



Multistate Research Fund

IMPACTS

IMPACT MATTERS

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mrfimpacts.org



WORKSHOP AGENDA

- Present tips
- Critique examples
- Q&A



WHAT
is **IMPACT?**



WHAT IS IMPACT?

An impact is a *change* in:

- Knowledge
- Behavior
- Condition





CHANGES IN KNOWLEDGE

- Farmers demonstrated *greater knowledge* of pesticides
- Consumers *improved understanding* of food ingredients and labels
- Seniors have *greater awareness* of mental health resources
- Scientists made *breakthroughs* the *transformed* the field

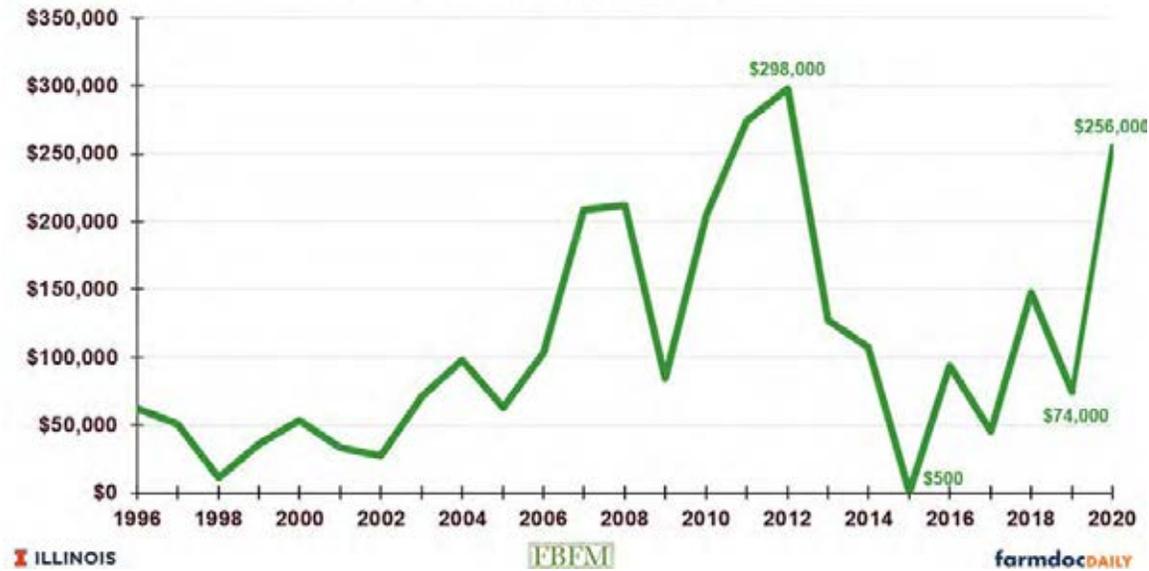


CHANGES IN BEHAVIOR

- Kids are *eating more* veggies
- Farmers *adopted* new tools
- *Influenced* decisionmakers to make policy changes, *enact* regulations, *approve* funding



Figure 1. Average Net Incomes of Grain Farms Enrolled in Illinois Farm Business Farm Management (FBFM), 1996 to 2020



CHANGES IN CONDITION

- Economic
- Environmental
- Social
 - *e.g., community / family / individual health or wellbeing*



WHAT
is an **IMPACT**
STATEMENT?



WHAT IS AN IMPACT STATEMENT?

Impact statement: a *brief* summary in *lay terms* of the *difference* a project or program has made



WHAT IS AN IMPACT STATEMENT?

An impact statement answers the questions:

- So what?
- Who cares?



WHY

is **IMPACT**
REPORTING
important?



WHY IS IMPACT REPORTING IMPORTANT?

- Required
- Accountability
- Influences decisions about your projects
- Raises awareness, interest, and support
- Catches attention

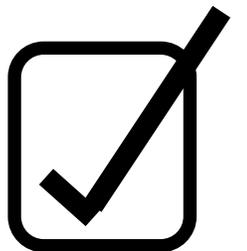
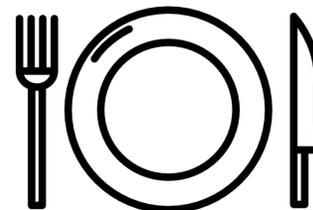
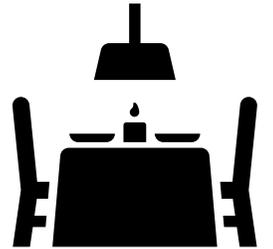
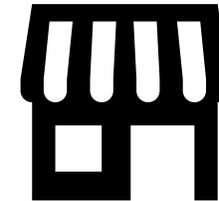
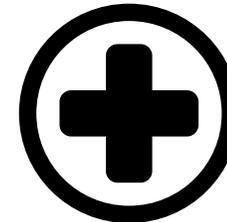
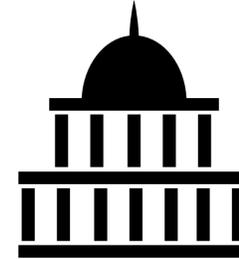
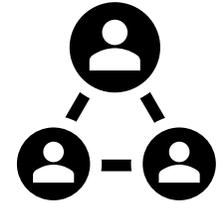


WHO
uses **IMPACT**
STATEMENTS?



WHO USES IMPACT STATEMENTS?

- Grantors, funders, partners
- Your organization's leaders, PR team
- The media
- Decisionmakers
- Practitioners
- Food/wellness industry
- The general public



HOW do they
use **IMPACT**
STATEMENTS?





United States
Department of
Agriculture

National Institute
of Food
and Agriculture

USER INSPIRED SCIENCE TRANSFORMING LIVES

2017 Annual Impact Report

Maggie Lawrence, Editor

May 3, 2023

Making A Difference

Land-grant Universities Key in Managing Devastating Emerald Ash Borer





Today

NUTRITION PROGRAMS FOR SENIORS

JEREMY EVERETT
Baylor Collaborative on Hunger & Poverty
Founder & Executive Director

C-SPAN2

Jeremy





THE UNIVERSITY OF GEORGIA
**COOPERATIVE
EXTENSION**

Return on Investment

A REPORT FOR CONGRESSMAN AUSTIN SCOTT

UGA Cooperative Extension is working hard for your constituents. Here is a small sample of successful projects completed in your district this past year:

Improving tomato production

Scientists from the University of Georgia, University of Florida, Clemson University and North Carolina State University worked together over the last two decades to try to alleviate tomato spotted wilt virus.

The *RAMP (Risk Avoidance and Mitigation Program) Project* compiled data showing an estimated \$9 million loss in tomato and pepper crops between 1996 and 2006. Without resistant varieties, Georgia's tomato crop would have been wiped out.

Today, Georgia's vegetable industry, including the state's tomato and bell pepper fields, is worth \$781 million and accounts for about 10,200 jobs across the state, according to the most recent *Georgia Farm Gate Value Report*.

Researching alternatives to methyl bromide

Methyl bromide, the main way of managing many pests, including weeds, nematodes, soil-borne pathogens and insects in vegetable crops grown on plasticulture, was removed from the EPA's list of approved chemicals. It's essential that growers adopt alternatives immediately.

In 2002 UGA began an intensive research effort to discover and implement *alternatives to methyl bromide*. Two alternatives were used on 80 percent of the fumigated plasticulture acreage in Georgia during 2012. With the help of Extension delivery programs, adoption throughout the Southeast is occurring rapidly.

Using these alternatives produce crop yields similar to those with methyl bromide. However, input costs from the alternatives are at least \$250 per acre cheaper. These alternatives replaced methyl bromide on 12,000 acres of land with an economic impact exceeding \$3 million in Georgia during 2012.

Assisting with income tax planning

UGA Extension conducted community outreach tax credit training, and the Colquitt County Extension agent collaborated with local and state groups to implement a *bilingual VITA site* in Colquitt County. Community agencies that participated in the training helped with the tax credit outreach and VITA initiative.

Agencies made their low-income clients aware of the available tax credits and VITA site locations to have their tax returns prepared for free. VITA site volunteers completed 93 tax returns with refunds totaling \$158,825, without charge to low- and middle-income taxpayers.

Providing quality drinking water

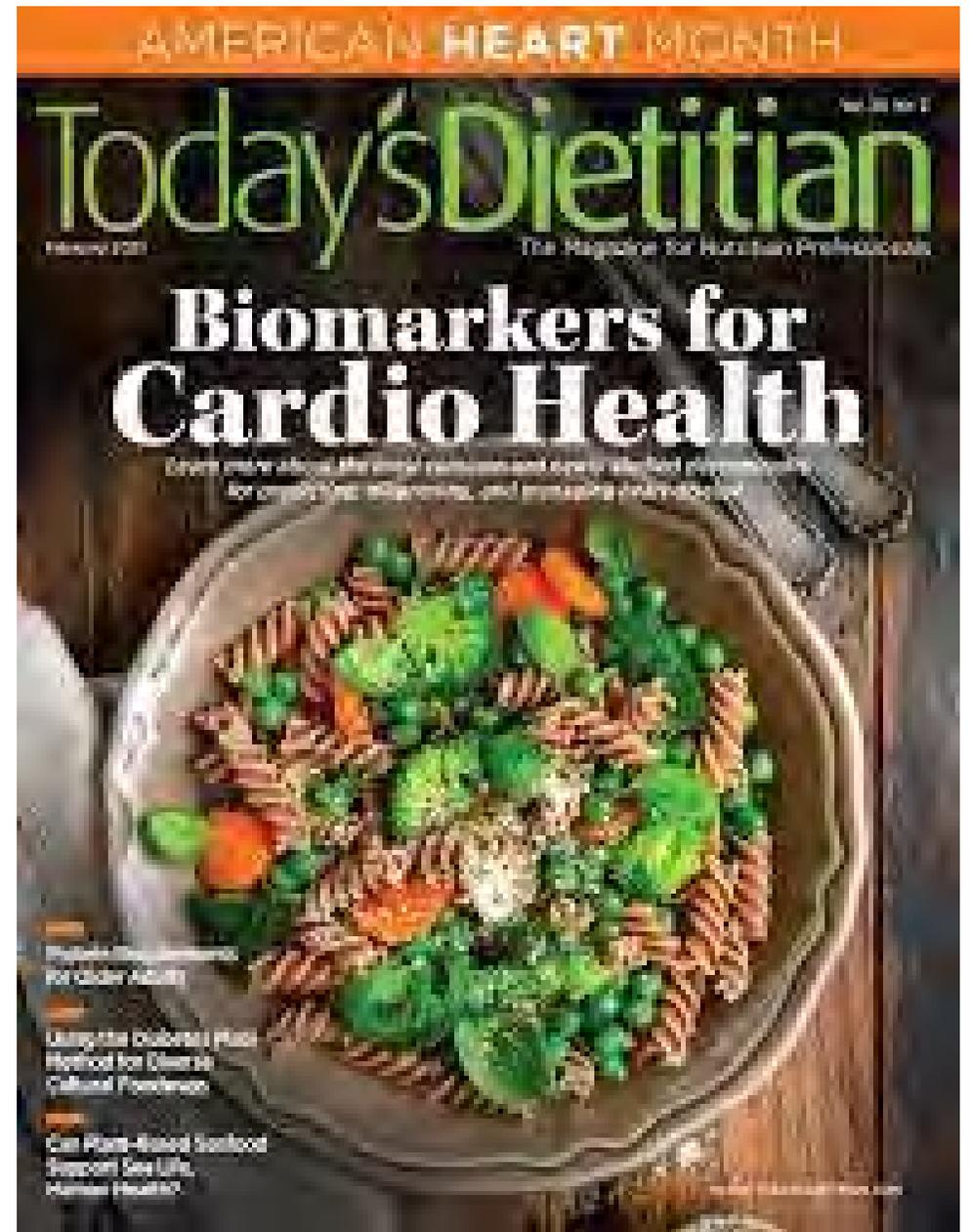
After a few resident well water samples from Monroe County and the surrounding area tested positive for uranium, local UGA Extension agents and state specialists offered educational programs to raise awareness of the issue and encourage more well water tests.

About *800 wells were tested for uranium*, with 39 wells testing positive for higher levels than recommended. Monroe County was awarded a \$500,000 Community Block Development Grant, which will enable the county to run water lines to areas that need access to uncontaminated water.

Developing youths through 4-H

Participation in the *Dodge County 4-H program* has steadily increased as the importance of the program is becoming more evident throughout the county. Since 2010, 4-H has been offered to every 5th grade through 8th grade student enrolled in the school system.

Membership in 4-H has shown an increase from just over 500 members in 2007, to more than 1,000 today. Members are more active in project achievement programs, which are proven to help increase writing and speaking ability and improve test scores. Students also learn about life skills through livestock projects, as participation has grown from just four students to 65. They are also learning gun safety lessons through the BB and shotgun safety and competition teams.



Drones aid in farm efficiency across Arkansas, U.S.

by Will Hehemann Special to The Commercial | August 22, 2022 at 3:17 a.m.



RESEARCH NEWS



12.9.2020

ISU STUDY INDICATES DIET MAY HELP REDUCE COGNITIVE DECLINE

There's Good News for Wine and Cheese Lovers

CATEGORIES

COMMUNITY ENGAGEMENT

EDUCATION EXPERIENCE

INNOVATIVE SOLUTIONS

KNOWLEDGE & DISCOVERY

RECOGNITIONS, AWARDS &
ACCOMPLISHMENTS

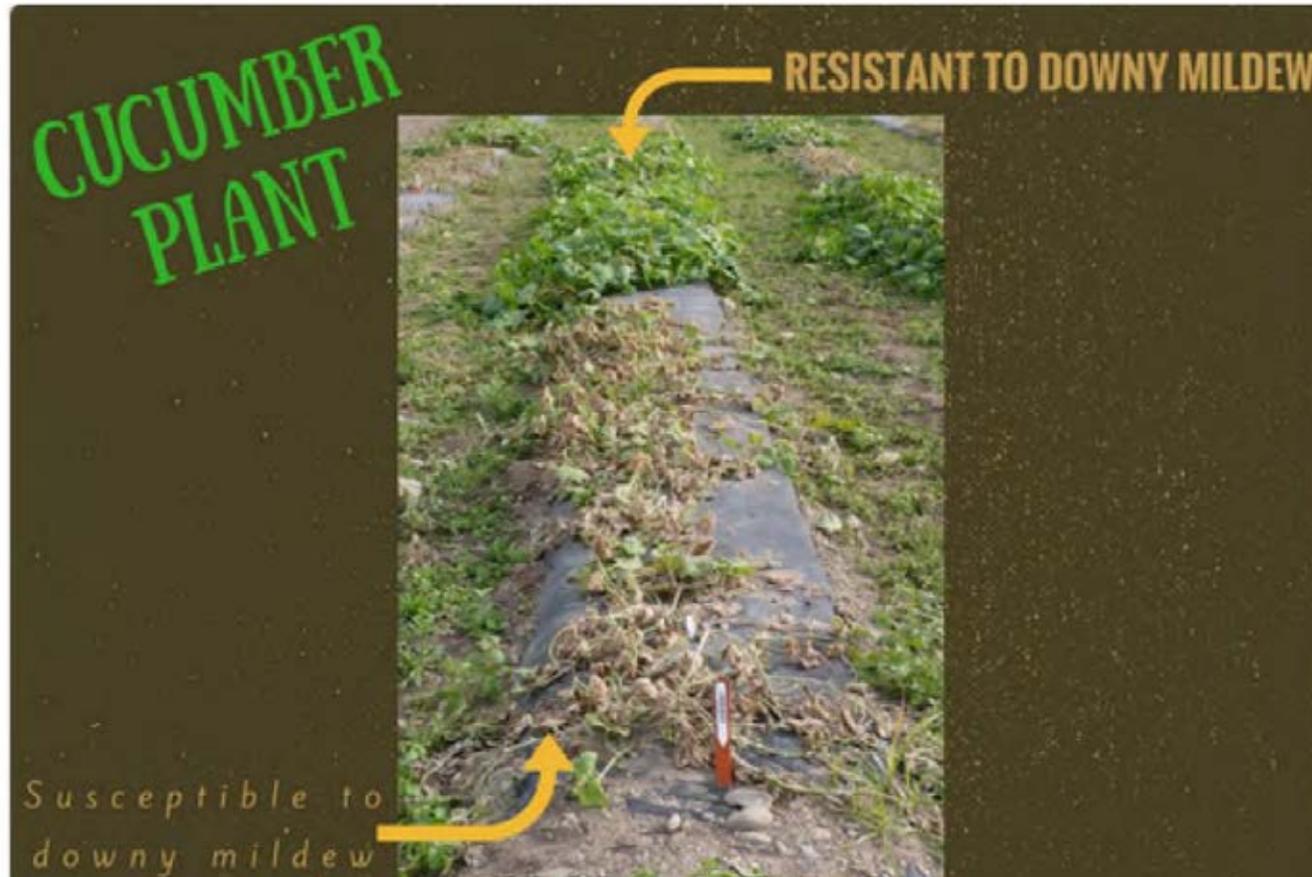


Multistate Research Fund Impacts Program @MRFImpacts · 9h



Downy mildew is a major problem for cucumber farmers, but treatment options can be too expensive for many. As part of a [@USDA_NIFA](#) project, [@UF/IFAS](#) and [@MSU_AgResearch](#) developed a new cucumber variety that is resistant to downy mildew. Farmers who adopted this new variety saw yields and revenues increase 20%. Learn more: bit.ly/cucumbers

[#NIFAimpacts cucumbers](#) [#NationalCucumberDay](#) [#NationalPickleDay](#)



 Parameters 

within the last... 

search... 

Institution based Filters

All Regions 

All States & Territories 

National (34)  

All Institution Types 

All Institutions 

 Search Impact Statements Searching Current Impact Statements publicly available in the system.

10 

 **A SUSTAINABLE TEXTILE INDUSTRY**

Energy & Bioproducts

 **Agricultural Safety and Health Research and Extension**

Youth, Family, & Communities

 **AUTOMATION FOR SPECIALTY CROPS (W-2009)**

Agricultural Systems

Using Drones in Agriculture and Natural Resources

In order to maximize resilience and productivity, researchers, farmers, and natural resource managers need to know how plants and animals—and landscapes as a whole—are affected by changing environmental conditions and other stressors. This knowledge enables farmers and natural resource managers to respond quickly to stressors with appropriate, targeted mitigation tactics. This knowledge also guides researchers as they breed tougher plants and animals and develop better management practices and tools.

Remote sensing with drones—unoccupied or unmanned aerial systems—offers a promising new way to characterize landscapes, individual plants and animals, and their various stressors; however, regulations, costs, limited research and education, and other barriers have kept drones from being widely used for agriculture and natural resources.

Since 2016, land-grant university researchers and educators have worked to increase adoption of drones for remote sensing and precise management of agriculture and natural resources.

Working together as a multistate project has many benefits.

Regular communication fosters creativity and productivity and primes the group to respond quickly to emerging issues.

With diverse expertise and members in multiple states, this team can test drones in a wide variety of real-world agriculture situations. In contrast, most prior research has focused on drone use in a single field or a specific crop or stressor. Coordination spreads the workload, reduces duplication, and lowers some costs. Sharing information, equipment, and other resources helps overcome the limited capacity of a single institution.

With members at many universities, the team can tackle the lack of education in the classroom and among other researchers and Extension agents.



What has this project accomplished so far?

Researchers are improving drone sensing and developing new drone-based systems.

This project continues to evaluate and identify the most reliable, cost-effective, and user-friendly drone platforms and sensors for monitoring and managing stressors in agriculture and natural resources.

To maximize the accuracy of the data collected, project members developed hardware, software, and detailed protocols for calibrating and using drones.

Researchers developed new drone-based strategies that can help:

- Scout pests and diseases in fruit, nut, and row crops and apply targeted treatment. These industries face major pest issues that are exacerbated by declining labor availability and increasing consumer demand for fewer chemical inputs. Drones can help overcome these challenges. *Clemson University, University of Georgia, Purdue University, Washington State University*
- Monitor plant water stress, helping farmers target irrigation. *Clemson University*
- Evaluate the responses of various genotypes to various stressors and identify plants for crop breeding programs. Drones are less labor-intensive, faster, and can screen more plants than manual screening and they are enabling new types of measurements and biological discoveries. *Montana State University, Texas A&M, Virginia Tech, Washington State University*
- Manage pastured livestock. Drones can detect stray herds, create 3D renderings of animals to calculate market value, and assess forage quality. *University of Kentucky, Mississippi State University*
- Monitor water quality on a large-scale. *Mississippi State University, North Carolina State University, Virginia Tech*
- Provide higher resolution data for flood risk models and water resource management. *Auburn University, Mississippi State University, North Carolina State University, Virginia Tech*

New tools help drone users manage the data they collect.

Drone sensing systems can generate a lot of data. Project members developed a user-friendly digital log book for drone operations. Multidisciplinary expertise helped ensure that the log book has the right features for a variety of users. *Purdue University*

Project members are sharing their knowledge about drones.

Over the past five years, project members have shared their knowledge in many ways, including:

- Fact sheets to help stakeholders understand the regulations and licensing required for drone use.
- Workshops on risk management for current and potential drone users. *University of Arkansas, Clemson University, Texas A&M*
- Trainings to help forest land managers use drones for less labor-intensive estimates of timber value. *Auburn University, University of Florida*
- Extension workshops, programs, and materials. *University of Arkansas, Clemson University, The Ohio State University, Purdue University, Washington State University*
- Digital resources like websites, videos, and datasets.
- 100 peer-reviewed publications, the most recent of which have already been cited 85 times.
- A book on drones for vegetation monitoring.
- Industry magazine articles that reached thousands of readers in multiple countries.
- Popular press articles.
- Regional, national, and international conferences.
- Technical sessions at meetings of professional associations, including the American Society of Agricultural and Biological Engineers.

What are the impacts?

This group's multistate, multidisciplinary research and outreach have helped overcome barriers and accelerate broader use of drones in agriculture and natural resources. By efficiently collecting large amounts of data, drones can help guide better decision making, greater advances in plant and animal breeding, and more profitable and sustainable management.

Drones developed for agriculture can also have impacts beyond the field. After a tornado destroyed a nearby Native American historical site, scientists at Stephen F. Austin State University in Texas used drone data to create 3D models of the site. These models will help tribe members reconstruct the site.

51069: Research and Extension for Unmanned Aircraft Systems (UAS) Applications in U.S. Agriculture and Natural Resources is supported in part by the Hatch Multistate Research Fund administered by USDA-NIFA and by grants to participating institutions: Auburn University, University of Arkansas, Arkansas Cooperative Extension, Clemson University, Cornell University, University of Florida, University of Georgia, University of Illinois, University of Kentucky, Louisiana State University, Mississippi State University, Montana State University, North Carolina State University, North Carolina Cooperative Extension, North Dakota Cooperative Extension, The Ohio State University, Purdue University, Rutgers University, Stephen F. Austin State University, University of Tennessee, Texas A&M AgLife Research, Virginia Polytechnic Institute and State University, Washington State University. In 2021, 51069 funding was renewed through 2026. [Learn more: bit.ly/51069](https://bit.ly/51069)

The Multistate Research Fund Impacts Program communicates the importance and value of Hatch Multistate research projects. [Learn more: mrfimpacts.org](https://www.mrfimpacts.org)





WHAT goes into
a good **IMPACT**
STATEMENT?





QUALITIES OF GOOD IMPACT STATEMENTS

- **Focused: meaningful; brief, but clear**

QUALITIES OF GOOD IMPACT STATEMENTS



It's just a mild hyperinsulism due to islet cell hyperplasia with a touch of hepatic insufficiency and glycogen depletion.

- Focused
- *Do not* use jargon

PASSIVE

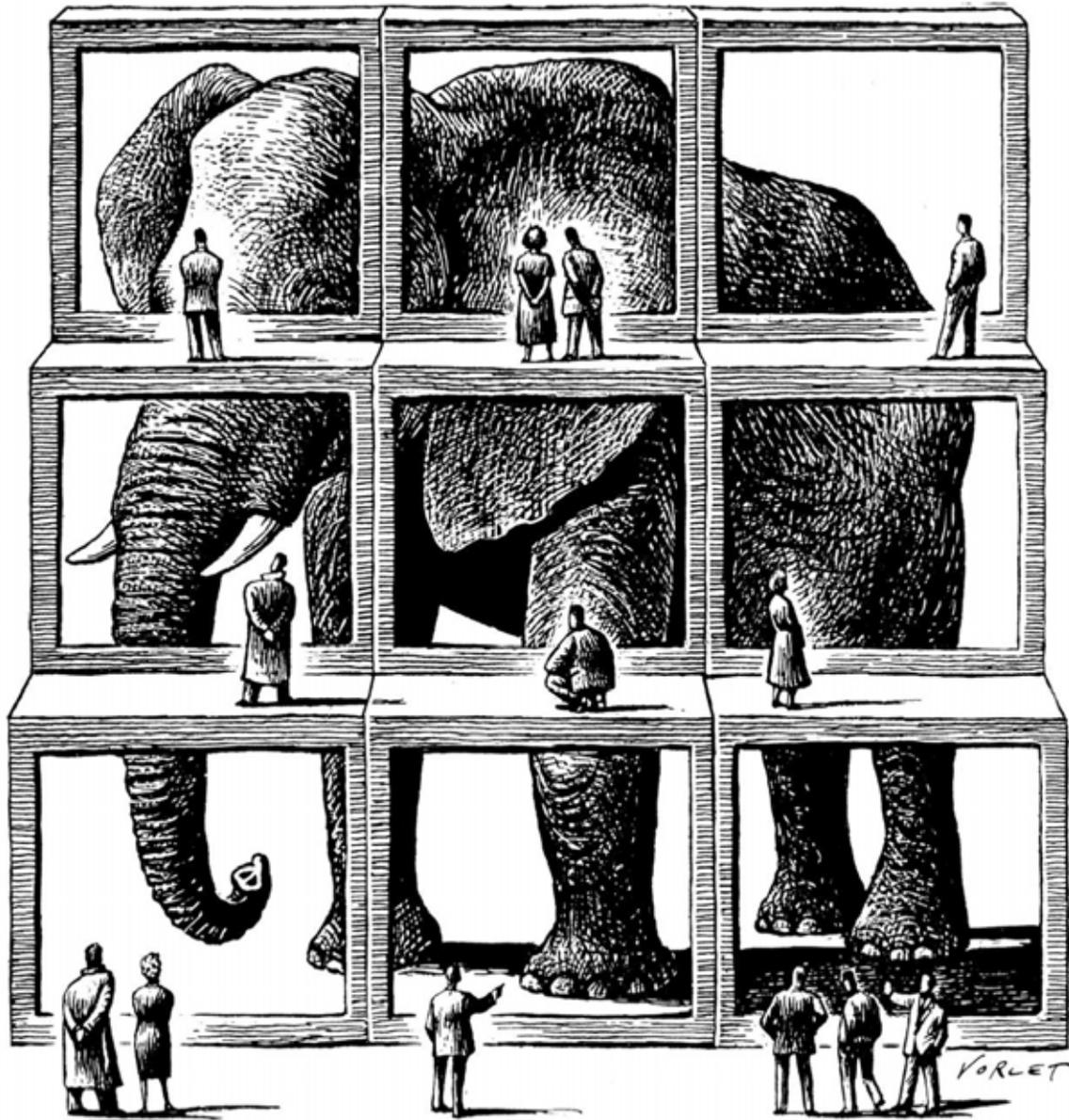
New tools	were developed by	scientists.
OBJECT	ACTION	SUBJECT

ACTIVE

Scientists	developed	new tools.
SUBJECT	ACTION	OBJECT

QUALITIES OF GOOD IMPACT STATEMENTS

- Focused
- Do *not* use jargon
- Use *active* voice



QUALITIES OF GOOD IMPACT STATEMENTS

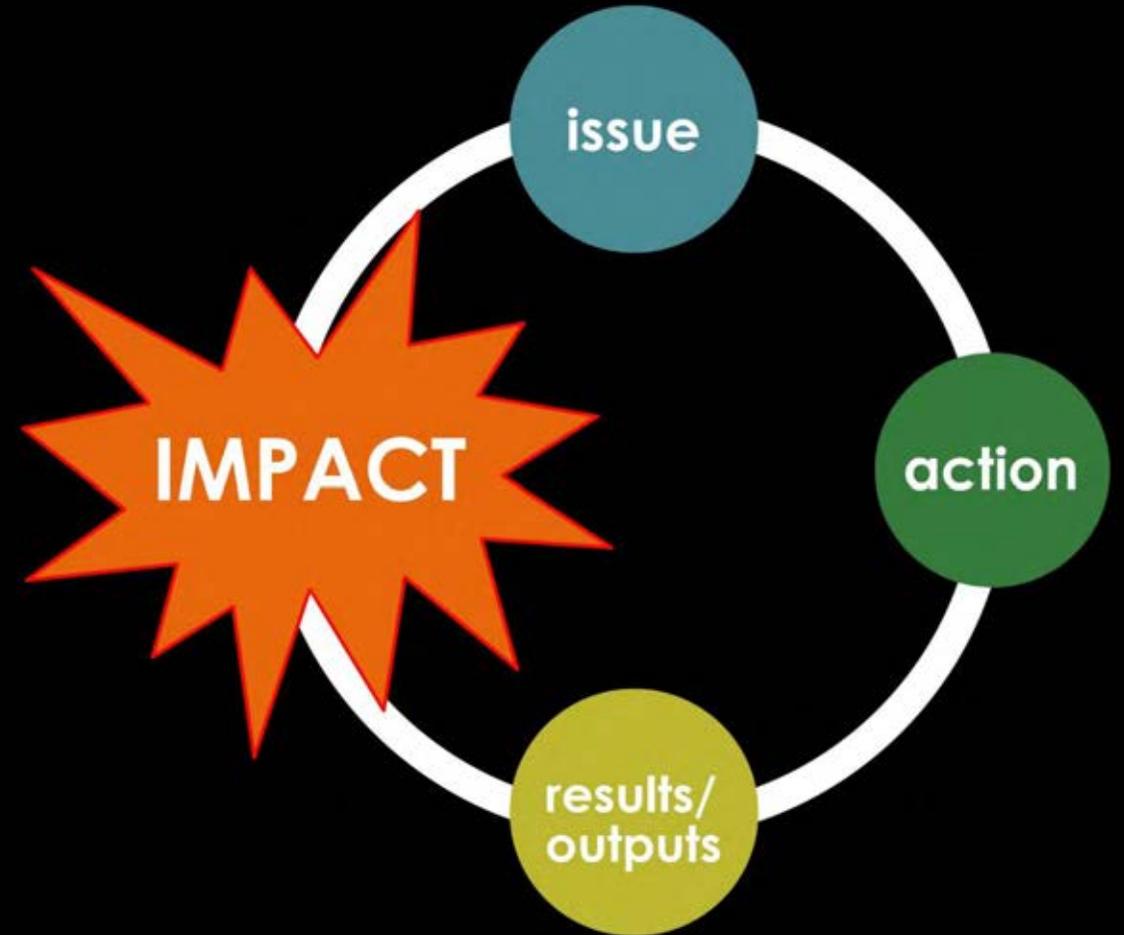
- Focused
- Don't use jargon
- Use active voice
- Provide context—
describe the *big picture*

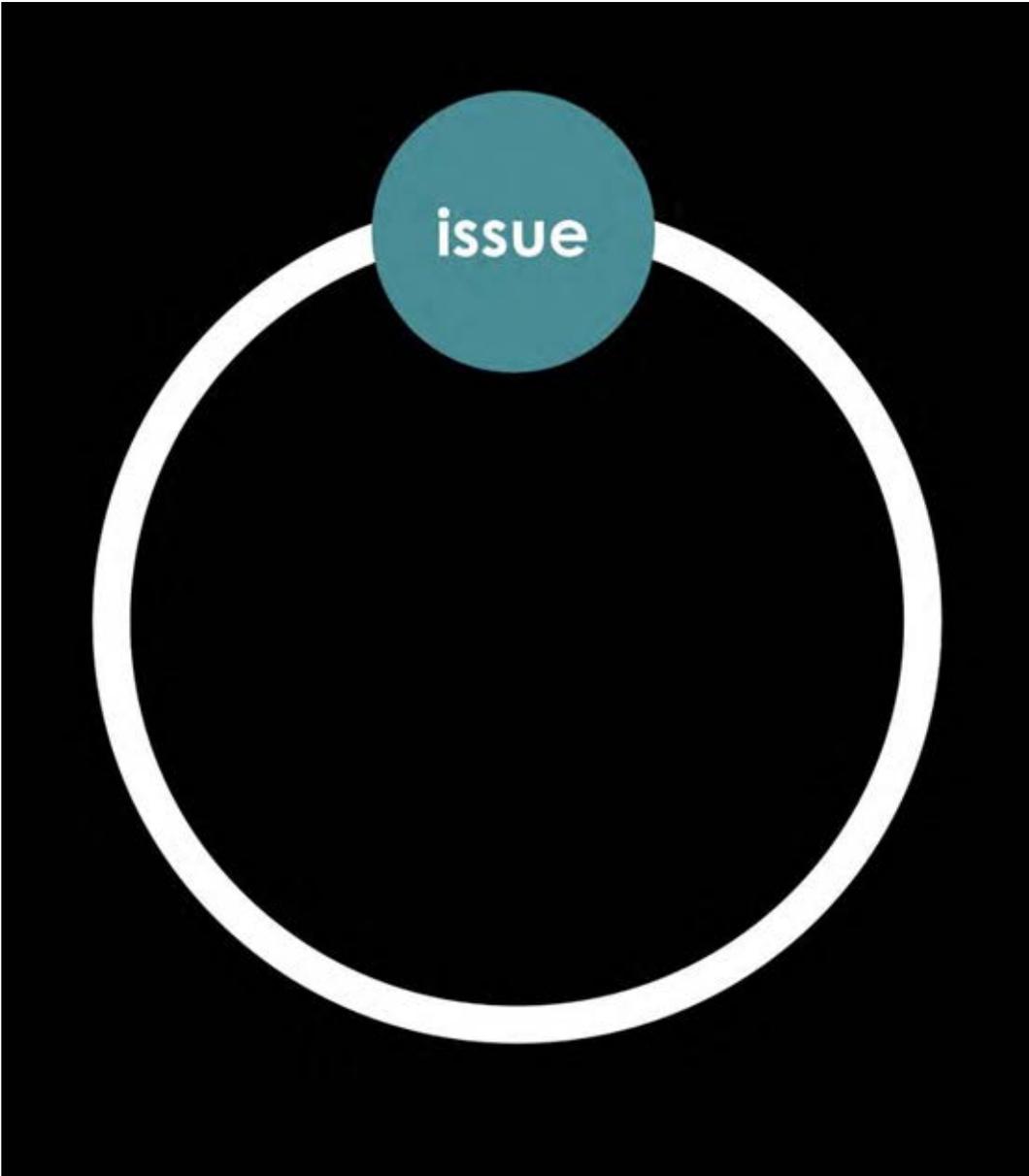
THE PARTS OF AN IMPACT STATEMENT

An impact statement is made up of four main components:

- Issue
- Action
- Results/Outputs
- Impacts

Terminology may vary





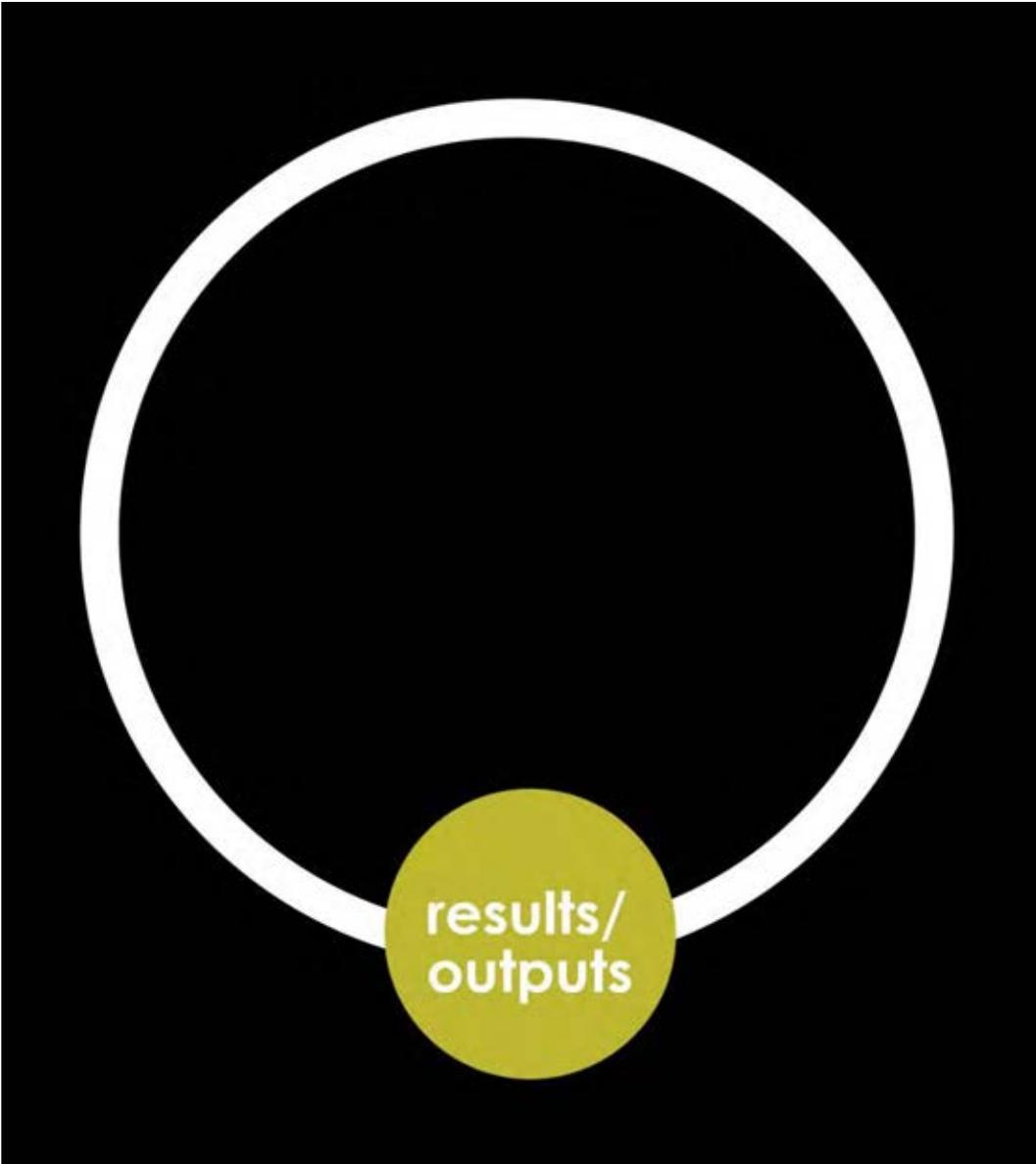
ISSUE

- What?
- Why?
- Who?

ACTION

- What was done?
- Who did the work?
- Who funded the work?





RESULTS/OUTPUTS

- *Major* findings...
- *Useful* products, tools, models, apps, workshops, publications, educational materials, etc...

...that led to change



IMPACTS

- What kind?
- Where?
- When?
- Who?
- How big/much?
- Public value



PUBLIC VALUE

- **Impact:** can be focused on program participants, individuals, study sites
- **Public value:** *general public, broader areas, entire communities, regional or national economies*

WHAT IF
we **DON'T** have
IMPACTS?



POTENTIAL IMPACTS

Think about *potential* impacts for:

- New projects
- “Basic” science
- Data-gathering or capacity-building programs
- Impacts that are hard to observe and measure







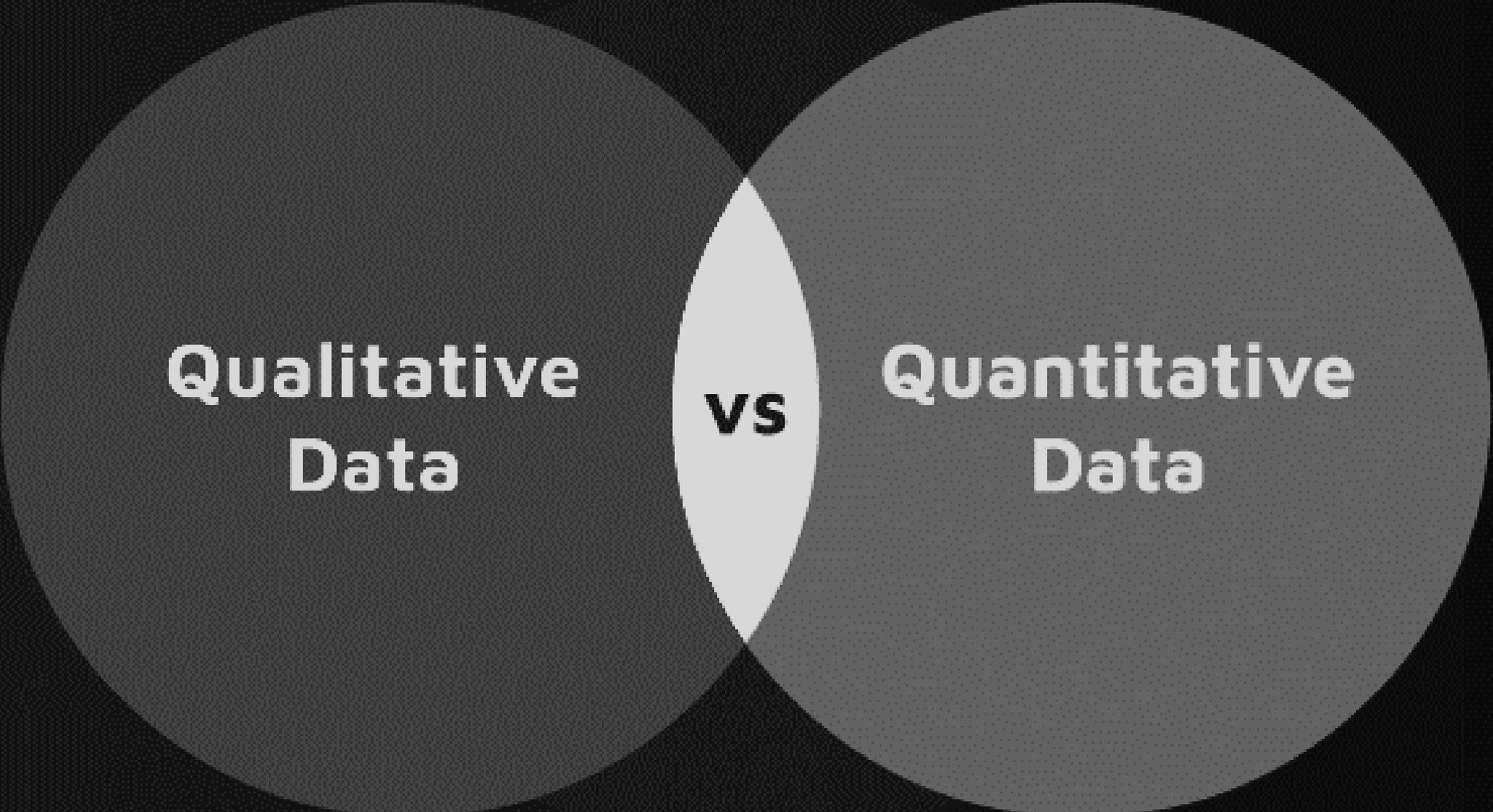


POTENTIAL IMPACTS

- Use clear language: *could*, *might*, *estimate*, *predicted*, *likely*; *if x then y*
- Show calculations







**Qualitative
Data**

A Venn diagram consisting of two overlapping circles. The left circle is a dark gray color and contains the text 'Qualitative Data'. The right circle is a lighter gray color and contains the text 'Quantitative Data'. The overlapping area in the center is white and contains the text 'vs'. The background is a dark gray with a fine, repeating pattern.

vs

**Quantitative
Data**

PLANNING TO REPORT IMPACT

- Indicators
- Keep track as you go
- Know how the reporting process works
- Work together



**KEEP
CALM
AND
PLAN
AHEAD**

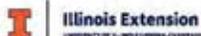
HOW TO
format **IMPACT**
STATEMENTS?







Impact Success Stories (covering 10/1/20-9/30/21) DUE BY NOV 30, 2021



General Information

Story Title _____

Program Area(s) / Team(s)

- 4-H Youth Development
- Administration
- ANR (use for AAB/NREE)
- Community and Economic Development
- Cook County Initiative
- Family Consumer Science
- EFNEP
- SNAP-Ed

Site or Organization _____

Unit / County _____

Program Activity

Link this Success Story to one of your Program Activities: _____

Action Plan

Link this Success Story to one of your Action Plans: _____

Keywords

Comments

Collaborators

User _____ ACCESS: View only View & edit

Was this user involved in performing the work described in this record?

User _____ ACCESS: View only View & edit

Was this user involved in performing the work described in this record?

User _____ ACCESS: View only View & edit

Was this user involved in performing the work described in this record?

Story

Story Narrative

Use the following template to organize your summary. This is the same format as we use to submit impact summaries to National Institute for Food and Agriculture (NIFA) in our annual report of accomplishments.

Situation: What is the issue or need? Why is it important to address the issue? Who cares and why? (1-2 paragraphs)

Response: What has been done in the form of outreach to address the issue or need? Summarize your programmatic response to the issue. Be sure to include the full array of outreach including direct education, indirect activities/channels, collaborative/partnership/coalitions, expert assistance, applied research (relevant to the issue), include who and how many were reached when possible. (1-2 paragraphs)

Results/Impact: How has your response affected the lives of stakeholders involved with this issue (e.g. private benefits)? That is, what outcomes were demonstrated in knowledge, attitudes, behavior, practices, policies, or environments? If possible, include both quantitative (numbers, %, etc.) and qualitative (comments, observations, etc.). What are the benefits or potential benefit to beyond those who participated (e.g. what are the public benefits)? (1-2 paragraphs)

External Collaborators: If relevant, list all non-Extension partners, organizations or community groups that contributed to the success/impacts of the outreach delivered. If a collaborator is affiliated with a U-UC campus department, please include the department affiliation.

Favorite Quote



Nutrition and Aging Resource Center

Grant Project Name

Ex: *The Iowa Café: AAA and Restaurant Partnerships* (DO NOT write just the Grant Project Name, instead include a catchy title of the project so readers know what the project was about)

Principle Investigator *(include credentials, title organization)*

Ex: *Alexandra Bauman, RD, LDN, Division Director of Nutrition and Wellness at the Iowa Department on Aging and Director at the National Resource Center on Nutrition & Aging*

Authors *(include credentials, titles and organizations)*

***Keep all fonts and size fonts the same as seen throughout the document**

Date of Report

Ex: July 15, 2022

ACL Disclaimer: "This project was supported, in part by grant number 90XXX###, from the Administration for Community Living, U.S. Department of Health and Human Services, Washington, D.C. 20201. Grantees undertaking projects with government sponsorship are encouraged to express freely their findings and conclusions. Points of view or opinions do not, therefore, necessarily represent official ACL policy."

FORMATTING IMPACT STATEMENTS

- 1 overarching statement vs. 2+ narrower statements
- Paragraphs or bullets?
- Headings, font formatting
- Visual aids
- Links, contact info



Environmental Stewardship

PHOTO: USDA

Taking Care of America's Forests

Forests are a critical part of life on Earth. They purify air, filter water, store carbon, provide food and shelter for a diverse array of plants and animals, and produce natural resources like timber, paper and medicine. Forests are also important places for recreation and cultural practices. But forests across the United States are under threat from pests, pathogens, deforestation, climate change, and other stressors. Land-grant university researchers and Extension educators are working to protect forests and the environmental, economic, and social benefits they provide.

Here are a few examples of that work:

- After the 2020 wildfires, many private forest owners in Oregon could not find seedlings or tree planters to reforest their property. Extension educators in **Oregon** have helped about 300 landowners, who need over 3.5 million trees, decide how to prepare their sites, select species and planting density, and plan for maintenance needs. They have also helped track down available seedlings and place orders.
- In Oregon, many landscapes benefit from occasional prescribed fires that reduce the amount of fuel that can feed devastating wildfires. To overcome resistance to and inadequate resources for prescribed burns, Extension educators in **Oregon** helped develop a training that gave forest owners and managers the knowledge and tools to implement prescribed burns and a support network to help carry them out. After the training, the number of planned prescribed burn acres had increased from only a few hundred acres to nearly 10,000 acres.
- Beech leaf disease eventually leads to tree death and should be managed as soon as possible, but infected plants are visually identical to uninfected plants in early stages. Researchers in **Ohio** developed a technique that uses near-infrared light, sensors and artificial intelligence models to determine which leaves are infected. This technology enables rapid response before outbreaks become severe and costly.

Continued

www.landgrantimpacts.org

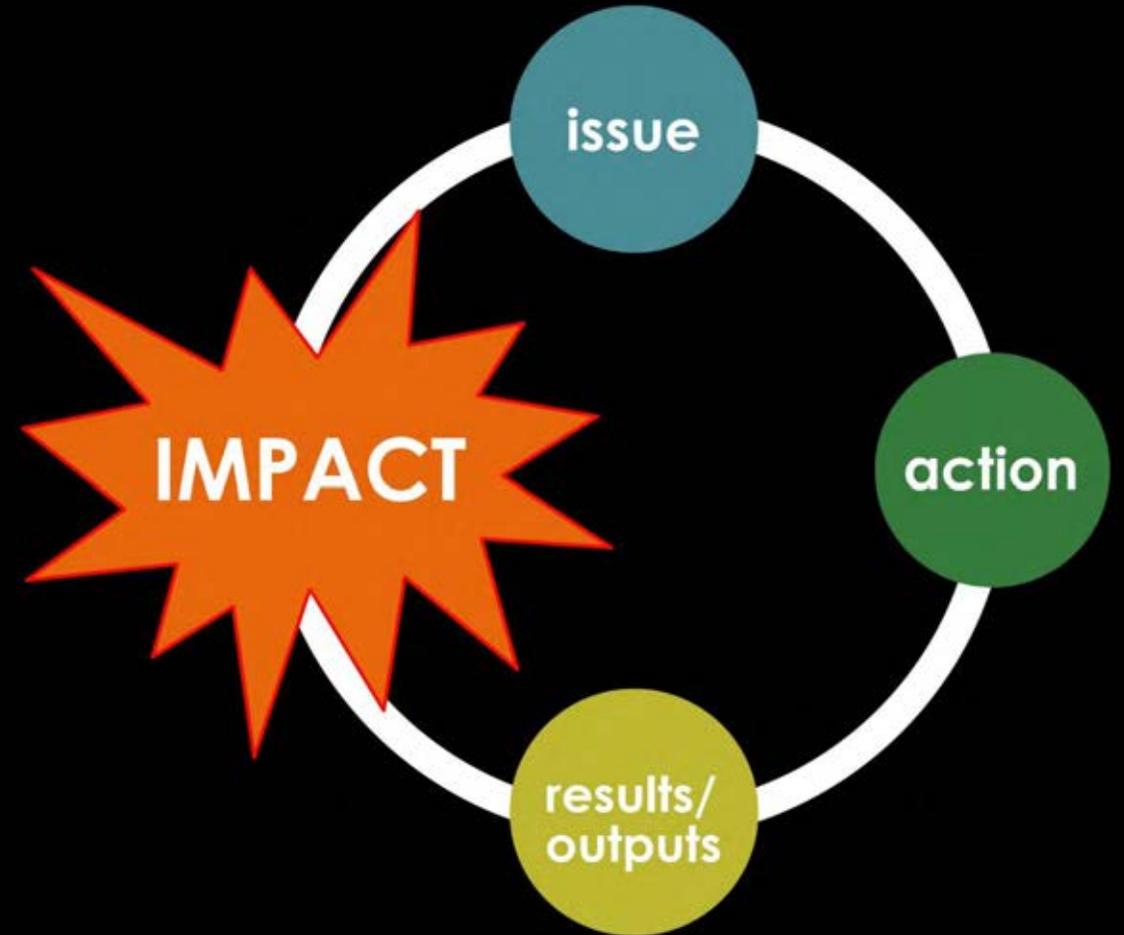
ABOUT LANDGRANTIMPACTS.ORG | The Land-grant University System is a uniquely American institution and has operated successfully for more than a century. The website documents the collective and individual impacts of the national system of joint teaching, research, and extension institutions.

Prepared by the National Impacts Database writing team, and supported by the Association of Public and Land-grant Universities' Board on Agriculture Assembly. Some projects funded by USDA/NIFA.

GETTING STARTED

- Outline: keywords, lists
- Connect the dots
- Modify for specific audiences/uses

Research and practice make perfect.



Regardless of style, impact statements should:

- Answer so what, who cares?
- Describe change in knowledge; behavior; condition
- Be concise, engaging, easy to understand
- Provide context to understand and remember





Are these
EXAMPLES
GOOD or **BAD**?



bit.ly/examplesworksheet

Basic Information

- **Project No. and Title:** W190: Water Conservation, Competition and Quality in Western Irrigated Agriculture
- **Period Covered:** 01/01/2002 to 12/01/2002
- **Date of Report:** 12/18/2002
- **Annual Meeting Dates:** 10/01/2002 to 10/05/2002

Participants

Schabbe, Glenn (schabbe@ers.usda.gov) Economic research Service, USDA, Taylor, R. (rtaylor@uidaho.edu) University of Idaho, Daugherty, Leftoy (ldaughter@nmsu.edu) New Mexico State University, Gopalakrishnan, Chennai (chennai@hawaii.edu) University of Hawaii at Manoa, Huffaker, Ray (rhuffaker@wsu.edu) Washington State University, Supalla, Raymond (rsupalla@unl.edu) University of Nebraska, Ward, Frank (ward@murphree.nmsu.edu) New Mexico State University, Golehon, Noel (ngolehon@ers.usda.gov), O'Neil, Michael (moneil@reeusda.gov) USDA-CSREES, Hunt, Fen (fhunt@reeusda.gov) USDA-CSREES, Cardon, Grant (grant.cardon@colostate.edu) Colorado State University, Frasier, Marshall (mfrasier@amar.colostate.edu) Colorado State University, Peterson, Jeffrey (jpeterson@ksu.edu) Kansas State University, Hurd, Brian (bhurd@nmsu.edu) New Mexico State University, Schuck, Eric (eschuck@amar.colostate.edu) Colorado State University, Adams, Rich (Richard.adams@orst.edu) Oregon State University, Gilley, James (jgilley@tamu.edu) Texas A&M University, Jakus, Paul (pjakus@econ.usu.edu) Utah State University, Klein, Kurt (kden@uleth.ca) University of Lethbridge © Canada

Brief Summary of Minutes of Annual Meeting

The meeting was called to order by Chairman Marshall Frasier. The meeting minutes from the previous meeting were approved. Chairman Frasier explained the meeting agenda.

The first item of business was agency reports. Mike O'Neil, CSREES National Program Director, gave a report on the CSREES National Program. He discussed the CSREES National Program's progress through the Committee for Shared Leadership in Water Quality and Conservation. He also discussed the new reporting requirements for the CSREES National Program and RMA-funded research addressing the economic impacts of water conservation.

Chennai Gopalakrishnan, University of Hawaii at Manoa, reported on the progress of the W-190 addressing institutional perspectives and innovations. He discussed a broader overview of the ERS/RMA research project and the progress of the research efforts for nine Cooperative Agreements between ERS and W-190 Cooperators on research project objectives.

The Thursday program consisted of three invited presentations, 190 State Reports, and a business meeting. Invited presentations included: Raymond J. Supalla, University of Nebraska, "Technology Adoption: When will it Conserve Water?"; Glenn Golehon, Colorado State University, "Integration of FRIIS and the 2003 ARMS Phase II Survey: A Burden"; and Richard Adams, Oregon State University, "The W-190 Review as a Critical Issue."

Accomplishments

Objective 1: Evaluate the farm-level economic and environmental impacts of alternative resource-conserving irrigation technology and water management systems.

Objective 3: Evaluate alternative institutions and policies for resolving competing agricultural and environmental water demands.

Washington and Idaho examined the nature of the conflict between irrigated agriculture and endangered species policy, potential conflict resolution alternatives, and the role of water conservation policy. Washington, working with a panel of national experts, also developed a Master's degree program in water resources management for the U.S. Army Corp of Engineers. Arizona examined the effectiveness of market transactions versus administrative or judicial water reallocations to address changing water demands in the West. Arizona has also examined the economic costs of inter-jurisdictional water disputes, and the role of economic incentives in conflict resolution. Nebraska, using bargaining models to examine potential solutions to Platte Basin water allocations between Colorado, Nebraska, and Wyoming, found that equity in policy implementation, that is, who pays, to be the primary institutional policy concern rather than the resource reallocation policy itself. ERS research, in addressing transboundary water issues between the U.S. and Mexico, examined impediments to border infrastructure development. Study results demonstrate how institutional rules and power relationships are critical considerations in evaluating border water negotiations. Finally, a major W-190 accomplishment (lead by Chennai Gopalakrishnan, Univ. of Hawaii at Manoa) was the completion of the Special Issue (March 2003) of the International Journal of Water Resources Development. This second Special Issue will showcase W-190 research contributions addressing institutional innovations in western water management.

Impacts

1. Using field days and workshops, including the Four Corners Irrigation Workshop, Colorado successfully brought together local, state, and federal agency personnel, Native American representatives, water district managers, academicians, and irrigators from across the four States, broadening awareness and understanding of system-wide irrigation efficiency issues associated with the Dolores Irrigation Project.
2. In Kansas, results from irrigation technology/income-risk research were used to show producers how irrigation investments can be used to limit production risk.
3. In Nebraska, Natural Resource Districts are using research results identifying the annualized costs of groundwater quality improvements as they revise groundwater management plans.
4. Oregon (Rich Adams), represented on the National Research Council committee on the Status of Endangered Fishes of the Klamath Basin, helped to frame the resource questions in the Basin and in developing long-term water-management options. The NRC interim report (National Academy Press, 2000) is cited by agencies as the basis for current operating plans.
5. ERS research integrating results on irrigation technology transitions across the Pacific Northwest and the Mid-plains States, demonstrates the importance of recognizing a broad, social/institutional perspective when evaluating onfarm water conservation policy options.
6. Research results recognizing the cumulative effects of alternative mechanisms to obtain water for instream flows helped to create the Conservation Reserve Enhancement Program (CREP) in Oregon, which has been instrumental in formulating a national program by the USDA.
7. Washington water-management expertise helped to develop a Master's degree program in water resources management for the U.S. Army Corp of Engineers.
8. Nebraska's analysis of institutional reallocation of Platte Basin water resources, using bargaining models, has helped state, federal, and private stakeholders recognize the role of technical beliefs versus values in explaining differences in policy preferences and ultimately in contributing to conflict resolution options.
9. The Special Issue of the IJWRD, featuring W-190 refereed papers addressing institutional innovations in western water management, contributes enormously to the policy-relevant professional credibility of W-190 research accomplishments.

Impacts:

- Scientists conducted a series of human subject tests and focus group interviews (4 males (age: 38.8 ±5.4 years; work experience 14.5 ±1.1years, 23.9 BMI) and 4 females (age: 44 ±5.6 years; work experience 24.3±4.0 years, 33 BMI)) to identify major issues related to wearing protective clothing. Future study will illustrate how gender-specific design needs vary depending on work environment.



bit.ly/examplesworksheet



USDA NIFA and others want to know if the nutrition interventions they support are actually leading to healthier diets and if they're getting for their buck. But assessing what foods people eat has been difficult because people have a hard time remembering and accurately reporting what they eat. Nutrition and biomedical informatics researchers at the University of Utah addressed this problem by developing a new tool that doesn't rely on people reporting what they eat. Instead, the new tool scans the barcodes of foods families purchase at stores and scores the healthiness of the foods. In a national sample of over 4,000 households, the new tool performed more accurately than conventional diet assessment tools and was easier to use. In the future, nutrition programs can use this tool to track their success.



2022 IMPACTS

EXPANDED FOOD AND NUTRITION
EDUCATION PROGRAM (EFNEP)

IMPROVING NUTRITIONAL SECURITY THROUGH EDUCATION

In 2022, youth participation in EFNEP increased. Consistently, over half of EFNEP participants in FY2022 are people of color and/or Hispanic ethnicity. In 2022, NIFA provided \$69.4 million for Land-grant University Cooperative Extension partners to conduct EFNEP in all 50 states, six U.S. territories, and the District of Columbia. EFNEP employed 1,285 educators who worked directly with 187,663 youths, providing tailored lessons on diet quality, food resource management, food safety, and food security.



2022 IMPACTS

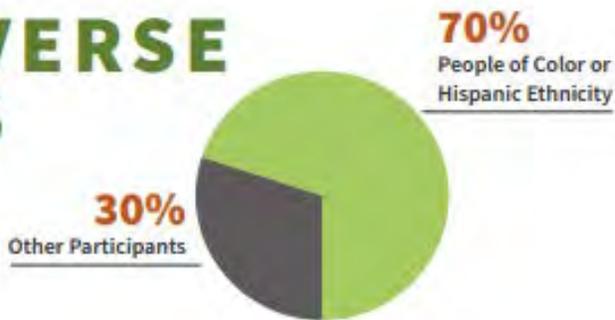
EXPANDED FOOD AND NUTRITION
EDUCATION PROGRAM (EFNEP)

IMPROVING NUTRITIONAL SECURITY THROUGH EDUCATION

EFNEP instructors led a six-week course to teach 600 high school students in West Virginia about nutrition, meal planning, cooking skills, and food safety. 75 percent of students showed improved knowledge and skills. One year after the course ended, the mother of one of the students reported that her son now helps plan grocery lists and cook meals at home instead of eating fast food and has a job in the food industry training to be a chef. Over the past year, the family has saved money on food expenses, strengthened their family relationship, and had better health reports at their health check-ups. “I never dreamed how a simple class could change my family’s daily life and future so much and help my wallet at the same time,” she said.

REACHING DIVERSE POPULATIONS

The majority of EFNEP adults are from historically underserved populations. An increasing trend is programming to refugee and immigrant populations.



SAVING MONEY

EFNEP graduates reported a collective food cost savings of

\$558,446.34

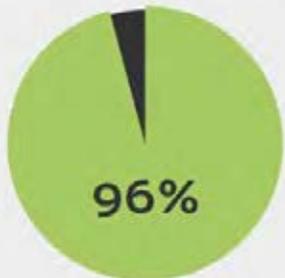
IMPROVING DIETS



94% OF ADULTS

improved their diet, including consuming additional fruits and vegetables.

CHANGING ADULT BEHAVIOR



Percentage of adults improving diet quality practices

INFLUENCING YOUTHS



Percentage of youths increasing knowledge or ability to choose healthy foods

SHARED STORIES >>>>>>

San Juan, Puerto Rico, has a 40% poverty rate. One mother who was on food assistance, enrolled in EFNEP virtually to learn to basic food skills. She had no knowledge of food safety practices, reading nutrition labels or planning meals for her family. She participated in EFNEP through videoconferencing. She also received motivational text messages. Upon completing the program, she said, "I learned to read the nutritional labels and to make a shopping list before going to the supermarket to save on purchases. I learned how to prepare many delicious recipes for my family. I also do the physical activity routine that I learned and have lost 15 pounds."

UNIVERSITY OF PUERTO RICO

A mother of two in Colorado struggled to incorporate vegetables into family meals. Her kids and husband didn't eat the vegetables she served. To save on food costs and minimize food waste, she stopped serving vegetables. Through EFNEP classes she learned to be creative. She included vegetables as part of dishes the family already enjoyed eating and was able to improve their diets.

COLORADO STATE UNIVERSITY

In collaboration with a high school that received Farm to School funding, Oregon EFNEP educators conducted a series of cooking classes. Students tried new foods and were excited to share the recipes with other classmates and family members. One student was surprised to find a dessert recipe that also included a vegetable: "I never thought of doing that, and I didn't think I liked squash at all."

OREGON STATE UNIVERSITY

For more information, visit NIFA.USDA.GOV/EFNEP or contact helen.chipman@usda.gov or carinthia.cherry@usda.gov.

The specialty crop industry faces serious pest/disease issues, labor shortages, and growing demand. Automated, mechanical devices can help address these issues, but crops like fruits and nuts require unique technologies. Many institutions do not have the resources to create these technologies alone. Working together, researchers at land-grant universities have developed automated devices that help:

IMPROVE CROP YIELD/QUALITY & MEET DEMAND:

- A harvest-assist device designed by Penn State scientists increases the number of apples harvested per second by 50%.
- University of California developed an affordable automated system that identifies mature tomatoes during processing, ensuring products have good flavor and lycopene.
- Farmers said a new mechanized pruning method recommended by Penn State increased yields by 40% for an additional \$400 per acre.

REDUCE WORKER INJURIES:

- 60% of the tomato processing industry has adopted machines designed by University of California to inspect tomato juice. During a single season, the machines eliminate more than 200,000 repetitive motion hazards for workers.
- Penn State researchers designed a harvest-assist device that eliminated ladder falls and reduced the time apple pickers spent in awkward, dangerous postures by 50%.

CONSERVE RESOURCES:

- Using automated dehumidifiers developed by the University of Hawaii, coffee and chocolate growers use less energy to dry product.



Farming is a hazardous occupation, but mechanization can prevent many manual labor injuries. Machines designed by [@ucdavisCAES](#) to inspect tomato juice eliminate ~200,000 repetitive motion injuries each year. 60% of the industry has adopted these machines.

Learn more: <http://bit.ly/MRF-Automation>

[#FarmSafety](#) [#NFSHW](#) [#necasag](#)



THIS USDA GRANT IS ABOUT MORE THAN JUST EATING FRUITS & VEGGIES.

WE ARE CREATING A HEALTHIER WORLD.

Young adulthood often involves big changes in living and social situations and declines in healthy behaviors. For example, many young adults live on college campuses, where there may be limited access to healthy foods and physical activity as well as high stress and peer pressure. Researchers at West Virginia University, the University of Tennessee, and Kansas State University developed the “Get FRUVED” program to help campuses support healthy habits among their students. The program starts with an assessment that measures campus food access and availability in vending machines, convenience stores, dining halls, and restaurants; walkability; bike-ability; recreation facilities and programs; and health-related policies. Then, researchers offer specific suggestions for campus improvements and provide online programming that teaches students about healthy habits for nutrition, physical activity, sleep, and stress management. So far, 90 college campuses have used the Get FRUVED program to identify campus needs and make changes that promote health. Get FRUVED led to increased fruit and vegetable intake among student participants as well as decreased waist circumference, systolic blood pressure, blood cholesterol, and body mass index. These kinds of reductions during young adulthood can significantly reduce the likelihood of chronic disease development over a lifetime. Learn more about the Get FRUVED program: bit.ly/HealthyYoungAdults

Nitrate is a key ingredient in fertilizers used by farmers, but without proper interventions, excess nitrate often drains off farmland and pollutes bodies of water. In the Midwest, excess nitrate often ends up in the Mississippi River and makes its way to the Gulf of Mexico, where it creates a “dead zone” and impairs fisheries. But thanks to a project funded by the USDA, over 300,000 pounds of nitrate have been kept out of the Gulf of Mexico since 2017. As part of this project, land-grant universities in 12 states along the Mississippi River have worked together to address drainage issues in a variety of complimentary ways. For example, University of Illinois scientists designed bioreactors that can be installed on farmland and filter 90% of nitrate from drainage water; Mississippi State University Extension developed an app that 32 farmers have used so far to fine tune bioreactor placement. Scientists at the University of Tennessee identified cover crops that reduce nitrate runoff by 40%. Altogether, these drainage improvements have contributed to the lower-than-average nitrate loads in the Gulf of Mexico in recent years and healthier fisheries.

Project funding: Hatch Multistate/USDA NIFA, 2015-2020

States involved: AR, IA, IL, IN, LA, KY, MN, MO, MS, OH, TN, WI

Learn more: bit.ly/drainage



QUESTIONS or
COMMENTS?



Want to **LEARN**
MORE and **STAY**
IN TOUCH?

