

Review Report

Contributing Organizations

University of Arizona

Directors

Edward Martin

Signed

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Executive Summary

Overview

Many challenges are shaping the future of Arizona agriculture and the direction of our research and Extension activities. Over the next decade, Arizona agriculture will be challenged by international competition, environmental regulation, changes in technologies and the food and fiber production chain, and perhaps most critically with increased risks related to changing climate and reduced water availability. These challenges are being met at the University of Arizona – Arizona’s Land Grant University – through both individual management decisions and actions by government, land grant colleges, and grass roots groups of agricultural producers.

Collective actions will also affect farming in the next decade, perhaps even more so than in the past. At the federal level, economic policies seem on track to foster lower interest rates, a crucial factor for capital-intensive agriculture, and a growing economy. Higher incomes will encourage demand for value-added and specialty agricultural products. Extension activities at the federal and state levels will provide information to reduce producer risk. Ongoing research projects provide economic and resource analyses to aid in decision making by farmers and policy makers. At off-campus locations, the College of Agriculture and Life Sciences in conjunction with CCT will deploy new computer and communications-based technologies to increase and make scientific information more accessible to farm and agribusiness managers and employees.

Although there have been challenges, most of Arizona agriculture has prospered over the last ten to fifteen years by successfully meeting the challenges of declining real commodity prices, increasing input prices, serious pest problems, drought, and increasing government regulations. This capacity to meet challenges bodes well for the future.

Considering the continued trends towards a hotter and drier climate and the rapidly evolving situation regarding allocation of water from the Colorado River, future scenarios are challenging to predict. Nevertheless, we speculate that ten years from now, somewhat fewer total acres will be farmed in Arizona though we will have about the same number of very large farms producing most of the state's agricultural production. Technology advances across the industry are likely to increase yields per acre that will at least partially offset the reduction in total acres farmed, although the acreage of individual crops planted may change over the years. Assuming adequate water supplies, the dairy sector will continue to expand while ranching may decline somewhat due to reduced rangeland quality. Native American agriculture will likely increase with the availability of affordable water and concerted efforts to support indigenous agricultural practices. More noticeable changes will occur in production technologies, the degree of vertical integration, and increased interaction with the international market.

Several ongoing research projects are focused on water usage and technologies to optimize crop agriculture and animal production. These include studies to assess optimal irrigation technologies, plant disease research and mitigation, pest management and control, advanced breeding for crop resilience and animal performance, environmental and genetic control of seed quality, and ecohydrology and watershed management to maximize rangeland health and sustainability. With a growing awareness of the interconnectedness of abiotic and biotic components of agriculture and the need to integrate knowledge across scientific fields (convergent science), we have recently launched the Center for Agroecosystem Research in the Desert (ARID) to develop holistic solutions to challenges facing crop production in arid lands.

The five Critical Issues being addressed by the University of Arizona, as supported by formula funds and leveraged by additional extramural funding, are:

1. A sustainable, profitable, and competitive food and fiber system in Arizona
2. Arizona youth focus and preparation
3. Enhance natural resource conservation and management
4. Improve the health, safety, and economic security of Arizona communities
5. Prepare Arizonans for the future

These five critical issues are being addressed through research and Extension activities being conducted in the 10 academic units of CALES. The context and plans of work for FY 2025 are discussed below.

National, state and county budgets are a challenge which impacts the ability of the Arizona Cooperative Extension to meet stakeholders needs; limited funding and extreme competition for grants are problematic but not impossible to overcome. Despite these challenges, it is important to note that the direct, induced and ripple effects of Arizona Agriculture has an overall annual impact of more than \$23B on the state's economy.

Critical Issue: A sustainable, profitable and competitive food and fiber system in Arizona

Context: Irrigated agriculture in Arizona is increasingly stressed by limited water allocations, including decreased availability of groundwater (aquifer depletion) and diminished flows in the Colorado River, which provides water to the western Arizona speciality crop growers in the Yuma region. To address these and similar issues, Arizona farmers have been and continue to be early adopters of new technologies, including laser leveling, drip irrigation, transgenic cottons, insect growth regulators (IGRs), and others. Informed, innovative farm managers, as well as price and yield incentives, helped spur this early, widespread adoptions. Thus, progressive farm management attitude and practices already in place will help assure the use and diffusion of new technologies in the next decade.

Plan of Work: New developments in precision implements, communication, and computer technology will be pursued to improve farming and ranching activities. For example, data from precision implements will be analyzed and shared through on-line tools, permitting improved interaction between farmers and various other players in the food and fiber production system. GPS and GIS will make increasingly important contributions to precision farming, especially in relation to water utilization and monitoring of productivity. Our relationship with NASA will build on the GPS and GIS activities and its practical application at the local level. Agribusinesses will be more closely linked by these technologies and provide inputs tailored to individual field and feedlot needs. Our Communications and Cybertechnology (CCT) Department within the Arizona Experiment Station has become a national leader in providing capacity for the conduct of research utilizing "big data" by standing up innovative solutions for researchers and developing impactful tools and interfaces to advance data science research across all our areas of inquiry and information delivery. CCT also includes a renowned media production group that has developed powerful Emmy award winning video content that communicates key issues across our domains of inquiry.

Farms will continue to grow their use of biotechnological innovations, especially for managing pests and the application of biological amendments to increase yield. Bt and Roundup Ready cotton provide good examples of ways that biotechnology has helped meet the challenge of long-run price declines and environmental challenges. For many years, the UA cotton management team has worked closely with growers in implementing the use of insect growth regulators and Bt cotton in their fields. Because of this program, there has been a 60% decline in pesticide spraying, resulting in a reduction of 1.6 million pounds of pesticides used. This has saved 142 million dollars and reduced damage by 11%.

As temperatures rise in the Southwest, there is increased atmospheric demand for moisture (elevated evapotranspiration and snowpack sublimation) leading to increased water restriction. As a result, soils are coming under increasing stress. A better understanding of how the microbiome interacts with and influences plant growth, and the potential deleterious effects of elevated temperature and decreased moisture availability, motivate mitigation strategies for maintaining soil health and therefore agricultural production. Several ongoing projects are addressing these issues. Projects are investigating the geochemistry of soil as it relates to plant and animal agriculture and the use of residuals (compost, biochar, biological stimulants, algal-derived hydrogels, etc.) to improve soil health and agricultural productivity while decreasing crop demand for water inputs. We have also launched a statewide soil health initiative, the first step of which is to perform a comprehensive soil health assessment in Arizona's major agricultural regions. A vigorous area of current inquiry focuses on the bacteria, archaea, and fungi composing the soil microbiome, including their interactions, functional impacts on the ecosystem, and production of metabolites. With extensive faculty expertise this area, projects are focused on the discovery, diversity, functional attributes of the arid land soil and plant microbiomes. Future projects will expand these efforts with a focus on translating knowledge gained to increased crop yields and long-term sustainability of the arid lands agroecosystem.

Extension-specific work:

- **Technology Adoption and Training:**
 - **Specific Plan:** Organize workshops and training sessions for farmers on the use of precision agriculture tools, GPS, GIS, and big data analytics. Establish demonstration farms to showcase the benefits of new technologies and biotechnological innovations like Bt cotton and insect growth regulators.
 - **Impact:** These initiatives will help farmers increase yields, reduce input costs, and minimize environmental impacts, ensuring a competitive and profitable agricultural sector.
- **Economic and Resource Analyses:**
 - **Specific Plan:** Develop decision-support tools and economic models to help farmers and policymakers make informed choices about crop selection, resource allocation, and risk management. Provide training on using these tools effectively.
 - **Impact:** By offering robust economic analyses and decision-support systems, farmers can optimize their operations, reduce financial risks, and adapt more readily to market and environmental changes.

Critical Issue: Arizona Youth focus and preparation

Context: Youth health issues remain a challenge. We have a long way to go to reach the point where every Arizona child can succeed. The rate of reports of child abuse and neglect needing investigation grew about 30% in the past 10 years. The rate of child deaths due to abuse or neglect nearly doubled during that time. And perhaps the most alarming statistic is the 25% jump in the percentage of Arizona children living in foster care. These are the most vulnerable children in our communities, growing up without the security of a stable family. The challenge to our program is to provide unique research-based university outreach efforts in partnership with local and state government as well as non-governmental organizations to address these crises conditions.

Plan of Work: Our family and youth programs are experiencing change. In this era of federal deregulation and block grants to states, Arizonans have both the opportunity and the responsibility to cope with the gap in children's health care coverage, the tragedies of child abuse and neglect, the struggles of parents without job skills, and chronic diseases such as obesity and diabetes. There is clear evidence that community effort can help prevent teenagers from having babies, committing crimes, and dropping out of school. Healthier people are better able to contribute to a robust economy.

Fortunately, we have the tools we need to face these challenges. Our family-focused research programs will be exploring systemic barriers to success for underserved populations. Arizona comprises large Native American and Hispanic communities that are disproportionately affected by environmental and socio-economic risk factors. Research in multiple CALES units will be focused on quantifying that risk and assessing the efficacy of remedial approaches. The risk indicators confirm that focused attention, money, and uninterrupted effort over time will produce good results. As a result of increased federal and state investment, more children now have access to quality preschool, and more parents are getting help in paying for childcare.

Several CES programs are focused on 4H and community engagement in underserved communities to improve and accelerate change toward positive outcomes.

Extension-specific work:

- **Youth and Family Programs:**
 - **Specific Plan:** Implement comprehensive family support programs that provide job training for parents, quality childcare, and early childhood education. Increase outreach and support services for at-risk youth to prevent issues such as teen pregnancy, crime, and school dropout.
 - **Impact:** By supporting families and youth, these programs will create a more stable and healthy community environment, reducing long-term social and economic costs associated with neglect and abuse.

Critical Issue: Enhance natural resource conservation and management

Context: Arizona has rangelands used primarily for livestock production throughout the state at low elevations that grade into forest and forestry-related activities at high elevations. The capacity for rangelands in Arizona and throughout the Southwest to support human systems diminishes annually due to changing precipitation, increasing temperatures and unsustainable management practices. Meanwhile, significant challenges are faced at higher forested elevations where seasonal wildfires are increasingly prevalent. The urgent, unmet need is to promote the recovery of degraded range and forest ecosystems and increase their productivity by enhancing resilience to drought and disturbance.

Plan of Work: Collaborative research teams in multiple CALES units are working to discover the natural rules that mediate degradation tipping points in rangelands and forests, to harness science and technology to mitigate a decrease in productivity under a changing climate, and ensure stability into the future. Our mission is to pursue the essential convergence of biological, agricultural, and environmental sciences, translate new discoveries to socially responsive technologies, and to train the next-generation workforce and stakeholders to restore water-limited range systems to productive states. Several of our projects, including a most recent submission to USDA for a Center of Excellence, involve integration of transdisciplinary teams of ecologists, plant and soil scientists, hydrologists, educators, social scientists, land managers and trainees with diverse industry partners in scientific discovery, technology-development, and technology-use. This approach will infuse research with novel emergent methodologies to mitigate land degradation under a changing climate by transforming the science behind interventions that promote soil-plant-ecosystem health. Guided by stakeholder inputs, team activities will focus on merging expertise across disciplines to formulate land management and eco-engineering interventions that enhance the resilience of these ecosystems under changing climate.

Technology is currently available to address many natural resource problems. To minimize adverse impacts on soil and water resources, ranchers will continue to conduct rangeland monitoring and adjust their livestock grazing systems. Specific methods are being developed to effectively demonstrate the benefits of instituting environmentally sound natural resource management programs. The Arizona Experiment Station and Arizona Cooperative Extension are leaders in this arena. The social, environmental, and economic benefits from these new practices need to be quantified and compared to the costs of not implementing these programs.

Extension-specific work:

- **Soil Health and Microbiome Research:**
 - **Specific Plan:** Conduct statewide soil health assessments and provide farmers with customized recommendations based on soil health data. Promote the use of organic amendments, such as compost and biochar, to improve soil fertility and structure.

- **Impact:** These initiatives will improve soil health, enhance crop resilience, and reduce the need for chemical fertilizers and pesticides, contributing to long-term agricultural sustainability.
- **Rangeland and Livestock Management:**
 - **Specific Plan:** Promote rangeland monitoring and adaptive grazing practices to maintain rangeland health. Develop and disseminate guidelines for sustainable livestock management that minimize environmental impact.
 - **Impact:** Improved rangeland and livestock management will ensure the sustainability of ranching activities, preserving the ecological balance and economic viability of rural communities.

Critical Issue: Improve the health, safety, and economic security of Arizona communities

Context: Human diseases, including cardiovascular disease, diabetes and metabolic disorders, are critical issues facing Arizona citizens that disproportionately affect our more disadvantaged populations.

Plan of Work: In addition to community-facing diabetes prevention and nutrition education programs, a major research initiative has been established in precision nutrition and wellness. CALES has recently established a This rapidly emerging field combines data from an individual's genetics, environment, nutrition and lifestyle to precisely diagnose disease, target therapies and personalize health, nutrition and wellness plans. During this past year, the Center for Precision Nutrition and Wellness was launched in recognition of the health challenges facing Arizona citizens and the promise of precision approaches to mitigating human disease and increasing wellbeing.

Another strong focus in this area involves research conducted by several CALES faculty into the impacts of environmental pollution on human health. Risk assessment includes exposure assessment, which is conducted by experts in our environmental science units, and dose-response relations which are measured experimentally by experts in our animal and human biomedical science units. By working together, these scientists span the full range of expertise required to address this increasingly challenging area. Our researchers are developing novel strategies to better understand precisely how, as the Southwest becomes hotter and drier under climate change, the tendency of exposures to contaminants will change (e.g., increased dust transport), with concurrent impacts on human health.

Extension-specific work:

- **Health and Nutrition Programs:**
 - **Specific Plan:** Expand community-based nutrition education and diabetes prevention programs, particularly in disadvantaged areas. Launch targeted initiatives through the Center for Precision Nutrition and Wellness to provide personalized health and nutrition plans.
 - **Impact:** These programs will address critical health issues such as obesity, diabetes, and cardiovascular disease, improving the overall well-being of Arizona's population, especially among vulnerable groups.

Critical Issue: Prepare Arizonans for solutions of the future

Context: Home to one of the most rapidly growing populations in the US, Arizona is also changing demographically and environmentally. Therefore, the task of preparing Arizonans for the future involves developing a predictive understanding of a consistently changing target population and environmental conditions. As a land grant university, our task is to determine the needs of this rapidly evolving state as it faces unprecedented challenges in the coming years.

Plan of Work: Our division leadership team is strongly focused on developing the interdisciplinary teams needed to solve problems at the interface of socio-economic and political structures and environmental systems. The environmental systems of focus range from irrigated specialty cropping systems to rangelands to managed forests and to urban environments. Each of these systems is subject to a unique set of challenges that are being addressed by CALES, AES and CES, as discussed above.

In respect to this particular critical issue, we are focusing on the training of the next generation of agriculture, life and environmental scientists so that they are competitive for the jobs of the future, including those that don't yet exist. Therefore, our team is strongly focused on leveraging the resources afforded by the fourth industrial revolution and its impact on the accessibility of artificial intelligence and big data analytics for addressing land and social management issues. We are supporting a big data analytics and IT infrastructure within the AES that then provides internal support to research, instruction and Extension efforts in the college. Furthermore, we are using our presence in all 15 of Arizona's counties to connect both rural and urban communities to the science and education available at the University of Arizona to support sustainable economic growth in the state.

Extension-specific work:

- **Climate Change and Water Availability:**

- **Specific Plan:** Develop and implement water-saving technologies and practices, such as advanced irrigation systems (e.g., drip irrigation and precision irrigation) and water recycling programs. Expand partnerships with organizations like NASA for utilizing satellite data to monitor water resources and predict drought conditions.
- **Impact:** These actions will help mitigate the risks associated with reduced water availability and ensure sustainable agricultural practices in the face of climate change.

Merit and Scientific Peer Review Process

In the College of Agriculture, Life and Environmental Science (CALES) at the University of Arizona (UA), both research/teaching and Extension/research faculty submit proposals for Federal Capacity support using the same approach.

Proposal development, submission and evaluation follows a rigorous established process. Faculty are encouraged to discuss and develop proposal concepts with colleagues, the Associate Vice President for Research and the Experiment Station Associate Director. Key to the development of proposals is that they address one or more of the five "Critical Issues" identified for Arizona. Faculty whose proposal ideas address a stakeholder need and align with identified critical issues are asked to submit a full proposal.

A review panel consisting of at least three faculty members with USDA grant review experience and relevant expertise is appointed by Experiment Station Associate Director. The committee reviews the proposal according to the following criteria: 1) overall merit relative to the goals of the relevant federal capacity program, the work plan critical issues, and the needs of Arizona stakeholders; 2) scientific and technical merit 3) relevance of proposed outcomes to stakeholder needs. The committee prepares a consensus review and makes one of three recommendations: 1) approval as submitted; 2) approval subject to revision and resubmission; 3) disapproval. Written comments including recommendations for improving the proposal, if appropriate, are provided to the PI. Proposals that do not address the goals of the institution and stakeholders are requested to be revised to align with institutional and state critical issues. Revised proposals are reviewed by the committee and the Associate Experiment Station Director, and if approved are submitted for NIFA final evaluation.

Given the limited availability of federal capacity funds, a key criterion for proposal development is that it develops ideas and concepts that will be competitive for additional extramural funding.

In Extension, requests for funding for special projects are reviewed by the Extension Administration Council for veracity and their application to the critical areas.

Stakeholder Input

Actions to seek stakeholder input that encourage their participation

Stakeholder input is used by The College of Agriculture, Life and Environmental Sciences (CALES), the Arizona Experiment Station (AES) and the Cooperative Extension System (CES) to help determine priorities and the need to establish new programs and possibly sunset others.

Faculty throughout the CALES, CES and AES are informed of the five Critical Issues identified by the institution, are required to identify which critical issue(s) is (are) appropriate umbrella(s) for their research or Extension programming. Research and teaching faculty who do not have an Extension component to their workload distribution are encouraged to maintain strong communication with Extension specialists that conduct applied programming in their research area, and to receive stakeholder input through that mechanism of communication. Extension specialists are housed within the ten academic units of CALES, and so participate in the academic programming therein, and establish strong relationships with research and teaching faculty.

Feedback is obtained through traditional and novel stakeholder input mechanisms, such as targeted invitations, surveyes, public meetings and listening sessions advertised through media mechanisms.

The CES and AES obtain and incorporate the feedback:

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Prioritize Research Programss
- In the Staff Hiring Process,
- In the Action Plans
- To Set Priorities

This year's listening sessions conducted throughout the state will be a major contributor to our Strategic Planning process going forward. We've already commissioned an economic impact analysis and it will be joined with the needs assessment to complete our strategic plan. With the needs assessment, we will be able to better identify which programs work best in which communities. We can then start to throttle up or back as well as incorporate new programming.

Collecting, identifying, and analyzing stakeholder input is critical to the strategic plan. That's why we've taken an approach of "go slow to go fast" with the needs assessment. We want to be sure it's capturing feedback from all pockets of the state. In the past, we relied on mostly our current clientele. With this needs assessment, we're able to collect information from other Arizonans who don't know about who we are and what we do – and how we can possibly help them in their daily lives.

Stakeholder input will help us to determine what is needed and what roles we need to create. CES has been fortunate to receive additional state funding this year and it's a great time to make any adjustments in our personnel and staffing capacity to ensure we're addressing the needs of Arizonans. Stakeholder input is also used to prioritize research proposals as they are being reviewed.

Methods to identify individuals and groups

We will use the following methods to identify groups and individuals to collect input:

- Use Advisory Committees,
- Use Internal Focus Groups,
- Use External Focus Groups
- Open Listening Sessions Needs Assessments,
- Use Surveys

In addition to the above tactics and our recently launched needs assessment, we have established a position to help us engage with our growing Spanish-speaking communities. This includes translating (or, trans-creating) any publications, web sites, or other resources that may of interest. This role is also leading up efforts to engage more with Tribal audiences from across the state.

Many of our current programs have relationships with other organizations and we rely on those relationships to stay aware of groups or individuals whom we would like to hear from and expose our offerings to them. With the focus on our social media, we've been able to "social farm" groups of similar interest and groups who could benefit from our programming. These groups include gardening, new/beginning farmers and ranchers, and youth development programs.

We've brought on some newer technologies that help us to keep track of current and former clients so we can continue to pulse and see what services they're interested in and what they need. We get lots of great feedback from them, especially our former clients, as we can make any adjustments to re-engage them to our latest offerings.

Methods for collecting stakeholder input

Below are a few methods we plan to use for collecting stakeholder input:

- Meeting with traditional Stakeholder groups,
- Survey of traditional Stakeholder groups,
- Meeting with traditional Stakeholder individuals,
- Survey of traditional Stakeholder individuals,
- Meeting with the public (open meeting advertised to all),
- Survey of the public,
- Meeting specifically with non-traditional groups,
- Survey specifically with non-traditional groups,
- Meeting specifically with non-traditional individuals,
- Survey specifically with non-traditional individuals,

- Meeting with invited selected individuals from the public,
- Survey of selected individuals from the public, Other (Real-time assessment of programs and offerings)

As previously mentioned, a lot of our effort this year is in the needs assessment survey. But that doesn't mean it's the only method we will employ. Again, we utilize tried and true methods of engaging and collecting input from various stakeholders across the state as well as our internal constituents such as campus personnel, county-based personnel, and our volunteer networks.

We value the input provided by our clients, former clients, and prospective clients and partners. This is why we constantly solicit their feedback using in person discussions, surveys, town halls, and other methods. Many, if not most, of our programs offer a way to provide immediate feedback from program participants. We also have ways for clients to provide feedback online. We utilize this information to make changes. For example, if we receive feedback about one of our web pages, we're able to mobilize efforts to address those changes to better serve the clients' needs.

One service we provide is a plant clinic where trained and certified Master Gardeners provide responses to online inquiries from the public. If a client is not satisfied with a response, we can escalate and have a specialist reach out to the client and address their need. In most cases, Master Gardeners can provide adequate service.

A statement of how the input will be considered

Stakeholder input is used by The Arizona Experiment Station and Cooperative Extension to help determine priorities and the need to establish new programs and possibly sunset others. Here are a few ways we plan to use and incorporate the feedback:

- In the Budget Process,
- To Identify Emerging Issues,
- Redirect Extension Programs,
- Prioritize Research Programs,
- In the Staff Hiring Process,
- In the Action Plans,
- To Set Priorities

We've already commissioned an economic impact analysis and it will be joined with the needs assessment to complete our strategic plan. With the needs assessment, we will be able to better identify which programs work best in which communities. We can then start to throttle up or back as well as incorporate new programming.

Collecting, identifying, and analyzing stakeholder input is critical to the strategic plan. That's why, we've taken an approach of "go slow to go fast" with the needs assessment. We want to be sure it's capturing feedback from all pockets of the state. In the past, we relied on mostly our current clientele. With this needs assessment, we're able to collect information from other Arizonans who don't know about who we are and what we do – and how we can possibly help them in their daily lives.

Stakeholder input will help us to determine what is needed and what roles we need to create. Cooperative Extension has been fortunate to receive additional state funding this year and it's a great time to make any adjustments in our personnel and staffing capacity to ensure we're addressing the needs of Arizonans. Stakeholder input is also used to prioritize research proposals as they are being reviewed.

Critical Issues

Active

A sustainable, profitable and competitive food and fiber system in Arizona

Last Updated: 2024

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Arizona is facing significant challenges associated with climate change, which is decreasing water available for irrigated agriculture and placing stress on rangelands that support livestock production.

Livestock production - to help livestock producers:

- Prevent potential threats by developing an early warning system to detect 1) new emerging diseases, 2) the resurgence of well-known diseases, and 3) the introduction of foreign animal diseases into the United States.
- Design management systems that fit an extensive range environment, including livestock production; genetics; nutrition; reproduction; economics; and grazing management.

Crop production - to help growers:

- Increase water use efficiency in irrigated crops.
- Use best management practices to enhance sustainable production of plants used for food, fiber, livestock feed, industrial products, and for environmental, aesthetic, recreational, conservation and ornamental purposes.

Urban horticulture - to help homeowners and landscape managers:

- Increase water use efficiency in home and commercial landscapes.
- Employ best management practices in the selection, installation, care and production of plants used for food, conservation, recreational and ornamental purposes.

Science Emphasis Areas: Agroclimate Science, Bioeconomy, Bioenergy, and Bioproducts, Education and Multicultural Alliances, Environmental Systems, Food Safety, Sustainable Agricultural Production Systems

Research Projects: 17

Extension Programs: 1

Active

Arizona Youth focus and preparation

Last Updated: 2019

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Prepare Arizona youth to be productive citizens, equipped with the knowledge, skills, and attitudes needed for life-long learning and a positive future. Engage youth as participants and decision-makers in programs, organizations, and communities of 4-H and beyond. Promote the Arizona 4-H Youth Development program among diverse communities in Arizona.

Science Emphasis Areas: Education and Multicultural Alliances, Environmental Systems, Family & Consumer Sciences, Youth Development

Research Projects: 1

Extension Programs: 1

Active

Enhance natural resource conservation and management

Last Updated: 2019

Initiated on: 11/26/2019

Term Length: Intermediate (1-5 years)

Increase public awareness and understanding of water quality and quantity, watershed values, riparian areas, climate science and geospatial tools. Work with natural resource managers to improve management of rangeland and forest resources on a sustainable basis using best management practices.

Science Emphasis Areas: Agroclimate Science, Education and Multicultural Alliances, Environmental Systems, Family & Consumer Sciences, Food Safety, Sustainable Agricultural Production Systems, Youth Development

Research Projects: 8

Extension Programs: 2

Active

Improve the health, safety, and economic security of Arizona communities

Last Updated: 2019

Initiated on: 11/26/2019

Term Length: Intermediate (1-5 years)

Provide training to help Arizona residents acquire the knowledge, skills, attitudes and behaviors necessary for self-sufficient, healthy lifestyles. Equip youth and adults with work and life skills to help them acquire and keep jobs in today's workforce.

Science Emphasis Areas: Agroclimate Science, Bioeconomy, Bioenergy, and Bioproducts, Education and Multicultural Alliances, Environmental Systems, Family & Consumer Sciences, Food Safety, Human Nutrition, Youth Development

Research Projects: 7

Extension Programs: 1

Active

Prepare Arizonans for solutions of the future

Last Updated: 2019

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Work with university specialists on innovative approaches to current problems as well as problems which we can't anticipate yet. Facilitate training and programming to introduce our communities, especially our youth, to help prepare them for jobs that don't even exist yet.

Science Emphasis Areas: Bioeconomy, Bioenergy, and Bioproducts, Education and Multicultural Alliances, Environmental Systems, Family & Consumer Sciences, Sustainable Agricultural Production Systems, Youth Development

Research Projects: 1

Extension Programs: 1

Report Status

Approved as of 07/30/2024

Comments

The plan of work for the University of Arizona continues to make impressive progress and improvements, big congratulations to the leadership and staff working on this document. The selected critical issues are well documented, justified, and build upon each other which will create synergies to move forward.

Regarding the Merit and Review process, this area is much improved and contains enough information for USDA and the public to understand how funded projects are selected. The described process also provides a glimpse into how capacity is being built at the institution by including a criterion requiring that the submitted topic is also suitable for competitive extramural funding. Such criterion raises the bar of the caliber of topics the institution is seeking to support via these capacity funds.

Stakeholder input is well documented, but it may benefit from adding more detail. A few opportunities to do so could be how many advisory committees there are, how are they selected and what do they do. Regarding on how the feedback is incorporated, you could provide a few examples of how last year's feedback was incorporated or impacted the development of this year's plan of work. While the annual report will talk about how many stakeholder input opportunities the institution had, the plan of work should include how the received feedback was incorporated. A few examples would suffice, and it is important to note that it is not expected to impact everything every year, but it is to show that this plan of work continues to evolve and is responsive to the community.

Again, great improvements in the plan of work of the University of Arizona; congratulations!