, a direct effect in one region that triggers indirect and induced effects in another region is not lost.

IMPLAN refers to lost economic activity as "leakages". Leakages can occur via regional factors or holes in data sources. They include, but are not limited to taxes, savings, profits, imports, and commuting. In general, a larger region captures more secondary spending, resulting in larger economic impacts. And similarly, a model run with aggregate data yields larger impacts than a model run on an annual basis.

A Forest Stewards Youth Corps member works on a prescribed burn as part of a CFRP on Cerro Del Aire.

9 *www.implan.com*
10 *https://implanhelp.zendesk.com/hc/en-us/articles/115009674448-IMPLAN-Data-Sources*

IMPLAN input-output models assume:

- Constant returns to scale - the same quantity of inputs is needed per unit of output, regardless of the level of production.
- No supply constraints - no restrictions to raw materials and employment and assumes there is enough to produce an unlimited amount of product (a big assumption for this study).
- Fixed input - no input substitution in response to a change in output.
- Industry technology - an industry uses the same technology to produce each of its products.
- Constant make - an industry will always produce the same mix of commodities regardless of the level of production.
- Static model - no price changes are built in.

Effects defined:

Direct - expenditures made because of an activity or policy.

Indirect - business to business expenditures that stem from the initial input purchases.

Induced - household spending of employees within the supply chain.

In other words, the relationship between suppliers and producers is static and new demand trickles down through the economy affecting everyone in the supply chain resulting in a multiplier effect which is greater than the change in demand itself.

For example, a CFRP awardee received the maximum grant amount of $360,000 to implement their project. IMPLAN refers to the expenditure of the grant funds as a "direct effect" because it represents a change or expenditure resulting from an activity or policy. It is new monies introduced into the region. "Indirect effects" include the business-to-business purchases in the supply chain that result from the direct effect. This can include equipment, supplies, and labor. "Induced effects" are the values coming from direct and indirect workers household spending. The sum of these effects represents the total economic impact and are greater than the original investment.

NAICS Code Assignments

IMPLAN uses North American Industrial Classification System (NAICS) codes to ascertain economic multipliers associated with specific business activities. NAICS is the national standard employed by Federal statistical agencies in classifying establishments for the collection, analysis, and publishing of statistical data related to the U.S. economy. Multipliers are based on spending patterns unique to each industry and region. Many entities were not aware of their primary NAICS code and were assigned one based on the best judgement of the interviewer. The primary default NAICS code was 115310 - Support Activities for Forestry which corresponds to IMPLAN code 19.

Multipliers are used to distill the overall impact of new money flowing through the economy into easily digestible information. To calculate a standard multiplier, the direct, indirect, and induced effects are summed and then divided by the direct effect. Since multipliers are tied to industry sectors and regions –

some industries and regions generate more trickle-down benefits than others - NAICS codes matter. As an example, a sawmill has a higher multiplier than an environmental consulting firm.

For efficient modeling, revenues were aggregated over time and were assumed to be in 2020 dollars. While data was collected by year, modeling by year proved to be exponentially more time consuming and less impactful due to increased leakages. And, while some revenues dated back to the early 2000s, it was decided to use 2020 as the dollar reference year. This is a conservative approach in that it does not account for inflation. For example, according to the U.S Bureau of Labor Statistics, Consumer Price Index (CPI) Inflation Calculator,[11] one dollar earned in January 2001 was worth $1.49 in January 2021.

A masticator at work on a CFRP project on Rowe Mesa.

No other attempt was made to verify or standardize award recipient provided data. As such, variations in response data exist. Examples include:

- Data provided is assumed to be as accurate as possible
- Some report 2020 earnings while others stop at 2019
- Some 2016 awards and one 2015 award were still in progress
- Funding generated by sub-contractors or project partners is largely not included
- Some report fiscal year while others calendar year
- Some could not verify grant duration (e.g. if an extension was provided)
- Some provided actual numbers, while others provided percentages of overall budgets
- In-kind contributions are not included
- Gross receipts may or may not be included

Assumptions

- If the entity is located out of state, it was assigned a zip code based on the project location
- When ranges were provided, averages were used
- When entities received multiple awards, several reported impacts on the earliest award
- Impacts are conservative

For this analysis we used IMPLAN's input-output framework to model two changes to the NM economy: (1) the CFRP funding activity itself, and (2) the new revenue generated as a result of participation in CFRP. With a greater understanding of the programs' overall economic contribution to the region (i.e. total output, value added, employment, labor, and taxes), administrators can make better informed decisions.

11 *https://www.bls.gov/data/inflation_calculator.htm*

RESULTS

Financial data was collected from 123 of 200 awards. Of the 123, 23 reported no impact as a result of having a CFRP award. In order to not double count, 13 recipients of multiple awards reported all impacts on only one of their multiple awards. For example, some subsequent awards were continuations of earlier awards. And while four awardees wanted to contribute to the effort, no data was available.

Impacts	Responses	% of Responses	% of Total Awards
Reported no impact	23	18.7%	11.5%
Reported impacts on other grants	13	10.6%	6.5%
Reported no data available	4	3.3%	2.0%

Table 4. Participants with no impacts.

Of the 123 respondents, 78% reported earning additional revenue as a result of having the Forest Service CFRP award. Of note, the ability to generate additional revenue is likely to be considerably higher, as it typically takes a number of years before impacts are realized. As such, many of the newer awards have likely not yet resulted in significant gains.

The total cumulative funding leveraged from the USDA CFRP awards was over $151.45 million.[12] For the 96 awards[13] reporting leveraged funds, this equates to an average of $1.57 million per award. This exceeds the average original investment of $305,437 per award by a multiple of more than five[14] and illustrates that CFRP achieved substantial economic impact from its funding.

$151.4 million was leveraged from Forest Service CFRP awards.
=
$1.5 million per award or 5 times the original investment.

12 *$151,453,521 which likely understates actual leveraged funding generated for the reasons discussed in the report.*
13 *Equals 123 – 23 – 4.*
14 *$1.57M / $305,437 = 5.165.*

As previously reported, total leveraged funding includes additional revenue generated by the CFRP awardees who received a total of $37,856,539 in grant funding. The following table highlights the breakdown of revenue generated by entity type.

Entity Type	Additional Revenue	%
Non-Profit	$28,921,454	19.1%
Business	$68,140,020	45.0%
Tribe	$24,083,227	15.9%
Government	$30,308,820	20.0%

Table 5. Additional revenue generated from grants, by entity type.

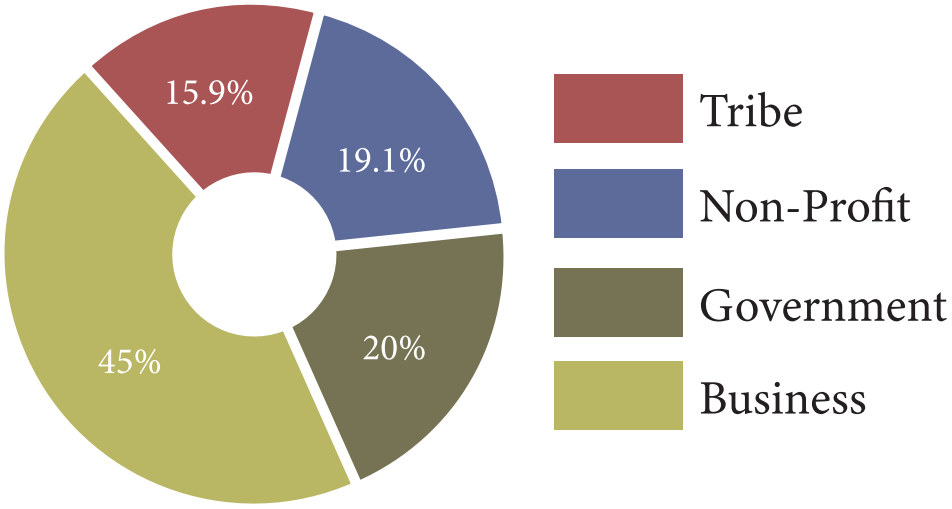

Figure 3. Percent additional revenue generated by entity out of the total of $151,433,521.

The same total revenue generated amount ($151,453,521) is broken down by grant type below.

Grant Type	Additional Revenue	%
Implementation	$70,162,204	46.3%
Utilization	$48,407,650	32.0%
Planning	$2,121,246	1.4%
Implementation & Utilization	$14,391,385	9.5%
Planning & Implementation	$11,991,056	7.9%
Planning, Implementation & Utilization	$4,379,980	2.9%

Table 6. Additional revenue generated from grants, by grant type.

As is exemplified in the above tables, for profit business entities demonstrated the highest financial return on investment along with implementation type grants.

The following table breaks down the total revenue generated by source.

Source	Additional Revenue	%
New product/service revenue	$87,359,478	57.7%
Non-CFRP product/service revenue	$41,172,973	27.2%
Follow-on awards	$17,085,574	11.3%
License/partner royalties or revenue	$3,606,250	2.4%
New entity revenue	$790,246	0.5%
Investment funding	$1,439,000	1.0%

Table 7. Additional revenue generated from grants, by source.

Again, it is important to remember that reported revenues are likely below actual revenues. Factors contributing to that assumption include, but are not limited to, the following:

- Non-participation. As previously noted, 77 entities did not participate—either because they declined to participate, were unreachable, did not respond to repeated requests to participate, are no longer operational, data was unavailable, or no attempt was made to reach them. Any number of non-participatory entities could have considerable impacts not included herein.
- Licensee/partner and new entities. While a few entities reported that their award supported a partner or led to the creation of a new for-profit business, drilling down to that next level of revenue generated was too labor intensive and beyond the scope of the current study. Since this represents less than 3% of reported revenue, the absence of the additional, next level data is not projected to have a significant impact on overall outcomes.
- Inflation. As previously discussed, revenues were not adjusted for inflation. Therefore, early revenues are undervalued. All revenues were aggregated and 2020 was used for the dollar year in modelling.
- As such, the total revenue generated as a result of participation in the CFRP is conservative and likely under values the actual impact of the Forest Service CFRP projects awarded from 2001 through 2016.

Wood hauled to Mt. Taylor Manufacturing from a CFRP in the Zuni Mountains to Milan, NM.

State-Level Economic Impact Analysis

IMPLAN's input-output model was used to quantify the economic impacts resulting from (1) the Forest Service CFRP grant activity itself and (2) the additional revenue generated as a result of grant implementation. Results are presented below for output, employment, labor income, value added, and tax revenues. As previously noted, all monies were entered in 2020 dollars. The 2018 IMPLAN model was used as it was the most complete data year available at the time of analysis. Reports are viewed in 2021, which includes a slight inflation adjustment.

Total Output

IMPLAN defines output as the total production value of an industry. This includes all goods or services used for further production or consumption and is measured via revenue/potential revenue generated from production. Output is a key metric of economic impact analysis.

$60.8 million in initial investment resulted in $102.9 million from grant funding impacts AND $276.1 million from leveraged revenue impacts generating a total impact of $379.02 million added into the State's economy.

The combined total output from the Forest Service CFRP activity reported in this study was $379.02 million. Again, this is an underestimate as additional revenue data was only provided for 61.5% of awards. Direct effects produced a total of $213.44 million in output. Indirect effects produced a total of $65.5 million in output. And, induced effects produced a total of $100.07 million in output.[15]

CFRP Funding

The Forest Service CFRP investment represents new funding injected into the NM economy. The following table highlights the impact of all 200 grants from the 2001 – 2016 period on the state's economy using the single NAICS code entitled "support services for forestry". Use of this lone NAICS code produces a very conservative output model (see previous discussion on how NAICS codes impact IMPLAN modeling).

Economic Indicators by Impact	Direct	Indirect	Induced	Total
Employment (Jobs)	1423.67	23.47	254.22	1701.36
Labor Income	$ 50,136,438	$ 1,305,874	$ 10,644,473	$ 62,086,786
Value Added	$ 50,441,546	$ 2,193,298	$ 20,538,887	$73,173,732
Output	$ 61,506,380	$ 4,655,689	$ 36,736,770	$102,898,839
Total Tax	$ 11,258,161	$ 586,644	$ 4,428,566	$16,273,371

Table 8. Economic impact of grant activity.

15 *Totals may not sum due to rounding.*

The initial investment of approximately $60.87 million[16] produced a total output of adding $102.89 million into the State's economy. Approximately $4.66 million was generated from supply chain business-to-business purchases and $36.74 million was generated from direct and indirect workers household spending. The model produced a 1.69 multiplier, which tells us that for every dollar of grant money spent, an additional $0.69 is circulated in the economy.[17]

Additional Revenue Generated

Grant implementation led to the generation of additional revenues that would not have been possible without the initial grant investment. The following table highlights the impact of the 123 awards that provided data for this study on the state's economy. For this model, multiple NAICS were used, according to survey responses, producing more accurate outcomes. However, because data was used from only 61.5% of the total number of awards, outcomes are conservative.

$151.9 million of additional revenue generated added $276.1 million into the State's economy.

Economic Indicators by Impact	Direct	Indirect	Induced	Total
Employment (Jobs)	1956.84	550.07	438.37	2945.28
Labor Income	$67,972,787	$20,476,068	$18,354,550	$106,803,406
Value Added	$75,700,432	$28,974,339	$35,412,436	$140,087,207
Output	$151,932,279	$60,848,277	$63,339,614	$276,120,170
Total Tax	$16,922,440	$6,526,291	$7,635,745	$31,084,475

Table 9. Economic impact of additional revenue generated.

The $151.93 million of additional revenue generated produced an effect of adding $276.12 million into the state's economy. Approximately $60.85 million was generated from supply chain business-to-business purchases and $63.34 million was generated from direct and indirect workers household spending. The model produced a 7.29 multiplier, which tells us that for every dollar of grant money spent, an additional $6.29 is circulated in the economy.

16 *The difference between the Grant Money Received and the Direct Effect is accounted for by inflation.*
17 *Multiplier = (Direct + Indirect + Induced)/Grant Money Received.*

Employment

IMPLAN's employment impacts estimate of the number of jobs supported by the estimated output. Numbers are reported in "job years" whereas one job is supported for a year. The combined total employment from the Forest Service CFRP activity reported in this study was 4,646 job years, or an average of 290 jobs per year over the 16-year period from 2001- 2016. Again, this is an underestimate as additional revenue data was only provided for 61.5% of awards. Direct effects produced a total of 3,381 job years or an average of 211 jobs per year. Indirect effects produced a total of 574 job years or an average of 36 jobs per year. And, induced effects produced a total of 692 job years or an average of 43 jobs per year.[18]

Labor Income

Labor income is compensation, including wages and benefits, paid to workers and owners. The combined total labor income from the Forest Service CFRP activity reported in this study was $168.89 million. Again, this is conservative as additional revenue data was only provided for 61.5% of awards. Direct effects produced a total of $118.11 million in labor income. Indirect effects produced a total of $21.78 million in labor income. And, induced effects produced a total of $29 million in labor income.[19]

290 jobs per year

on average were created from Forest Service CFRP activity over the 16 years from 2001-2016.

Value Added

IMPLAN defines value added as the difference between output and the cost of intermediate inputs. The calculation equals gross revenue plus inventory change minus cost of goods sold. The data point is akin to an industry's GDP (gross domestic product) contribution and is considered a very important economic indicator because it accounts for the purchase of goods and services necessary for the production of value-added products.

The combined total value added from the Forest Service CFRP activity reported in this study was $213.26 million. Again, this is an underestimate as additional revenue data was only provided for 61.5% of awards. Direct effects produced a total of $126.14 million in value added. Indirect effects produced a total of $31.17 million in value added.

The Ramah Navajo Fuels Crew working on the Bluewater CFRP.

18 *Totals may not sum due to rounding.*
19 *Ibid.*

And, induced effects produced a total of $55.95 million in value added.[20]

Total Taxes

According to IMPLAN, tax impacts include all tax revenue in the study area across all levels of government - sub county, district, county, state, and federal. However, the underlying supporting data does not encompass a high degree of detail. For example, state government tax revenue by county is sometimes based on proxy information from other counties and states. Similarly, IMPLAN may have to aggregate city-specific data to project county-level data, such that a model of two cities in the same county will have the same implied effective tax rates. Total taxes include, but are not limited to, sales tax, property tax, income taxes, corporate tax, motor vehicle licenses, severance taxes, and excise taxes.

The combined total taxes from the Forest Service CFRP activity reported in this study was $47.36 million. Again, this is an underestimate as additional revenue data was only provided for 61.5% of awards. Direct effects produced a total of $28.18 million in total taxes. Indirect effects produced a total of $7.11 million in total taxes. And, induced effects produced a total of $12.06 million in total taxes.[21]

Detailed Breakdowns of Total Output

The following tables provide detailed breakdowns of the economic impact for both, the Forest Service CFRP grant activity and the additional revenue generated because of award implementation. The combined total output from the Forest Service CFRP activity reported in this study was $379.02 million.

CFRP Funding

The following breakdowns were produced by IMPLAN's state-level model using the single NAICS code (Support Activity for Forestry) for all 200 awards with a total value of over $60.874 million. As previously discussed, the multiplier for the initial investment is a straight 1.69 across-the-board because of the modeling methodology.

The combined total output from the Forest Service CFRP activity reported in this study was $379 million.

Entity Type	Grant Money Received	Direct	Indirect	Induced	IMPLAN Output Totals	Multiplier
Non-Profit	$ 17,335,227	$ 17,515,302	$ 1,325,811	$ 10,461,608	$ 29,302,721	1.69
Business	$ 22,299,311	$ 22,530,952	$ 1,705,467	$ 13,457,375	$ 37,693,794	1.69
Government	$ 10,011,520	$ 10,115,518	$ 765,688	$ 6,041,836	$ 16,923,042	1.69
Tribe	$ 11,227,974	$ 11,344,608	$ 858,723	$ 6,775,952	$ 18,979,283	1.69
TOTAL	**$ 60,874,032**	**$ 61,506,380**	**$ 4,655,690**	**$ 36,736,770**	**$ 102,898,840**	**1.69**

20 *Ibid.*

21 *Totals may not sum due to rounding.*

Table 10. State-level impacts by entity type.

National Forest	Grant Money Received	Direct	Indirect	Induced	IMPLAN Output Totals	Multiplier
Carson	$ 15,634,097	$ 15,796,501	$ 1,195,707	$ 9,434,996	$ 26,427,204	1.69
Cibola	$ 15,492,156	$ 15,653,086	$ 1,184,851	$ 9,349,336	$ 26,187,273	1.69
Gila	$ 7,593,966	$ 7,672,851	$ 580,792	$ 4,582,870	$ 12,836,513	1.69
Lincoln	$ 4,270,268	$ 4,314,627	$ 326,593	$ 2,577,057	$ 7,218,277	1.69
Santa Fe	$ 17,883,545	$ 18,069,316	$ 1,367,746	$ 10,792,511	$ 30,229,574	1.69
TOTAL	**$ 60,874,032**	**$ 61,506,380**	**$ 4,655,690**	**$ 36,736,770**	**$ 102,898,840**	**1.69**

Table 11. State-level impacts by National Forest.

Additional Revenue Generated

The following breakdowns were produced by IMPLAN's state-level model using multiple NAICS codes (producing varying multipliers) for the 123 study participants who received $37,856,539 in CFRP grant funding.

Grants High School student and teacher monitor ecological conditions with Cottonwood Gulch Foundation staff on the 2005 Bluewater I CFRP.

Again, the multiplier for the additional revenue generated is variable because different industry codes have different effects when modeled through IMPLAN. There are significant differences between models using a single code (e.g. industry code 19 for the original grant investment) versus models run using multiple codes. For example, the multiplier for IMPLAN code 463 (environmental consulting) is approximately 1.81 and the multiplier for IMPLAN code 132 (sawmills) is 2.08. This effect also contributes to why the reported impacts are very conservative and probably significantly undervalued.

Another reason that the multipliers differ from one model to the other is because with the grant funding model, the grant investment itself was the direct input/direct effect number modeled through IMPLAN. But for the revenues model, the additional revenue leveraged is the direct input number with the resulting multiplier equation being direct + indirect + induced/grant amount. The grant amount in this instance is not modeled through IMPLAN but is used to determine the multiplier because it was the base amount of money that created the opportunity for money to be leveraged. The multipliers vary in the breakdowns because the ratio of grant money to leveraged money is not balanced across all categories (entity type, national forest, etc.) and because multiple NAICS codes were used.

Entity Type	Grant Money Received	Total Leveraged Amount	Direct	Indirect	Induced	IMPLAN Output Totals	Multiplier
Non-Profit	$13,334,351	$28,921,454	$29,311,894	$6,777,008	$10,916,069	$47,004,972	3.53
Business	$12,356,073	$68,140,020	$70,739,372	$49,563,729	$21,697,389	$142,000,490	11.49
Govern-ment	$6,006,210	$30,308,820	$27,549,362	$2,505,665	$16,187,670	$46,242,696	7.70
Tribe	$6,159,905	$24,083,227	$24,331,650	$2,001,876	$14,538,486	$40,872,012	6.64
TOTAL	**$37,856,539**	**$151,453,521**	**$151,932,279**	**$60,848,277**	**$63,339,614**	**$276,120,170**	**7.29**

Table 12. State-level impacts by entity type.

National Forest	Grant Money Received	Total Leveraged Amount	Direct	Indirect	Induced	IMPLAN Output Totals	Multiplier
Carson	$9,717,353	$17,068,257	$17,337,650	$5,018,984	$5,615,360	$27,971,994	2.88
Cibola	$8,195,053	$64,449,339	$64,443,658	$28,124,796	$28,278,200	$120,846,654	14.75
Gila	$6,401,962	$16,899,678	$16,843,243	$10,385,004	$6,088,980	$33,317,226	5.20
Lincoln	$2,717,755	$6,370,455	$6,468,544	$1,657,704	$1,950,163	$10,076,410	3.71
Santa Fe	$10,824,416	$46,665,792	$46,839,185	$15,661,790	$21,406,910	$83,907,885	7.75
TOTAL	**$37,856,539**	**$151,453,521**	**$151,932,279**	**$60,848,277**	**$63,339,614**	**$276,120,170**	**7.29**

Table 13. State-level impacts by National Forest.

Appendix 3 provides breakdowns of additional revenue generated based on county-level modeling for overall economic impact, entity type, grant type, national forest, and county.

A stand following a CFRP treatment on State Trust Land near Black Lake, NM.

SUMMARY

The purpose of this study was to quantify the Forest Service CFRP's overall contribution to the New Mexican economy. It examined the economic outcomes and impacts from 200 CFRP awards implemented during 2001-2016 using IMPLAN's input-output modeling software.

Study respondents provided data on new revenue that was generated as a result of their participation in the USFS CFRP. Data was collected for 61.5% of awards. Over 80% of awards included in the study reported earning additional revenues that they would not have otherwise realized. The total additional revenue earned by reporting entities was $151,453,521.

As discussed, the quantitative results presented herein are very conservative. It is expected that the overall impact of the CFRP is far greater. IMPLAN estimated the total economic impacts related to both the CFRP grant funding and the subsequent revenues that resulted from program participation. Impacts were analyzed on the state level and include total economic output, employment, labor income, value added, and tax revenues. Breakdowns are provided for award recipient entity type (non-profit, business, government, tribe) and National Forest. Appendix 3 contains data from county-level modeling.

$379 million,

the minimum total economy-wide output produced by the CFRP activity analyzed in this study.

The Forest Service CFRP activity modeled in this study produced at minimum, a total economy-wide output of $379 million. This equates to an overall 9:1 economic return on the program's investment, meaning that for every dollar distributed in grant funding, an additional eight dollars were generated in the economy.

For every dollar distributed in grant funding, an additional eight dollars were generated in the economy, resulting in a 9:1 return on the program's investment.

Summarized responses from the study's single qualitative question asking how participation in the program affected their entity are provided in the Qualitative Feedback section of this report.

APPENDICES

Appendix 1. USFS Letter

The following letter was emailed by Forest Service staff to all awardees' email address on file. Study participants who did not receive the letter via the USFS ultimately received the letter from Naomi Engelman during her initial contact.

United States Department of Agriculture **Forest Service** **Southwestern Region Regional Office**

333 Broadway SE
Albuquerque, NM 87102
505-842-3292
Fax: 505-842-3800

File Code: 2400; 1580
Date: April 7, 2020

Dear Current or Former CFRP Awardee:

Congratulations on being one of the many entities that have successfully competed in USDA's Forest Service Collaborative Forest Restoration Program (CFRP) over the last two decades! Collectively, since 2001 more than 150 organizations have won and completed over 220 awards from the Forest Service. The resulting outcomes have contributed substantially to our State's economy. However, our leaders and citizens need to better understand the extent of such contributions to fully appreciate their value. That is why I am asking for your help with an important new study to evaluate the economic impacts of the CFRP as a whole.

As we look toward the future of the program, we require a more detailed assessment of the Program's outcomes. Specifically, the Return on Investment (ROI) on this $68 million investment of taxpayers' dollars; and for the Forest Service, how that investment has supported our mission and the public interest.

As the Acting Regional Forester for the Southwestern Region, I have engaged the services of the Forest Stewards Guild (FSG), a trusted Forest Service non-profit collaborator since the 1990s, to examine the outcomes and economic impacts of all CFRP contracts that were awarded between 2001 and 2018. The FSG has engaged the services of QB LLC's Naomi Engelman, another long-time CFRP partner, to lead the effort. I am asking for your cooperation in supporting this study.

QB LLC and the FSG will maintain strict business confidentiality, so please be assured that all economic and financial information, including sales, will be kept entirely confidential. Individual company information will only be aggregated with the information from all participants and will not be shared with any government entity, including the USDA's Forest Service.

This spring and summer, Naomi will be contacting you to gather economic information regarding your prior CFRP awards. She will be respectful of your time in her interactions with you. Please help ensure a successful study by being responsive to this survey and by providing the information requested. The results will be beneficial to the entire Program and will provide outcomes that will help other participants in the future.

In addition to seeking information on the cumulative economic impacts of CFRP awards, Naomi will be looking for individual "success stories," where one of your awards led to important commercial or forest restoration-related outcomes. Please be thinking of possible success stories and share them with her. With your agreement, professional writers may contact you to create publication worthy write-ups, which you will get to review and approve before any release. These success stories may generate valuable publicity for your

Appendix 2. NAICS Codes

The following NAICS codes were used to model the total revenue generated from the Forest Service CFRP awards in this study. If a code was not provided by the survey respondent, the interviewer assigned one based on the best information available. Code 115310 - Support Activities for Forestry was most widely used when no other code seemed appropriate.

NAICS Code	IMPLAN Industry Code	Description
111421	6	Nursery and Tree Production
113210	15	Forest Nurseries and Gathering of Forest Products
113310	16	Logging
115310	19	Support Activities for Forestry
321113	132	Sawmills
321999	143	All Other Miscellaneous Wood Product Manufacturing
337212	371	Custom Architectural Woodwork and Millwork
339950	385	Sign Manufacturing
541620	463	Environmental Consulting Services
541715	464	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotech and Biotech)
611310	481	Junior colleges, Colleges, Universities, and Professional schools
813312	522	Environment, Conservation, Wildlife, and Social Advocacy Organizations
813410	524	Civic, Labor, and Social Organizations

Table 14: Most common NAICS codes used for Forest Service *CFRP IMPLAN modeling.*

Appendix 3. County-level Analysis of USFS CFRP Economic Impacts

Additional Revenue Generated

Grant implementation led to the generation of additional revenues that would not have been possible without the initial grant investment. The following table highlights the impact of the 123 awards that provided data for this study on New Mexico's economy. For this model, multiple NAICS were used, producing more accurate outcomes. However, because we used data from only 61.5% of the total number of awards, outcomes are conservative.

Additional Economic Indicators by Impact	Direct	Indirect	Induced	Total
Employment	2240.78	479.3	303.73	3023.81
Labor Income	$ 70,340,747	$ 12,610,002	$ 11,301,608	$ 94,252,357
Value Added	$ 78,686,945	$ 18,519,149	$ 23,156,797	$ 120,362,892
Output	$ 151,832,107	$ 45,363,061	$ 41,475,786	$ 238,670,956
Total Tax	$ 17,802,704	$ 5,067,681	$ 4,688,832	$ 27,559,219

Table 15: USFS CFRP economic impacts modeled by county.

Detailed Breakdowns

The following tables break down the county-level impacts from the additional funding leveraged by the awardees who received more than $37.856 million in contracts by entity type, grant type, national forest, and county.

Entity Type	Grant Money Received	Total Leveraged Amount	Direct	Indirect	Induced	IMPLAN Output Totals	Multiplier
Non-Profit	$13,334,351	$28,921,454	$29,311,894	$7,795,522	$8,578,037	$45,685,454	3.43
Business	$12,356,073	$68,140,020	$70,679,360	$33,125,404	$13,797,000	$117,601,765	9.52
Government	$6,006,210	$30,308,820	$27,509,203	$3,302,661	$9,389,134	$40,200,998	6.69
Tribe	$6,159,905	$24,083,227	$24,331,650	$1,139,474	$9,711,615	$35,182,739	5.71
TOTALS	**$37,856,539**	**$151,453,521**	**$151,832,108**	**$45,363,061**	**$41,475,787**	**$238,670,956**	**6.30**

Table 16. Forest Service *CFRP county impacts by entity type.*

Grant Type	Grant Money Received	Total Leveraged Amount	Direct	Indirect	Induced	IMPLAN Output Totals	Multiplier
Implementation	$11,760,572	$70,162,204	$67,674,129	$12,027,885	$20,896,738	$100,598,752	8.55
I/U	$12,246,519	$14,391,385	$17,622,886	$2,794,286	$5,994,109	$26,411,282	2.16
Planning	$3,197,475	$2,121,246	$8,390,230	$949,119	$3,597,899	$12,937,247	4.05
P/I	$3,608,934	$11,991,056	$5,870,346	$1,498,143	$2,044,331	$9,412,821	2.61
P/I/U	$2,581,332	$4,379,980	$4,419,867	$801,355	$1,501,426	$6,722,648	2.60
Utilization	$4,461,707	$48,407,650	$47,854,651	$27,292,273	$7,441,284	$82,588,207	18.51
TOTAL	**$37,856,539**	**$151,453,521**	**$151,832,108**	**$45,363,061**	**$41,475,787**	**$238,670,956**	**6.30**

Table 17. Forest Service *CFRP county impacts by grant type.*

National Forest	Grant Money Received	Total Leveraged Amount	Direct	Indirect	Induced	IMPLAN Output Totals	Multiplier
Carson	$9,717,353	$17,068,257	$17,337,650	$5,529,793	$4,466,546	$27,333,989	2.81
Cibola	$8,195,053	$64,449,339	$64,443,658	$25,386,932	$16,865,513	$106,696,103	13.02
Gila	$6,401,962	$16,899,678	$16,809,333	$5,446,792	$3,391,777	$25,647,902	4.01
Lincoln	$2,717,755	$6,370,455	$6,436,630	$190,929	$3,084,889	$9,712,449	3.57
Santa Fe	$10,824,416	$46,665,792	$46,804,837	$8,808,616	$13,667,062	$69,280,514	6.40
TOTALS	**$37,856,539**	**$151,453,521**	**$151,832,108**	**$45,363,061**	**$41,475,787**	**$238,670,956**	**6.30**

Table 18. Forest Service *CFRP county impacts by National Forest.*

County	Grant Money Received	Total Leveraged Amount	Direct	Indirect	Induced	IMPLAN Output Totals	Multipler
Bernalillo	$1,942,935	$1,176,500	$1,168,463	$4,324,694	$5,980,119	$11,473,277	5.91
Catron	$1,336,672	$9,379,900	$9,239,822	$3,189,670	$602,308	$13,031,799	9.75
Cibola	$1,076,400	$30,893,975	$30,523,646	$10,068,575	$2,698,730	$43,290,950	40.22
Colfax	$1,080,000	$1,495,000	$1,501,460	$664,716	$256,225	$2,422,401	2.24
Grant	$3,745,290	$6,960,178	$7,004,098	$1,696,195	$2,469,863	$11,170,156	2.98
Lincoln	$2,717,755	$6,370,455	$6,436,630	$234,211	$2,957,078	$9,627,919	3.54
Luna	$240,000	$500,000	$505,194	$109,425	$185,536	$800,156	3.33
McKinley	$1,077,479	$1,981,980	$2,002,568	$9,535,774	$1,344,100	$12,882,443	11.96
Mora	$720,000	$0				$0	0.00
Rio Arriba	$2,603,030	$17,041,889	$17,207,822	$1,038,729	$4,307,652	$22,554,203	8.66
San Miguel	$2,024,989	$15,696,554	$15,520,029	$2,736,198	$930,664	$19,186,890	9.48
Sandoval	$2,391,697	$6,407,938	$6,476,720	$940,149	$2,640,272	$10,057,142	4.21
Santa Fe	$8,136,957	$16,514,691	$16,755,819	$4,697,440	$9,891,892	$31,345,150	3.85
Sierra	$360,000	$59,600	$60,219	$160,015	$43,419	$263,653	0.73
Taos	$5,872,557	$8,782,007	$8,941,447	$3,264,396	$2,133,635	$14,339,478	2.44
Torrance	$2,530,778	$28,192,854	$28,488,171	$2,702,875	$5,034,294	$36,225,340	14.31
TOTAL	**$37,856,539**	**$151,453,521**	**$151,832,108**	**$45,363,061**	**$41,475,787**	**$238,670,956**	**6.30**

Table 19. USFS CFRP county impacts.

Methodology for County-level Analysis

IMPLAN was used to model the impacts of the revenue generated from the 123 Forest Service CFRP awards at the county level. Done this way, direct effects are allocated to individual counties as opposed to the entire state. For example, if a Santa Fe County-based entity generated $100,000, that leveraged amount was modeled with only the data available from Santa Fe County and specific to the designated industry code. While IMPLAN accounts for some spillover effects between counties (per MRIO), the scope of many of these projects were not confined to a single county. In addition, national forests can span multiple counties so assigning a singular zip code or county to each project became problematic in that it did not account for cross-county spending and project impacts. These county-level models do not wholly reflect the impact that CFRP had on the entire state of New Mexico; they only provide insight on the counties that have entities based within their borders.

County-level information is typically available for some data (e.g. employment, employee compensation, proprietary income, population, federal and state finances); however, remaining county data is estimated.[1] Due to increasingly less raw data being available at a more specific regional resolution, missing data can result in increased leakages. According to IMPLAN, since there are no clear-cut ways to address these leakages, "holes" of missing data can be difficult to identify and remedy. This was evidenced with designated industry codes in that not all counties have associated data for every code used in this study. For these reasons, modeling at the state level was determined to produce the most comprehensive and accurate analysis for this study.

1 *www.IMPLAN.com*

Major findings of the report:

9:1 return on the Forest Service investment

4,646 jobs created (an average of 290 jobs per year over the 16-year analysis period)

$379 million in total statewide economic output

$151,453,521 in additional revenue generated

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