

# Idaho (University of Idaho) Annual Report - FY2021

## Report Status: Approved as of 06/27/2022

### Contributing Organizations

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University of Idaho

### Executive Summary

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#### Overview

#### State conditions giving rise to our critical issues:

According to the 2020 Census, Idaho's population has grown at the second highest rate in the nation at 17.3%. Urban areas are growing, but Idaho's rural communities still have small, isolated populations with limited resources.

As of 2020, Idaho has a 11% poverty rate, and 18 of 44 counties' populations have 10% or more people with limited access to healthy foods. There is a 21.8% rate of child food insecurity, and the obesity rate for Idaho youth ages 10 to 17 years is over 1 in 10.

Industries playing major economic roles include lumber, food-production manufacturing, high-tech manufacturing, mining, and agriculture (wheat, cattle). Food-production employment is expected to grow 15.9% in next 10 years.

The average market value per farm of all agricultural products sold is increasing, with a 14% increase from 2007 to 2017. In 2018, Idaho had 7,331,473 acres in farmland, 3,393,063 of which were irrigated. However, water availability is decreasing, and uncertainty about water resources is increasing.

#### Highlighted programs addressing critical issues:

- Eight Idaho dairies participating in on-farm research in liquid-manure solids and nutrient separation have saved at least \$100,000 each from installing centrifuges. These eight running centrifuges processed several million gallons of liquid dairy manure and separated over hundreds of gallons of solids and nutrients out of manure streams, saving hundreds of thousands of dollars on cleaning manure lagoons.
- 84 producers and consumers participated in the Palouse-Clearwater Food Summit. 25 respondents (n=28) indicated intent to be active in a food coalition or network in their region, 27 participants reported increase of knowledge of ways the pandemic impacted our food system, and 27 reported an increase in knowledge of action we need to take in the next eight months.
- Over 1200 participants accessed course materials 63,316 times for the Idaho Victory Garden Online Public Access Course, potentially reducing their fresh fruit/vegetable budget for the year by average of \$400 per household.
- 4-H Healthy Habits in partnership with Eat Smart Idaho offered six to eight nutrition-education sessions to 1729 limited-resource youth from grades 1-12. 95% of survey respondents (n=1404) indicated intent to increase recommended fruits and vegetables each day, as well 85% indicating intent to drink less sugary drinks. 97% of respondents intend to drink the recommended amount of water and 96% indicated intent to stay physically active every day.
- Over 643 family-forest owners and employees participated in our forest-management programs. 299 participants adopted monitoring techniques for forest insects, disease, or animal damage issues. 77 survey respondents reported intention to contact a forester, and 41 respondents reported intention to attend additional forestry education programs for updated information.
- By participating in Idaho's Pesticide Safety Education Program Recertification webinars, 2438 participants earned pesticide recertification CEU credits issued by the ISDA. Based on our post-webinar survey, 82% (n=1999) of participants stated the online format saved them substantial time and financial resources.

- Eat Smart Idaho partnered with 53 k-12 schools, 11 daycares and 56 food pantries, as well as held 36 food drives in the 2021 reporting year, reaching 6733 direct participants. Long Live Idaho Campaign reached 18,342 people through printed and electronic materials. 95% adult participants reported improvement in one or more of diet-quality indicators and 88% improved food resource-management practices.

- 200 participants in the Canyon County Diabetes Prevention program lost an average of 6.5% of their body weight. Participants estimated a health-care savings per years of \$278 which totals to \$166,800 in overall estimated health-care savings for the three-year program.

- 1,819 participants from 30 states completed the Idaho 4-H Shooting Sports online training modules. Participation reduced the cost of additional meals and lodging for at least 75% of prospective instructors (n=1364) who have attended Level-1 training sessions (versus their counterparts prior to the initiation of these models). The estimated cost savings per person is \$90, which is a projected overall cost savings of \$122,760.

#### **Performance metrics for research:**

- Obtained \$36 million in extramural funding including an NSF CAREER award and NSF MidScale RI-1 for a Deep Soil Ecotron facility
- Awarded 5 PVP
- Increased number of graduate students 10%
- Faculty produced over 200 refereed journal articles and peer reviewed manuscripts

#### **Critical Issue: 4-H Community Youth Development**

#### **Progress by program/project and *topics of focus identified by Critical Issue group (PET)***

##### *Reaching Underserved Audiences*

- Juntos Family Engagement Workshop: making education a family goal
- School Science Fair: Job skills, education requirements and position options for various career fields including science
- Outreach to Military Youth Program: Resources for military children/families through service/deployment
- 4-H Circuitry Outreach Program: STEM programming with community partners
- Spark Your Imagination with Edison – Outreach: Individual equipment for youth during the pandemic
- Tribal Youth in Ag. Programming: Food production skills for better eating choices and understanding agricultural value

##### *Healthy Living*

- Teen Health Advocates: Teaching younger children about nutrition, sharing health strategies with families and influencing community actions
- 4-H Create Art Now Pilot: Self-expression; express thoughts and emotions through creating artworks and learning critical thinking skills
- 4-H Healthy Habits in partnership with Eat Smart Idaho: Youth-obesity-rate nutrition-education
- Cooking Under Pressure for Youth: Cook meals, follow a recipe, use new kitchen appliances
- Satisfy Your Sweet Tooth: Science and chemistry terms while cooking

##### *4-H Science (including Animal Science)*

- Animal Science: Requirements completed for livestock projects
- Teaching Livestock Evaluation: Livestock evaluation given by teachers
- Idaho 4-H Rangeland Skill-a-thon Online Workshops: Knowledge and understanding of Idaho rangelands
- State 4-H Livestock Skill-a-thon: Hands-on animal science learning experiences
- Idaho's Think Make Create Labs: A Low-Tech Mobile Makerspace Program: access to STEM, program support and professional development for volunteers/educators
- Bonneville County Livestock Judging Clinic: Livestock evaluation and selection.
- Caribou County Beef Cattle Judging: Experiential learning with knowledgeable instructors

- AmeriCorps Donnelly Afterschool Program: Safe place to provide childcare in afternoons
- 4-H Shooting Sports Online LMS modules: Multi-state, training requirements for shooting sports

### *Civil Engagement and Youth Leadership*

- 4-H Adventure Camp: Outdoor education to mitigate negative physical and mental health problems in youth, and increase focus, build self-confidence, and retain knowledge
- Benewah 4-H Fun Fridays: Learning loss, social, emotional wellness and positive peer-to-peer interactions outside of the classroom
- 4-H STEAM Programs: Childcare, reaching underserved audiences, and expanding 4-H youth development STEAM programming by partnering with community organizations
- Leadership NOW! Advanced Leadership Program: Intentional leadership development and education

### *Adult Leadership and Volunteer Development*

- Mental Health First Aid: Training to recognize and assist a person experiencing a mental health crisis
- Structure of Idaho 4-H and Delivery Methods: Engaging workshops for teens
- 4-H Child Protection: Training camp counselors in a manner to keep all youth safe

### **Critical Issue: Community Development**

#### **Progress by program/project and *topics of focus identified by Critical Issue group (PET)***

##### *Develop and strengthen human, social, and cultural wealth*

- Diversity Learning Circle: Diversity inclusion training; civil dialogue practice
- Ripple mapping for Valley County Opioid Recovery project collation: Data captured aids progress for grant goals
- Alternative Activities for Teens: Alternative activities to positively interact with peers instead of choosing to use drugs and alcohol

##### *Develop and strengthen individuals and community financial resources*

- Peer Learning Network: Increased relationships with community leaders
- Inland Northwest Artisan Grains Podcast: Producing higher-value crops; market options with a greater financial return on their investments than commodity markets
- Palouse-Clearwater Food Summit: Feeding Our Community in Challenging Times: understanding impacts of COVID-19 on the regional food system, increased emergency food services, opportunities to expand farm direct and intermediated marketing, and resources for mitigating economic impacts

##### *Develop and strengthen spaces and places*

- WCM Trails coalition: Upkeep of trails, map and web presence
- Teton Food and Farm Coalition: Networking for organizations/individuals interested in strengthening the Teton area food system

### **Critical Issue: Food Production Systems**

#### **Progress by program/project and *topics of focus identified by Critical Issue group (PET)***

##### *Cereals*

- Cereal schools: Profitable, environmentally sound farm practices which incorporated advanced technology tools in daily operations; increased efficiency, less harm to environment, reduced food contamination, reduction of the need for water and chemicals for crops, and increased profits

##### *Pest management*

- PNW Pest alert: Real-time information on pest outbreaks with control measure information
- Potato Conference: English and Spanish sessions; volunteer potato control in rotation crops including yield losses, perpetuation of diseases and viruses, interference in harvest
- Pesticide Safety Education--Recertification Program: State licensing-requirement fulfillment

- Pesticide Applicator Recordkeeping Project: Record pesticide applications for short-term/long-term planning; following federal WPS
- Statewide Pesticide Safety Education Program Recertification Webinars: Credits to maintain *licenses*

#### *Livestock efficiency*

- Idaho Young Cattle Producer Conference: Young cattle producers management, marketing, financing, and overview of cattle industry in Idaho
- Livestock Grazing Management: Proper grazing-management benefits to produce animal and pasture productivity
- Bull Evaluation and Selection (Bull Grading): Stringent, consistent bull evaluation and selection program to maintain and improve overall cattle quality in individually owned herds running in common during the breeding season; genetic tools improve marketability of cattle
- Ladies raising livestock: Livestock education for women at a time and place that accommodated their needs and circumstances

#### *Forage crop systems*

- Development of economic threshold for thrips: Thrips population dynamics as well as feeding effects on alfalfa crops; determining correct timing of thrips control measures; reduce input costs and achieve higher return on investments.
- Online Forage School: Current updates on alfalfa research throughout state

#### *Rangeland management*

- Idaho Range Livestock Symposium: Current issues and trends

#### *Crops/livestock quality assurance*

- BQA Smoking & Grilling Foods: Understanding meat science and the factors that affect eating quality of meat and meat products
- Quality Potato Research and Education: Tools to lessen Idaho potatoes rejection; mitigating risk; delivered in multiple presentations, newsletters, website postings, a bulletin, publications, videos in both Spanish and English on harvester and handling operations, and equipment stickers in English and Spanish

#### *Other Unplanned*

- Tractor safety: Bilingual trainings for dairy in farm and tractor safety to reduce the incidence of accidents and fatalities in agriculture

#### *Food Safety*

- Idaho Food Safety Cooperative Food Business Entrepreneurs: Training business compliance with FDA's Food Modernization Act
- Parma Cocoon Testing Laboratory: Quality assessments of pollinator health to manage the longevity of high-quality alfalfa crop yields; producers can assess the need to purchase more bees to adequately pollinate their seed crop from the information gained from these analyses
- Customized Fresh Pak Potato HACCP Course online: Customized content to specific industries, made required food-safety plans

#### *Alternative/specialty crops*

- Idaho Hop Growers Commission 2021 Variety Plot: New hop lines for additional resource to PNW hop growers to meet the needs and everchanging demands of brewers

#### *Estate planning*

- Succession/Estate Planning 6-week Zoom: Estate planning to transition to the next generation of farmers

#### *Germplasm*

- Artificial Insemination Training: AI utilization improves herd genetics and economically important traits

#### *Economic evaluation of livestock & agricultural systems*

- Reproductive Efficiency in Beef Cattle: Adopt reproductive technologies and management strategies that improve sustainability; bull management, nutrition in reproduction, hands-on artificial insemination and pregnancy detection training
- Ripple Effects Mapping for the Fort Hall Federally Recognized Tribal Extension Program: Success and stories of FRTEP project directors/educators shared at the national level

#### *Variety trials*

- Cereal and legume variety testing program: Robust data on variety performance so that material with the best agronomic performance and yield, superior disease resistance and ideal quality can be grown.

#### *Educational programs in schools*

- Ag Week- beef production field day for 5th graders: Educate youth about beef-production practices.

#### *Pulses*

- Cropping Systems Agronomy – Aberdeen: Diverse crop options and diversified cropping systems under full and deficit irrigation

#### *Nutrient management*

- Cereal Forage Production in Southeastern Idaho: Identify the optimal timing of cutting for different species of cereal grains; identify the effect of N rate on biomass production and quality

#### *Cover crops*

- Western Cover Crop Council Intermountain Regional Conference: Resources, research, and technology to adopt regenerative agricultural practices

#### **Critical Issue: Forest, Range, and other Natural Resources**

#### **Progress by program/project and *topics of focus identified by Critical Issue group (PET)***

#### *Biodiversity and Wildlife Conservation*

- Logger Education In Idaho Panhandle: Logger training to help Idaho forest-product companies maintain or increase Idaho's share of global markets for certified wood products
- Family Forest Owners in Idaho Panhandle: Forest ecology, silviculture, and related forest management techniques; sustainable production of more wood and biomass and simultaneously improve forest health, water quality, wild-life habitat and other forest values

#### *Increasing public awareness of forest, range and other natural resource issues*

- RREA at work for Idaho Forest Owners: Forest disturbance ecology, wildland fire and wildland/urban interface issues, ecosystem dynamics and processes; skills in forest management activities as well as forest management planning and business-related activities
- Designing, Interpreting, and Applying Rangeland Monitoring to Management: locating monitoring sites, rangeland monitoring, and some keys for data interpretation

#### *Increasing public awareness of forest, range and other natural resource issues*

- Foresters and Other Natural Resource Professionals in Idaho Panhandle: Sharpen skills and stay current on scientific and technological developments
- Noxious weeds video identification series: Simple, short YouTube videos that briefly identify and describe most of Idaho's noxious weeds

#### *Wildfire Risk Reduction and Recovery*

- Idaho Master Forest Stewards: Master volunteer program for forestry

#### *Forest Management*

- RREA at work for Idaho Forest Owners: Forest disturbance ecology, wildland fire and wildland/urban interface issues, ecosystem dynamics and processes; skills in forest-management and planning and business-related activities
- Clearwater Basin Elk: History, Research and Management: Elk-habitat management in the basin; build support for land-management actions to improve elk habitat

#### *Pesticide Applicators Recertification*

- Range Management: Targeted seminars for private and professional applicators in the county to maintain their licenses

#### **Critical Issue: Health and Wellness**

#### **Progress by program/project and *topics of focus identified by Critical Issue group (PET)***

#### *Social/Emotional Wellness*

- "Five for Five" Physical Activity Program: Physical at the county, state and national levels
- Fitness, Healthy Lifestyles, Nutrition Consultations: Physical activity, nutritional programming and education
- Mental Health First Aid: Removing barriers to treatment for those who live with mental health disorders; training to provide early intervention and direction to appropriate care
- PICH - Extreme Adventure Club: Healthy-lifestyle activities at no-cost to them

#### *Physical Wellness*

- Canyon County Diabetes Prevention Program: Prevention or delay the onset of diabetes by 58%
- Community Walking Program (Walk & Talk" in-person) and ("Walk the Prairie" virtual): Physical activity programming and education
- Dining with Diabetes Email Challenge: Online instruction in diabetes management
- Performance Nutrition—Fueling for Success: Balanced nutrition, nutrient-dense food selections; optimal protein; adequate hydration; physical activity, regularly scheduled cardiovascular and strength training; inclusion of flexibility exercises; sleep: consistent sleep adequacy of seven hours or more/ 24 hours
- Whole Food Plant-Based Salads: Plant-based meals benefits and recipe demonstration

#### *Consumer Food Safety*

- Consumer Food Safety: Food-safety information; public health improvement; reduction of financial loss from food spoilage
- Food Safety, Nutrition, and home preserving in the Garden: Connecting youth to their food utilizing the school garden, will reach outlying schools and youth in the summer
- Healthy Meals for Busy Families: Quicker, healthier meals at home; cooking skills; nutrition and food safety for slow cooker meals, freezer meals and 20–30-minute meals
- Smoking and Grilling Foods Program: Consumer food safety and meat science in a hands-on workshop; meat quality and proper handling of foods from preparation to storage
- Preserve@Home: Home food-preservation training online

#### *Environmental Wellness*

- Eat Smart Idaho: Limited-resource individuals, families, and youth improve diet and physical activity behaviors for personal development; family/individual healthcare
- Idaho's Well Connected Communities Initiative: Cultivate wellness; access to recreation for exercise, safe communities, family and social support systems; access to clinical care

#### *Master Food Safety Advisor*

- Master Food Safety Advisor: Food safety and food-preservation practices

#### *Financial Literacy*

- Our Financial Conference: Plan including even the smallest community resource; small financial businesses
- Pirate Loot: Savings education; financial-management skills
- Social Security in Ag: Are you Leaving Money on the Table: Benefit implications of tax filings to qualify for social security

## *General Resource Management*

- Virtual Cooking Club: Kids in the Kitchen: Involving children in meal preparation

### **Critical Issue: Horticulture and Small Farms**

#### **Progress by program/project and *topics of focus identified by Critical Issue group (PET)***

##### *Small farms outreach and education*

- Beginning Farmer Rancher Project: Skills in sustainable crop production
- Cultivating Success Sustainable Small Farm & Ranch Webinar Series: Production and marketing education to successfully manage small acreage ranches/farms
- Idaho Cultivating Success Finding Land to Farm Short Course: Tools for finding and assessing parcels of land; skills to determine financial readiness for land tenure arrangements
- Introduction to Small-Scale Grass-Fed Beef Production for the Rural Landowner: Grass-fed beef production; increase their lands' economic return
- Is a Small Farm in Your Future: Area resources for crop and livestock production, including production, pests, marketing, etc.
- Tuesday Community Market: Sell farmer/ranchers' products; hone direct marketing skills; network with farmers and ranchers with a range of experience

##### *Urban horticulture outreach and education*

- Harvest Heroes Veteran Beginning Farming and Gardening Program: Urban setting growing food; agricultural entrepreneurship to raise crops and livestock
- Idaho Victory Garden online open free of charge in response to pandemic
- Urban Pest Management Online: Green industry outreach and education; federal/state pesticide laws and rules; exam prep on pest management, pesticide use and safety

##### *Master gardener volunteer development*

- Advanced Master Gardeners: Customized curriculum; mushroom cultivation and import substitution for indoor environment
- Master Gardeners: Volunteers train new/beginning gardeners
- Pollinator Summit: Pollinator education enhance/create new pollinator habitats; reduce population decline

##### *Small acreage outreach and education*

- Cultivating Success Beginning Farmer Project: Soil, pest, irrigation and harvesting classes
- Farm to Early Care and Education: Address childhood obesity
- High Altitude Victory Garden Course: High-altitude, short-season classes
- Digging Deeper: Developing Your Idaho Market Garden Online: Market garden-education and hand-on activities related to inventory, recordkeeping, and other tasks
- On-farm hands-on Cultivating Success modules: Hands-on, experiential, accessible learning on irrigation and soil health

### **Critical Issue: Water**

#### **Progress by program/project and *topics of focus identified by Critical Issue group (PET)***

##### *Improve environmental management in the livestock and dairy industries*

- Dairy manure solids and nutrients separation: Liquid dairy manure solid/nutrient separation to improve manure management and reduce handling costs on dairies

##### *Other Unplanned*

- Gooding Community Garden: Production of vegetables in urban settings; adoption of conservation techniques to reduce water-use, water contamination, and nutrient losses in urban and agricultural settings; using demonstration units

##### *Agricultural water quality*

- Project WET Adaptations Video Series for Distance Learning: Service-learning experience provided experiential-learning opportunities; science learning for fifth through twelfth grade delivered via virtual NGSS-aligned science workshops

*Balancing increasing demand for water related to food supply with no increase in water availability*

- Cropping Systems Agronomy – Aberdeen: Crop water use and irrigation management tools.

*Climate change mitigation and adaptation related to water resources*

- Idaho Drought Severity Assessment- (all-year activity): Assess drought conditions regularly; recommendations to the US Drought Monitor for their weekly mapping

*Best tools for understanding and modeling present and future conditions*

- Snowpack monitoring by satellite remote sensing: Advancements in processing satellite data overcomes cloud interference; snow-cover data to be used for model input

**Merit and Scientific Peer Review Processes**

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**Updates**

None

**Stakeholder Input**

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**Actions to seek stakeholder input that encouraged their participation with a brief explanation**

Highlights adding to POW:

- Community Development: Palouse-Clearwater Food Coalition monthly meetings where 2/3 of 90-minute meeting is dedicated to soliciting stakeholder input for local food-system needs.
- Food Production Systems: Statewide survey (n=679) targeting female farmers and ranchers.
- Water: Continual participant-observation research with regional collaborative groups as a means to develop needs assessment. This approach resulted in a refereed article (Ekins, J. (2018) Extension Involvement in Collaborative Groups: An Alternative for Gathering Stakeholder Input. The Journal of Extension, 56(2), Article 17.). Published outputs reflect a collaborative approach and focus on identified needs, and link to programmatic foci of stormwater, best management practices, and citizen science. <https://tigerprints.clemson.edu/joe/vol56/iss2/17/>
- Community Development: Peer Learning Network (PLN) formed from communities that have had past community reviews: 51 Idahoans, and 36 people from Montana and Wyoming.
- Food Production Systems: Research and Extension trials with grower stakeholders on commercial farms. This close contact gives real-time input for current needs and ongoing research.

**Methods to identify individuals and groups and brief explanation**

Highlights adding to POW:

Though we have no updates, we used social media and the internet searches for specific groups a lot this year.

- Example: Internet searches where names and contact information for small farms are posted, including LocalHarvest.org, Idaho farmers' market websites, Idaho Preferred (Idaho State Department of Agriculture website); Idaho certified organic producers list; Rural Roots members, and general web and social media (Facebook, Instagram) farm searches.

We also did a lot of networking in other community organizations this year and used the referral method to ask participants or stakeholders directly for referrals in others who could provide input.

**Methods for collecting stakeholder input and brief explanation**

Highlights adding to POW:



- Though we have no updates, we did utilize social media more this year to disseminate our contact information. This allowed stakeholders to contact us via our emails or even direct messaging services.
- This year, we also used online meeting applications, such as Zoom, to collect input during classes, presentations and during stakeholder meetings.

**A statement of how the input will be considered and brief explanation of what you learned from your stakeholders**

Highlights on what we learned from stakeholders:

- Learned information helpful to reach new underserved audiences
- Interactive, web-based learning ranks high among adult participants
- Rising interest in senior-age support programs
- More education for general consumers on beef cuts and value is crucial.
- Despite Covid-19, dairy and beef cattle production "basics" remain important. Cattle must become pregnant in a timely manner for profitability to be achieved.
- Stakeholders would like to see more emphasis put in areas pertaining to water conservation and native plants.
- Growers are concerned about the water consumption of crops and lack of crop options in dryland areas.
- Wellness needs in the community are ever increasing. Physical, mental/emotional, and social needs have been greatly impacted by the COVID -19 pandemic.
- Producers were wanting information on alternative forages.
- COVID-19 continues to disrupt intermediate market relationships between local producers and restaurants resulting in the expansion of online and other direct market opportunities
- There is opportunity to use podcasts to provide small farm education
- PLN input helped identify key issues across rural communities in Idaho, Montana and Wyoming. These issues include community engagement or volunteerism, placemaking, child-care availability, affordable housing, broadband, workforce
- Responses to improved and revised Ready, Set, Food Safe curriculum; Development and collaboration of food-safety topic projects (reusable water bottle safety and cutting board safety)
- Youth are interested in learning more about food & culture, recruit more members, finances, goal setting, basic adult skills, and exploring different careers.

**Highlighted Results by Project or Program**

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Critical Issue

**4-H Community Youth Development**

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**Positive Youth Development**

Project Director

Holly Waters

Organization

University of Idaho

Accession Number

7000224



**4-H Healthy Habits in partnership with Eat Smart Idaho: Healthy Living**

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**In 2-3 sentences, briefly describe the issue or problem that your project addresses.**

Helping youth develop healthy eating habits and encouraging families to make positive healthy changes are high priorities, according to the Centers for Disease Control and Prevention. The obesity rate for Idaho youth ages 10 to 17 years hovers around 13% with an 11% obesity rate for high school students (2018). The nutrition rate for high school students (those who ate vegetables three or more times per day) was 11.3%. Hispanic youth were more likely to self-report that they were overweight (39%), compared to white, non-Hispanic youth (29%). However, health education focused on nutrition is lacking in elementary and middle schools.

**Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.**

To teach Idaho youth in nutrition education, 4-H Healthy Habits partnered with Eat Smart Idaho. We offered six to eight nutrition-education sessions to 1729 limited-resource youth from grades 1-12. We administered an end-of-session survey to 1404 participants.

**Briefly describe how your target audience benefited from your project's activities.**

Based on responding "Yes" or "Somewhat," 93% of respondents indicated increase in knowledge for giving their family ideas for healthy meals or snacks. 81% indicated increase in knowledge for following recipes.

95% of respondents indicated intent to increase recommended fruits and vegetables each day, and 85% indicating intent to drink less sugary drinks. 97% of respondents intend to drink the recommended amount of water and 96% indicated intent to stay physically active every day.

**Briefly describe how the broader public benefited from your project's activities.**

Students who participated in the nutrition-education sessions are likely to pass this information along to their immediate families.



## **4-H Shooting Sports: 4-H Science (including Animal Science)**

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**In 2-3 sentences, briefly describe the issue or problem that your project addresses.**

The Idaho 4-H Shooting Sports program continues to have a rapidly growing interest among youth. Based on corrected annual enrollment data (2021), 4-H Shooting Sports enrollments topped 1,080 - a 132% increase over 2020. Adult instructors must take youth-development education as well as a comprehensive training for each discipline, since it is critical that our instructors are knowledgeable and capable of providing a safe environment. However, instructor training sessions can accumulate over 20 hours of training needed, sometimes more for multiple disciplines, which is in direct conflict with prospective instructors' jobs and available time.

**Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.**

We led a multi-state team to develop four LMS modules that could be completed online prior to in-person trainings, reducing time for instructors spent away from home and reducing costs for lodging and travel. The modules are 25 to 45 minutes in length and were launched nationwide at the end of 2019.

**Briefly describe how your target audience benefited from your project's activities.**

Even through the pandemic of 2020 and 2021, a total of 1819 participants completed the online training modules from 30 different states and 30 participants participated in an end-of-session survey.

We estimate the implementation of these online training modules reduced the cost of additional meals and lodging for at least 75% of prospective instructors (n=1364) who have attended Level-1 training sessions (versus their counterparts prior to the initiation of these models). The estimated cost savings per person is \$90, which is a projected overall cost savings of \$122,760.

**Briefly describe how the broader public benefited from your project's activities.**

Saving the cost of training for potential instructors in turn promotes the ability for even more instructors to volunteer, as training now reaches a broader audience that may have been restricted due to time and money limitations.

### Production Efficiency, Profitability, and Sustainability

Project Director  
Nav Ghimire  
Organization  
University of Idaho  
Accession Number  
7000016



### **Statewide Pesticide Safety Education Program Recertification Webinars: Pest Management**

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#### **In 2-3 sentences, briefly describe the issue or problem that your project addresses.**

Idaho Pesticide and Chemigation law and rules administered by the ISDA requires private applicators successfully complete six recertification credits to maintain licenses. They must also complete 15 recertification credits during a two-year recertification period. Therefore, pesticide applicators whose licenses were expiring needed educational programs offering credits, so they did not lose their licenses. However, when COVID-19 lockdowns began in 2020, face-to-face Extension programs were curtailed.

#### **Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.**

We developed a COVID-19 compliant method for delivering pesticide-safety education (recertification) programs (PSEP) to fulfill the required continuing-education credits for pesticide licensing. In addition to the online webinars, we developed a protocol for registering participants, collecting pesticide-applicator license numbers and verifying that each participant fulfilled the 60-minute time requirement mandated by Idaho state law.

#### **Briefly describe how your target audience benefited from your project's activities.**

The program had 2438 participants, including Idaho pesticide applicators with state pesticide licenses, professional agricultural applicators, as well as private and professional urban applicators. As a result of the online program, the ISDA issued 2600 pesticide recertification CEU credits.

We administered a post-webinar survey and observed change in knowledge among participants; 87% percent of our participants (n = 2121) said they would take another online program from UI because it was useful, engaging, and met needs. Most participants (97%) believed that the pesticide recertification webinars were worth their time. Nearly 98% indicated that they would plan to attend future pesticide recertification online webinars.

About 82% (n= 1,999) of participants stated our online pesticide education program saved them substantial time and financial resources. The savings came from not having to travel to an offsite location ranging from a distance of 30 miles to many more miles and not having to take a day or several days away from work to attend required seminars.

#### **Briefly describe how the broader public benefited from your project's activities.**

As the private applicators of pesticide recertify and learn new research about pesticide application, Idaho's environmet will be safer and more sustainable.

Critical Issue

## **Forest, Range, and other Natural Resources**

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### Sustainability of forests and rangelands and economic opportunity associated with natural resources

Project Director  
Nav Ghimire  
Organization



## **Family Forest Owners in Idaho Panhandle: Forest Management; Increasing public awareness**

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**In 2-3 sentences, briefly describe the issue or problem that your project addresses.**

The average annual timber harvest Idaho Panhandle from family forests is valued at over \$100 million milled. About 44% of the forests in Idaho are held and managed by 23,796 family forest owners (owning five acres or more per family). Family forests are critical to timber supply, water, and wildlife but need a better working knowledge of forest ecology, silviculture, and related forest management techniques.

**Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.**

Therefore, UI Extension offered family forest-management programs to over 643 family forest owners and employees so family forest owners could sustainably produce more wood and biomass and simultaneously improve forest health, water quality, wildlife habitat, and other forest values.

**Briefly describe how your target audience benefited from your project's activities.**

According to our 13 end-of-session surveys and a follow-up survey, 299 participants adopted monitoring techniques for forest insects, disease, or animal damage issues. Seventy-seven reported intention to contact a forester, and 41 reported intention to attend additional forestry education programs for updated information.

324 participants indicated that they favored forest tree species that resist insects and disease; 237 reduced unwanted vegetation; 247 monitored and managed weeds, especially non-native species, and 160 participants thinned forest trees.

58% of respondents increased their knowledge of landscaping for fire prevention, while others showed a 144% increase in knowledge of stewarding their forest after the "Forestry Shortcourse" compared to before the program participation.

65% of respondents increased knowledge of forest measurements after "Measuring Your Trees" program, and 63% increased knowledge of safely using herbicides in forestry after the "Safely Using Herbicides in Forestry" program.

**Briefly describe how the broader public benefited from your project's activities.**

The increased wood and biomass production and improved forest health, as well as improved water quality and wildlife habitats, boosts Idaho's overall economy, affecting every citizen. Additionally the improved forest health and habitats aids in the fight to preserve natural resources.

Critical Issue

## **Health and Wellness**

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### **Healthy Living, Food Safety, and Financial Resource Management**

Project Director  
Nav Ghimire  
Organization  
University of Idaho  
Accession Number  
7000020



## **Canyon County Diabetes Prevention Program: Physical Wellness; Social/emotional wellness**

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**In 2-3 sentences, briefly describe the issue or problem that your project addresses.**

According to the CDC, more than one out of three Americans have prediabetes, a total of 84.1 million people. But many people are unaware they are prediabetic, and many don't know what they can do to reduce their risk of type 2 diabetes or help manage their type 2 diabetes.

Therefore, the CDC created the National Diabetes Prevention Program to prevent or delay the onset of diabetes by 58% when participants lose 5-7% of their body weight and continue to be physically active at 150 minutes each week.

**Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.**

We certified 11 Extension educators, coordinators and staff as coaches for the Canyon County Diabetes Prevention Program (2017-2021). We enrolled over 200 participants in 18 participant groups (cohorts) in 11 counties. We also developed two series in Spanish and five series for online participation.

**Briefly describe how your target audience benefited from your project's activities.**

Six cohorts (n=46 participants) achieved an average weight loss of 8lbs per participant. 63 participants took our survey and reported an average percent weight loss of 6.5%. The estimated health care savings of adopting practices of this program is \$278 per participant a year. During the three-year span of this program, this totaled a cost saved of \$166,800.

**Briefly describe how the broader public benefited from your project's activities.**

As participants' health improves and their health care savings increases, the burden on Idaho's health care system lessens.



**Eat Smart Idaho: Consumer Food Safety; Environmental Wellness**

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**In 2-3 sentences, briefly describe the issue or problem that your project addresses.**

Two-thirds of Idaho adults and 30% of youth are overweight or obese, increasing risk of chronic disease. While healthy diet and regular physical activity decrease the odds of obesity-related diseases, one in six children and 12.3% of Idahoans overall experience hunger or food insecurity due to a lack of money or resources. Stratified by income, Idahoans in the lowest income brackets report the highest percentage of individuals with low fruit and vegetable intake and low physical activity.

**Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.**

Therefore, we offer Eat Smart Idaho educational programs to assist limited-resource individuals, families, and youth in acquiring knowledge, skills, and attitudes to improve diet and physical activity. This program emphasizes sustained behavior change, creating environmental changes that promote healthy eating and physical activity.

Eat Smart Idaho worked with 121 partners to promote the Long Live Idaho Healthy Messaging Campaign, reaching an estimated 11,242 people through print materials and 7,100 people through electronic media. We also worked with 53 K-12 schools and 11 daycare or preschools to improve the lunch environment to encourage healthy eating through the Smarter Lunchrooms Movement and Smarter Mealtimes interventions. Overall, the Eat Smart Idaho program had 6733 direct participants in 2021.

We administered pre- and post-surveys to 2242 participants. We also administered an end-of-session survey to 1974 participants.

**Briefly describe how your target audience benefited from your project's activities.**

95% of adult participants showed improvement in one or more diet quality indicators (i.e., eating fruits, vegetables, red and orange vegetables, dark green vegetables, drinking less regular soda (not diet), drinking less fruit punch, fruit drinks, sweet tea, or sports drinks, and cooking dinner at home).

62% of adult participants showed improvement in one or more physical activity behaviors (i.e., exercising for at least 30 minutes, doing workouts to build and strengthen muscles, or making small changes to be more active).

71% of adult participants showed improvement in one or more food safety practices (i.e., washing hands before preparing food, washing all items and surfaces after cutting raw meat or seafood, not thawing frozen food at room temperature, or using a meat thermometer).

88% of adult participants showed improvement in one or more food resource management practices (i.e., cooking dinner at home, comparing food prices, planning meals before shopping, looking in the refrigerator or cupboard before shopping, or making a list before shopping).

24% of adults showed improvement in one or more food security indicators (i.e., not eating less than you wanted so there was more food for your family or having enough money to get food for your family), and 85% of adults participating in Eat Smart Idaho one-time classes reported positive intent to change or maintain positive behaviors related to diet quality and food resource management.

89% of children and youth (grades 6-12) adopted and practiced one or more food selection behavior(s) consistent with the Federal Dietary Guidelines following participation in an Eat Smart Idaho class series, compared to before participation.

58% of youth (grades 6-12) adopted and practiced one or more behavior(s) necessary to handle food safely following participation in an Eat Smart Idaho class series, compared to before participation.

66% of youth (grades 6-12) adopted or improved one or more habit(s) or behaviors related to physical activity following participation in an Eat Smart Idaho class series, compared to before participation.

79% of children and youth (grades K-5) improved one or more knowledge or skill(s) necessary to choose foods consistent with Federal Dietary guideline recommendations following participation in an Eat Smart Idaho class series, compared to before participation.

96% of youth participating in Eat Smart Idaho one-time classes reported intent to change behaviors related to diet quality, physical activity, or food safety. Seventy-two percent reported that they learned something new in the class.

47% of children and youth (grades K-5) improved one or more knowledge, skill(s), or behavior(s) related to handling food safely following participation in an Eat Smart Idaho class series, compared to before participation.

41% of children and youth (grades K-5) improved one or more knowledge, skill(s), or behavior necessary to improve their physical activity practices following participation in an Eat Smart Idaho class series, compared to before participation.

**Briefly describe how the broader public benefited from your project's activities.**

This program covers a wide target audience. Therefore, their behavior changes and knowledge learned reaches into easing burdens on the public health system by reducing potential health problems.

Critical Issue

## Horticulture and Small Farms

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### Sustainable use of land, plants, and food

Project Director

Nav Ghimire

Organization

University of Idaho

Accession Number

7000221



**Idaho Victory Garden Online Public Access Course**

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**In 2-3 sentences, briefly describe the issue or problem that your project addresses.**

During the COVID-19 pandemic, many retail industries suffered from the economic hit. However, in Idaho and nationwide, interest in home gardening and self-sufficiency saw the biggest increase since 2008, and the gardening industry saw a significant economic increase. Many people, especially those new to gardening, were looking for reliable, research-based

information and advice.

**Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.**

Therefore, since the pandemic shut down our in-person spring gardening programs, we opened our popular Idaho Victory Garden program online to the public free of charge in a self-guided, self-paced course.

The Idaho Victory garden increases home and community food production and trains individuals and families to successfully plan, plant, harvest, prepare and preserve affordable and healthy food. We provided online videos, lectures, readings, and activities as well as a Facebook group where participants shared ideas.

**Briefly describe how your target audience benefited from your project's activities.**

Our audience included small-acreage landowners and home and community gardeners.

Over 1200 participants accessed course materials 63,316 times since late March 2020, and the private Facebook group for participants attracted 375 active members.

We administered one end-of-session survey and one follow-up survey with participants after the course. 100% of respondents to post-course surveys reported an increase in knowledge related to home and community food production. 100% of respondents indicated a change in behavior by growing a home vegetable garden in 2020 and implementing key practices taught in the course.

Over 1000 individuals accessed course materials, potentially reducing their fresh fruit/vegetable budget for the year by an average of \$400 per household.

**Briefly describe how the broader public benefited from your project's activities.**

Our target audience took the knowledge and skills and applied it to their home and community gardens, which in turn provided their families and community at large increased access to food.

Critical Issue

## Water

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### [Social-ecological resilience and water system robustness](#)

Project Director

Nav Ghimire

Organization

University of Idaho

Accession Number

7000219



**Dairy manure solids and nutrients separation: Minimize water and nutrient losses from system (water and nutrient cycles), and expand byproduct utilization**

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**In 2-3 sentences, briefly describe the issue or problem that your project addresses.**

Milk production generates large amounts of liquid dairy manure as a by-product. Though liquid manure can be processed and the nutrients be applied to fields, too much manure challenges storage-lagoon capacity, affects the nutrient content, and poses hazards to processing equipment. Therefore, more efficient processes for liquid dairy-manure solids and nutrient distributions are needed in addition to the traditional screens.

**Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.**

To improve manure management and reduce handling costs for dairies, we conducted a year-long lab and on-farm research generating information on solid density, solids' particle distribution and nutrients of different particle sizes. We tested at eight on-site locations with two case studies; 30 participants took part in the research process.

Test results showed that centrifuges have the capacity to remove finer particles after screening, and these particles contained much higher N, P, and K nutrients. At a commercial dairy, 22 tons/day of solids are separated by two screen separators and run through two parallel centrifuges after, to separate 24 tons of solids/day.

**Briefly describe how your target audience benefited from your project's activities.**

Research findings indicate that eight Idaho dairies have saved at least \$100,000 each from installing centrifuges. These eight running centrifuges processed several million gallons of liquid dairy manure and separated over hundreds of gallons of solids and nutrients out of manure streams. This makes better use of manure nutrients and saves the dairies hundreds of thousands of dollars on cleaning manure lagoons.

Two producers participated in the two case studies reported changes in knowledge and recommended the centrifuge technology to other dairy producers. Local dairies that utilize centrifuges on-site has increased from one to eight in the past three years.

**Briefly describe how the broader public benefited from your project's activities.**

Applications of this centrifuge project will aid milk producers to save costs and better apply nutrients. This, in turn, will save the public money when buying milk products from these dairies.

Type

Projects / Programs

**Projects / Programs without a Critical Issue**

**0**

Not Provided