Item 5.0
ESCOP Budget and Legislative Committee Agenda Brief
Presenters: Gary Thompson and Mike Harrington
For information only

The committee holds regular conference calls on the last Tuesday of each month that have generally been well attended. The current B&L Committee membership is shown below.

Chair: Gary Thompson (NERA) **Delegates:** Barry Bequette (ARD) Carolyn Brooks (ED-ARD) Karen Plaut (NCRA) Ernie Minton NCRA Tim Phipps (NERA) John Wraith (NERA) Bill Brown (SAAESD) Saied Mostaghimi (SAAESD) Jim Moyer (WAAESD) Vacant (WAAESD) **Executive Vice-Chair** Mike Harrington (WAAESD)	**Liaisons** Rick Klemme (ECOP Liaison) Robin Shepard (ED - NCERA) Robert Holland (NIFA) Paula Geiger (NIFA) Vacant (ARS) Glen Hoffsis (APLU Vet Med) Eddie Gouge (APLU) Ian Maw (APLU) Connie Pelton Kays (CARET) Cheryl Achterberg (APLU - BoHS) Jim Richards (Cornerstone) Hunt Shipman (Cornerstone) Vernie Hubert (Cornerstone)

Water Security Initiative
A group from ESCOP, ECOP, the BAC and Policy Board met with Sonny Ramaswamy and Bob Holland during the Joint COPS meeting to ascertain what was needed to strengthen the Initiative. Robin Shepard and Mike Harrington worked to address the stated needs. The document was transmitted to Sonny by Policy Board Chair, Jay Akridge on August 11, 2015 (see attached).

Water Impact Statements
As part of the advocacy effort for the Water Security Initiative, ESCOP and ECOP have been collecting important water-related impact stories that address the five Keystones of National Significance:

- Food and Agricultural Production
- Environment and Ecosystems Services
- Energy Production
- Human Health and Safety
- Community Vitality

Colleges were also asked to enter new water-related impact statements into the national Land-Grant Impacts database (https://landgrantimpacts.tamu.edu/). In response to this request, the B&L committee received 18 responses from experiment stations and 44 impact stories. These submissions

have been sent to Faith Peppers who is working with other communications specialists to develop unified stories that demonstrate impact at the national level.

New Budget Initiatives and Strategic Marketing

A subcommittee led by Saied Mostaghimi created a Strategic Marketing Campaign document as a generic template to guide future initiatives such as the Water Security Initiative. At the same time, BAC Chair Jay Akridge requested that the ESCOP and ECOP Budget and Legislative Committees develop a process document to guide the development of new initiatives such as the Water Security Initiative. Mike Harrington led this effort, engaging the B&L committee members. Both documents contained common as well as unique elements and it was decided to combine these two related documents into a single working document that can be used as a procedural best practices guide for new or existing budget initiatives. Both Budget and Legislative Committees have provided comments, and the final unified document is attached.

Joint ESCOP-ECOP Budget and Legislative Committee discussions.

A breakfast meeting of ESCOP and ECOP members was held during the Joint COPs meeting. Both Chairs participate in the respective committee conference calls. It was agreed that the committees should remain separate but coordinate their activities, bringing together the unique perspectives from each committee. To that end, a joint ESCOP-ECOP Budget and Legislative Committee meeting is being planned for the AHS-CARET meeting in late February-early March 2016.

BAA Process for Advancing New Budget Initiatives

Over the last several years, considerable effort was invested in two budget initiatives: Crop Protection/Pest Management and Water Security. The concept of addressing issues of great importance as described in the Water Security Initiative gained broad support of the Board on Agricultural Assembly (BAA), and at least some traction at U.S. Department of Agriculture National Institute for Food and Agriculture (USDA-NIFA). Several valuable lessons were learned through these processes including:

- Communicating with a unified voice,
- Engaging topical experts in developing white papers,
- Vetting white papers at various levels including the Extension Committee on Organization and Policy (ECOP), Experiment Station Committee on Organization and Policy (ESCOP), the Budget and Advocacy Committee (BAC), and the Policy Board of Directors (PBD),
- Enumerating expected outcomes and impacts,
- Articulating how the initiative adds value to the potential funding agency's programs
- Involving the Executive Directors and Administrators (EDAs) in facilitating initiative development from the beginning to end

At least two years of lead time are needed to get an initiative "in the queue" for consideration by a federal agency. Every effort must be made to have federal partner(s) engaged in the white paper development process. The process, from idea to white paper development and approval, must be completed at least two years in advance of efforts to include in a federal budget request. In addition, it is essential to define important components of the advocacy campaign in order to establish a generic framework or checklist for future campaigns.

Finally, it is crucial that there is formal communication of the final initiative from the Policy Board of Directors to the specific federal agency Director, other appropriate agency officials, as well as distribution to BAA members and other partners.

Issue Identification/Workgroup Development Steps

1. Identify the big problem: What is the big issue of the day that can be addressed by the Land-grant University System using integrated approaches? (Ideally only one issue would be selected to avoid potential mixed messages.)
2. Vet idea with Sections, BAC, BAA, other Boards, and other groups as appropriate.
3. Vet idea with Cornerstone for feasibility.
4. BAC charges formation of workgroup (WG) with scope of work to include white paper development.
5. Deans and AES/CES Directors and Administrators identify WG members who agree to participate.
6. Workgroup is created with the assistance of the EDAs; current Section Chairs serve as co-chairs.
7. EDAs facilitate communication among partners and regions.

White Paper Development and Content

With the assistance of the EDAs and Section Chairs, the WG develops a white paper through an iterative process. The white paper:

- Clearly identifies the issue or situation and frames it in terms of its importance to a broad base of stakeholders nationwide.
- Identifies the needs, goals, and objectives of the initiative.
- Summarizes current efforts on the issue and identifies gaps.
- Identifies expected outcomes and impacts that would result from implementation
- Articulates tangible benefits to be realized by the public.
- Specifies time frames for milestones.
- Describes how conditions will change.
- Indicates how the initiative will add value to the federal agency's portfolio.
- Articulates implications of failing to take action.
- Identifies budget information/implications (a mix of capacity and competitive funding with a larger portion of the funds provided on a competitive basis in support of integrated activities).
- Includes a logic model.
- Includes an Executive Summary.

Approval/Endorsement Steps

Once the WG completes what it considers to be a final draft of a white paper, that document is circulated and approved/endorsed as follows:

1. Endorsed by Section Budget and Legislative Committees
2. Endorsed by Board on Agriculture Assembly Committees
    a. Budget and Advocacy Committee
    b. Committee of Legislation and Policy, if necessary
3. Endorsed by Policy Board of Directors

Internal Communications

EDAs and university communications specialists work with kglobal and Cornerstone to develop messages that will resonate with targeted individuals/groups. EDAs work with kglobal to develop aesthetically pleasing one-page briefs that succinctly encapsulate and highlight the primary conclusions of the white paper.

Communications to Federal Agency

After approvals, the Policy Board Chair formally distributes the white paper to the specific federal agency Director (e.g. NIFA) and other appropriate agency officials and partners. This communication is done by both electronic means with return receipt and registered mail.

The white paper is also distributed to all members of the BAA, Deans/Directors who, in turn, distribute to their faculty/staff as appropriate.

Strategic Communications Campaign

A strategic communications campaign is developed and designed to generate support for the proposed approach detailed in the white paper. A steering committee is authorized by the BAC and PBD and identified by the Deans, AES, and CES Directors. The steering committee is responsible for coordination of the strategic communications campaign, including responding to questions, communicating with the interest groups, engaging in social media platforms, and providing news releases.

In partnership with Cornerstone, the Steering Committee will develop a timeframe for "the ask" and for generating buy-in from appropriate individuals, groups, and organizations. Kglobal will be engaged to develop a communications strategy that builds effective messaging by launching a media campaign, coordinating the process, and reaching out to elected officials.

Design an effective communications strategy:

- Consider who needs to be involved in the communications network and at what time or stage of the campaign. It is critical to communicate early on and involve federal agencies in the discussion (e.g., USDA-NIFA, NIH, etc.).
- Identify the target audience(s).
- Develop a complete inventory of stakeholders/coalition members (including affiliations and contact information).
- Identify people/organizations that may not necessarily support the issue and work to gain their support.
- Develop a broad and diverse cross-sector advocacy coalition that includes commodity groups, producers, industry, citizens, universities, NGOs, and politicians as appropriate.

Design a complete plan of action:

- Develop a statement of vision/goal/strategies and actions for the campaign.
- Create a campaign "brand" (name the issue) to help easily communicate to a broad audience (e.g., "We will cure cancer.").
- Identify specific milestones, outline a timeline for achieving milestones, and who is responsible for achieving them.
- Develop a range of educational materials targeted at specific audiences.
- Create a mechanism to provide/receive feedback.
- Monitor progress and modify approach as needed.

From: Akridge, Jay T. [mailto:akridge@purdue.edu]
Sent: Wednesday, August 12, 2015 5:58 PM
To: slack.36@osu.edu; jimmy.henning@uky.edu; Harrington,H. Michael <Michael.Harrington@colostate.edu>; robin.shepard@ces.uwex.edu; imaw@aplu.org
Subject: RE: National Initiative on Improvement of Water Security Update

Thanks to all for the work on this....we will see where it goes...

Jay Akridge
Glenn W. Sample Dean of Agriculture
Purdue University
Ph: 765-494-8391

From: McClure, Dinah L **On Behalf Of** Akridge, Jay T.
Sent: Tuesday, August 11, 2015 9:48 AM
To: sonny@nifa.usda.gov
Cc: slack.36@osu.edu; jimmy.henning@uky.edu; Michael.Harrington@colostate.edu; robin.shepard@ces.uwex.edu; imaw@aplu.org
Subject: National Initiative on Improvement of Water Security Update
Importance: High

To:
Dr. Sonny Ramaswamy
Director
National Institute of Food and Agriculture
Via email: sonny@nifa.usda.gov

From:
Dr. Jay Akridge
Chair, Board on Agriculture Assembly and
Glenn W. Sample Dean of Agriculture
Purdue University

On behalf of the Board on Agriculture Assembly, I am pleased to provide you with updated materials on the National Initiative on the Improvement of U.S. Water Security proposed by the Land Grant University community. This update, prepared by members of the Water Security Working Group, addresses issues raised in the NIFA-written response as well as those discussed during our recent meeting in Providence, RI. You will note that the additional materials include expected outcomes and impacts, as requested. Most importantly, the Water Security Initiative proposed by the Board on Agriculture Assembly provides a framework in which to coordinate the various water activities that are funded by NIFA.

Please note that as you requested, we have included quantitative outcome metrics in the document where appropriate. We consider these a first draft at developing quantitative metrics and would appreciate the chance to discuss these metrics further with you and your team before they are finalized.

Finally, I have attached the Water Security Initiative report and the Executive Summary that were provided to you earlier.

Thank you for your consideration of this important initiative. Please feel free to call Robin Shepard (office 608-890-2688 or cell 608 358-8768); Mike Harrington (office 970-491-6280 or cell 970-420-1309) or me (office 765-494-8391 or cell 765-414-8359) if you need further information after reviewing the document. The Land Grant community appreciates our partnership with you and your team at NIFA.

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8/10/15

Expanding **and** Developing New Approaches to Water Security

Further discussion on the National Land Grant Initiative to
Improve of U.S. Water Security by the nation's Land Grant Institutions

A compelling reason to act:

Agriculture sits at center of a host of 21st century water challenges ranging from the impact of farm practices on our waters, to not having enough water to grow crops and livestock. Agriculture is coming under increased scrutiny about its role in water security and human health. Recent attention to drought and wild fires in the Western U.S. are one example. Meanwhile in the other sections of the county, especially the Midwest and South, nutrient loading combined with heat waves and extreme runoff events generate blue green algae blooms that result in beach closures and loss of drinking water sources. Local ponds and reservoirs are increasingly unusable and urban residents in the Great Lakes have witnessed large scale hardships, including physical illnesses, due to loss of quality drinking water. Algae blooms are also implicated in the increasing widespread generation of harmful drinking water contaminants, like chloroform, that result from byproducts of disinfectants combining with organic matter.

Now more than ever, the US farm community is demanding a response from USDA. Bill Myers, president of Ohio's Lucas County Farm Bureau was recently quoted in the Detroit Free Press, July 29, 2015:

> *"I am tired of hearing hypotheticals on where things are coming from. We need to know for sure what areas are contributing, and target the highest levels with the quickest response. I don't care which ones we identify, [but] being able to treat this water so people can drink it is the No. 1 task."*

Land Grant Institutions have a systematic network of expertise, on-going research, campus-based instruction, and strong community/county-based responses through agents and educators that are all well positioned to work on challenges associated with water security. Land Grant Institutions are able to go beyond site-by-site fragmented projects and link local needs to our capacity on campuses and in communities.

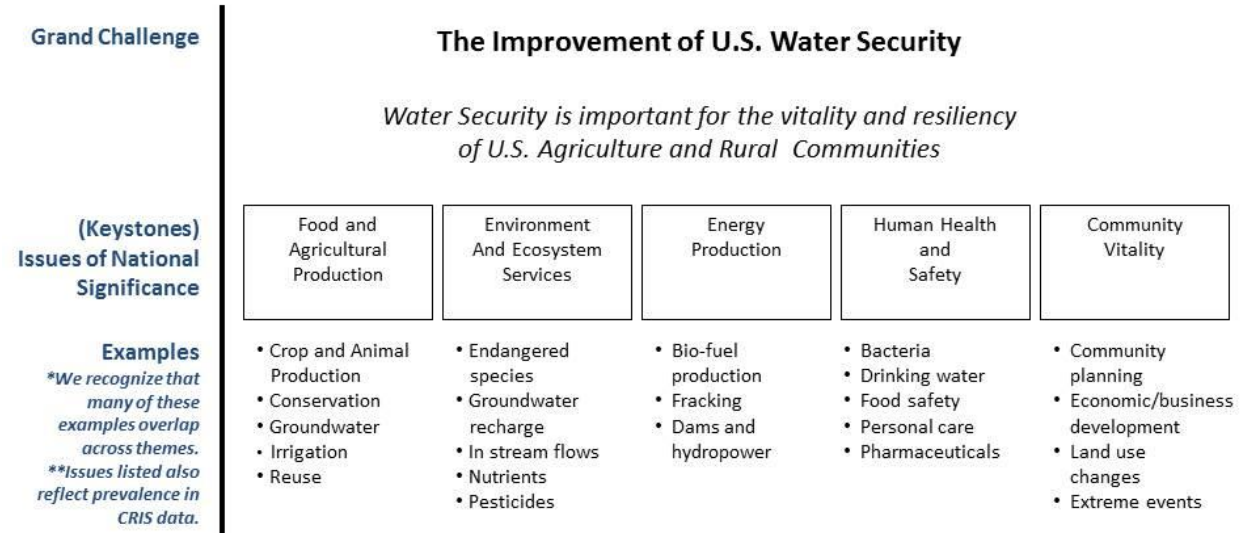
This water security initiative will increase collaboration within and among our Land Grant Institutions as part of a collective national response. As outlined it maximizes our existing institutional resources, leverages where appropriate with others, and expands what we do to meet emerge issues. This initiative addresses current and emerging needs by expanding the current expertise and infrastructure of our national Land Grant network – a network that is well positioned to respond -- but currently overstretched.

An invigorated Land Grant/NIFA partnership can address these challenges:

The National Water Working Group produced recommendations for expanding and enhancing new approaches to protecting water security in the U.S. [*please see full report from August 2014*]. To further document the need for such bold steps by the nation's Land Grant Universities and Colleges the following is a more detailed explanation of what steps would be taken if funded.

The National Water Working Group identified National Issues of Significance (Figure 1) which represent current and emerging threats to U.S. water security. These issues are primary drivers for future research, teaching programs and extension-outreach to communities. Addressing U.S. water security interests will require substantial investment in new/additional funding.

Figure 1. National Issues of Significance.



The Issues of National Significance greatly influence how Land Grant Universities need to organize their expertise and the way they should offer community assistance through research, teaching and Extension. This national water security initiative increases support so our Land Grant University can meet both current and emerging needs described in the Issues of National Significance by enhancing their capacity. **The Working Group report calls for $100M (annually) in new/additional funding [Table 1] to be allocated across the five Essential Elements. [PLEASE SEE FULL REPORT FOR A COMPLETE EXPLANATION OF HOW ESSENTIAL ELEMENTS FOSTER IMPROVED RESPONSES, EFFICIENCY AND COLLABORATION AMONG LAND GRANT INSTITUTIONS.]**

Table 1. $100M/year National Water Security Initiative

Essential Element		
#1. State/Institution-based Coordination	$4M	Fixed costs
#2. Regional Water Centers	$6M	Fixed costs
#3. Integrated Regional Water Grants	$45M	50% of competitive funds
#4. AFRI National Grants	$36M	40% of competitive funds
#5. Instructional Grants	$9M	10% of competitive funds
TOTAL	**$100M**	Annually - for a minimum of five years.

About Table 1. Fixed Costs versus Competitive Funding.
Fixed costs are essential investments required to support the expertise and services of Land Grant Institutions as they expand their efforts to address water security. These are basic costs that occur, regardless of funds associated with short-term projects

(commonly supported by grants). These costs are presented as static/fixed because they are necessary for on-going activities (ranging from program/project/curriculum development to administrative coordination). This support ensures integration among and between Agricultural Experiment Stations (AES) and Cooperative Extension Services (CES). **The Working Group recommends the first $10M in any new/additional funds be dedicated to meet these needs. The Working Group also recommends that the $10M amount in fixed costs should not decrease even if the funding for competitive programs is less than described ($90M).**

The following describes each of the National Issues of Significance in terms of the primary problems, and links those priorities to where Land Grant Universities are best positioned to make a difference by expanding current efforts **and** developing new approaches across research, teaching and extension.

Food and Agricultural Production

Water insecurity is threatening our ability to maintain agricultural production at a time when increased world population pressures suggest we must increase production. While gains have been made in irrigation efficiency that have resulted in increased yields, adoption of these technologies and the information needed to manage them has been lagging. Agriculture is on the cusp of a new era of increased production using environmentally responsible technologies. There is an urgent need to assist in this transition to information based management systems that uses big data, earth mapping, earth monitoring systems and other internet based technologies to increase water use efficiency, manage water systems and reduce water quality concerns. These technologies are currently spawning new methods of addressing water quality and conservation issues through "precision conservation" techniques that target programs to those areas with the greatest production, environmental stewardship and economic impacts. These new technologies will be even more important as irrigated and rain fed agriculture adapts to more variable climate conditions in our future. In addition, poor groundwater management across the nation is threatening future water supplies. Our Land Grant Institutions need to promote irrigation efficiencies, increase yields and help our communities better manage all of their water supplies.

Specific actions provided by this initiative will include:

- Adoption of advanced irrigation technologies and the information and management tools to effectively use them. This includes: increasing the development and adoption of precision conservation technologies and techniques; adaptive planning to account for interactions between surface waters and groundwater recharge; and the use of big data, earth mapping, earth monitoring systems and other internet based technologies. *GOAL: In five years, increase acreage under precision irrigation (target - over 1 million acres).*
- Work with growers to adopt sustainable management systems for surface and groundwater that recognize their interconnection. This would support: the creation and implementation of sustainable groundwater and surface water management plans; increased use of aquifer recharge strategies to increase groundwater storage and build drought resilience; and increased reuse of agricultural and urban waters, including agricultural runoff, urban stormwater runoff, treated urban waste water and others. *GOAL: In five years, increase aquifer recharge in targeted river basins (target - at least 10 major basins will increase recharge by 10 percent).*
- Increasing soil health through techniques such as no-till and addition of soil amendments such as compost to increase water holding capacity and soil tilth in ways that will sustain our agricultural systems and increase yields. *GOAL: In five years, increase acreage under no-till systems (target – over 5 percent increase in acreage).*
- Creation and adoption of drought resilient plant varieties in irrigated and rain fed agricultural systems.
- Decrease animal product water footprints through more water efficient feed production, feed formulation, and selective breeding.

Environment and Ecosystem Services

America's agricultural and rural lands serve as the water source for downstream lakes, rivers and estuaries –but more intensive production from existing agricultural lands is sought if we are to meet the demands of a growing world population while retaining natural ecosystems. Melding these two visions of agriculture and rural lands represents one of the major challenges of the 21st century. Improved nutrient use can accelerate production, but runoff from poor management of cropland and animal agriculture fosters harmful algae blooms that cause beach closures and fish kills from ponds in the Midwest to the Great Lakes and the coasts. Irrigation is a key component that will enable stable and high levels of agricultural productivity but poor management threatens fish migration, spawning and nursery habitats. We are poised to make major advances that will provide safe and plentiful water from agricultural and rural lands.

Specific actions provided by this initiative will include:

- Innovative, rapid crop and soil tests combined with advances in cropping systems and nutrient management can reduce offsite losses and enhance production.
- Locally-based watershed assessment that rely on new, high resolution geospatial data can target "hotspots" of nutrient losses and identify and enhance ecosystem niches, such as riparian zones and beaver ponds that purify runoff waters. *GOAL: In five years, improve the efficiency of conservation and restoration investments in targeted watersheds (at 12 digit HUC level).*
- New water sensors are now available that provide real-time data on river, lake and estuary water quality and advance our capacity to pinpoint the effects of timing of agricultural practices on nutrient losses. These data are poised to be translated into risk reduction practices.
- New management practices such as edge of field bioreactors are now being optimized for nitrogen control on drained cropland and innovations are ongoing to promote phosphorus reductions. *GOAL: In five years, increase the use of edge of field bioreactors (target – installation of field bioreactor on 500,000 acres of drained cropland).*
- Advances in geospatial data, high resolution modeling and new agro-forestry practices can now promote strategic restoration of headwater habitats through riparian buffers and elimination of instream barriers.
- Advances in irrigation water management through the use of improved technologies, computer mapping, and state-of-the-art sensors can be combined with improved understanding of critical flow periods to sustain important fisheries.

Energy Production

Extreme events such as the current Western drought directly affect both agriculture and the energy sector, often putting these two critical sectors in competition for scarce water resources. According to the U.S. Geological Survey's 2010 report, 45% of US water withdrawals are for thermoelectric power generation and 37% are attributed to agriculture. As such, much of the problem and solution to water availability and water quality lie within these two sectors. However, the economics of energy production are such that agriculture cannot compete in the marketplace with the energy sector for water supplies. The recent movement of irrigation water to hydraulic fracturing demonstrates this tension graphically. Additionally, our food system is a large consumer of energy. About 30% of the global energy demand is used for the full food production and supply chain. In the U.S., use of energy along the food chain has increased more than six times the rate of increase in total domestic energy use between 1997 and 2002. Aside from food transportation and processing, significant energy use occurs in the pumping of irrigation water. According to the USDA-ERS, over 30% of the US corn crop is used for ethanol production. Collectively, these facts make it abundantly clear that energy and water are intertwined in our food

system and that research and extension programs are critically needed to address these linkages for a secure food supply – both domestically and internationally.

Specific actions provided by this initiative will include:

- Provide new methods, technologies, water efficiency and water sharing strategies to reduce/optimize agricultural water and nonrenewable energy use. *GOAL: Over the next decade, decrease excessive irrigation application (target - 56 million U.S. irrigated acres by decrease by an average of one acre-inch over the next decade); GOAL: Increase the use of renewable energy in agriculture (target - 10 percent increase in renewable energy by those participating in program activities).*
- Develop algorithms and optimization strategies to use the right water in the right place and time. In many cases energy production can utilize marginal waters and effluents from Ag systems, in other cases Ag can utilize waste waters from energy. *GOAL: In five years, increase the use of treated effluents and marginal water (target - 1 million acre feet).*
- Develop biofuels production systems that produce more energy with lower water and energy inputs. *GOAL: In five years, maintain current biofuel production levels, decrease water and energy use in producing biofuels (target - 15 percent less water in biofuel production).*
- Provide US crop and livestock producers with timely data and information to improve decisions on energy and water use to balance the tradeoffs that occur with these critical inputs. *GOAL: Develop and manage open source data and modeling platforms that provide needed information on water use, water quality, soil, climate data, crop growth, carbon stocks at a 12 digit HUC level to enhance producer decisions.*

Human Health and Safety

The safety and security of our nation's food and water supply is of paramount importance to individual and community health. We must understand and communicate the inherent risks and uncertainties in the complex food-water system. Advanced research and extension programs can create and disseminate the knowledge necessary for producers and consumers to take appropriate actions to ensure the long-term safety and continued productivity of our food and water systems.

Specific actions provided by this initiative will include:

- Nationwide, increase the number of private well owners who test and protect their private wells. New extension programming also will provide critical education resources for private well owners to ensure the safety of their drinking water in the aftermath of extreme events and natural disasters (e.g., flooding, coastal storm surges). *GOAL: In the five years, increase the number of private well owners who test their water and take steps to protect their private wells (target - over 100,000 private well owners will test their drinking water).*
- New research that examines the occurrence, fate, and transmission of waterborne contaminants – specifically pathogenic bacteria and pharmaceuticals that could impact food safety (fruits, vegetables, and shellfish).
- Establishing trans-disciplinary research and extension teams that address both food safety and water quality protection. These teams will help to solve the complex and interrelated issues that impact the safety of the nation's food supply. Gathering and communicating interdisciplinary-based information will help communities make balanced and informed decisions.
- Studying and communicating the impacts of water quality management practices on potential contamination from domestic and wild animals, contaminant persistence in irrigation tailwater, sediments from irrigation, and sediment control structures. For example, vegetable growers report finding themselves in an untenable position—pressured to *minimize* the use of on-farm conservation practices that promote water quality in order to address concerns of food safety

professionals. *GOAL: In the five years, nationwide, a growing number of farms will develop food safety plans (in response the Food Safety Modernization Act) that balance soil and water conservation with food safety concerns (target - 50,000 farms will develop food safety plans and implement them to some degree).*

- Analyzing the role of agricultural landscapes in groundwater recharge and conjunctive water management with an emphasis on drinking water supplies. Transparent information about local, regional, and national groundwater use will be made available.

Community Vitality

Water security is important for long-term economic growth and community vitality in our cities and rural communities. This link between water and community vitality is very strong and transcends merely protecting water security solely through biophysical and remediation means.

For a community to be vibrant – it must be resilient to drought, floods and potential contamination events. Communities need support from Land Grant Institutions that foster wise and appropriate decisions over protection and enhancement of water resources. Likewise, when the water resources are secure it leads to a greater sense of quality of life through improvements in public health, local economies, water-related recreation, tourism, and aesthetic appreciation. When water has greater value as a public asset it helps that community improve its sense of place and identity. Water is part of a community's basic infrastructure, and therefore for a community to be healthy and vital it must be secure.

The vast Land Grant network of academic expertise is ultimately anchored locally by extension professionals with the ability to attack problems by working with local decision makers and cities on programs involving comprehensive community and land use planning, economic/business development, public health, and preparing for decisions faced during unexpected natural events (e.g., flood, wild fire, drought, and climate variability). This is the heart of addressing water security and community vitality.

<u>Specific actions provided by this initiative will include:</u>

- Improve quality of life indicators (measures) that most closely align with water security. These include: protecting economic prosperity; engaging citizens in decision of public and individual rights over water use and protection; addressing social and leisure interactions with water; ensuring water availability for basic human needs such as human health and food production; and meeting the needs of sustaining natural resources. *GOAL: These quality of life indicators (measures) will become components to national impact reporting on CES and AES water programming (and will be reflected in https://landgrantimpacts.tamu.edu/).*
- Increasing community/citizen involvement in local decisions about water quality and quantity by supporting watershed councils and citizen advisory processes. Programming will support citizens with training and leadership programs that foster community-based decisions about water quality and quantity and natural resources (ranging from water quality issues such as non-point source pollution to water quantity and drought management). *GOAL: In five years, out programs will expand the number of citizens who take part in training and leadership programs (target - more than 100,000 citizens will take part in these programs and subsequently assume leadership roles in their communities).*
- Increasing use of science-based information by community-, state- and multistate-based group that made decisions about water quality and quantity. This will include: community-based planning involving the management of water and natural resources; and assisting a community in its

"readiness" to address unexpected natural events (this would integrate and expand the current limited reach of programs such as EDEN).

- Assisting communities in their efforts to create and retain jobs directly dependent upon water resources. *GOAL: In five years, increase support jobs creation and/or retention in areas associated with water security protection (target - than three (3) million will be impacted – created and/or retained).*
- Provide training programs for professional water resource managers that will: improve the management of water treatment facilities; develop and implement new technologies for testing and treating public drinking water; encourage collaborative land management among producers/growers in headwater regions and communities/municipalities; and support public education through extension programming on water conservation. *GOAL: In five years, increase the number of water professionals will take part in training and professional development programs [in some states this may involve University-based certification programs] (target - more than 7,000 water professionals will be trained).*
- Mobilizing partnerships, especially those where the community-based expertise of our Land Grant Universities is well positioned to link and facilitate those connections. *GOAL: Program leveraging will multiply the federal funding by three-to-one (3:1). Meaning, for every dollar invested by USDA/NIFA three additional dollars in state/local support will be offered by partners and collaborators.*
- Engaging broad interest in helping our communities understand and respond to issues of water security.
- Engaging young people in efforts to enhance water security. *GOAL: In five years, engage more youth in programs supported by this national water security program (target – more than one (1) million youth will take part in programs and activities associated with this water security initiative).*

Why Invest in Water Security – Because National Issues of Significance Merit Expanded Attention:

There has been a continual decline in the level of competitive grant funding available for water resource projects over the past thirteen years. In 2002, the three flagship grant programs that NIFA used to fund water projects were the National Integrated Water Quality Program (NIWQP), the National Research Initiative (NRI) Water Program, and the Small Business Innovation Research (SBIR) Program (Soil, Air, and Water Section). These three programs combined to fund a total of $15.1 million in grants in 2002. In 2014, the NIWQP, SBIR, and the Agriculture and Food Research Initiative (AFRI) Water for Agriculture Challenge Area combined to offer $10.6 million in grants. With the termination of the NIWQP in 2015, the expected total grant awards from SBIR and the AFRI Water for Agriculture Challenge Area will combine for $9.3 million. The net result is a loss of 40% in total (annual) funding over the past thirteen years (not adjusted for inflation).

The National Water Working Group developed recommendations based on the need to **both** expand current efforts and to foster new systematic approaches to protecting water security in the US. Just as in other major societal advances, agriculture must reinvest in efforts to protect our waters. We must consider the existing investment in the national Land Grant Institutions and how to best focus that expertise. This isn't about recreating and/or duplicating current efforts, it is about expanding and enhancing new approaches, all the while taking advantage of the institutional expertise that is already in place. There is a strong case for a national water security initiative -- water and agricultural security are in an age where population projections continue to grow and food production needs to closely follow. If we do not act it will lead to a water-agriculture crisis that demands critical attention far above and well

beyond existing investments which are struggling to address and meet the needs of today's broad array of critical issues.