# Overview of the United States University-based Public Cooperative Extension Services

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Agriculture is increasingly a knowledge- and information-intensive industry. As such, there is an important public good element to the support of the agricultural sector. Accordingly, for more than a century, the public sector in the United States has invested heavily in agricultural research, agricultural education, and agricultural extension. This chapter discusses the origin, nature, and evolution of public sector support for these endeavors, particularly on public support for agricultural extension.

Agriculture, and the need for public support for agricultural extension, have evolved a great deal over the past century—and the private sector has emerged as an essential source for many aspects of agricultural knowledge and information. However, the public sector continues to provide substantial support to agricultural extension. The role of publicly-supported agricultural extension in the United States is summarized on the Cooperative Extension Section page of the website of the Association of Public and Land-grant Universities (APLU) in the following way:

"Extension provides trusted, practical education to help people, businesses, and communities solve problems, develop skills, and build a better future. Campus-based faculty members are disciplinary specialists with doctoral degrees whose primary responsibility is to develop curricula that translate science-based research results into language (written, verbal, and electronic) appropriate for targeted audiences. County-based educators (most of whom have graduate degrees) work with local citizens and interest groups to solve problems, evaluate the effectiveness of learning tools, and collect grassroots input from prioritizing future research. By living and working in communities, county educators respond to local needs, build trust, and engage effectively with citizens. Program Areas include but are not limited to 4-H Youth Development, Agriculture, Family & Consumer Sciences, Health and Nutrition, Community Development, Water and Natural Resources, Forestry, Emergency Preparedness, Climate Variability, Volunteerism, and Human Sciences."[6]

Publicly supported agricultural extension in the United States is wholly owned by the states (not the federal government). Extension in each state is based in, and managed by that state's land-grant university (LGU) or several LGUs. For most LGUs, the director of Extension reports to a Dean or a Vice President. Although publicly supported agricultural extension is a program of each LGU, funding for each state's agricultural extension system comes from a variety of sources, typically including, among other things, funding from federal, state, and county governments. Of these funding sources, the state government is the most important in most, if not all, states. While public agriculture extension in the U.S. is state-owned, a collaboration among all the state services, and support from the United States Department of Agriculture (USDA), have led the collection of state extension services to be seen as a national US Cooperative Extension System.

The state-owned, university-based structure of the US Cooperative Extension System is unique compared to public agricultural extension programs in other countries. Most public agricultural extension systems around the world (with some exceptions) are the province of national (not state or provincial) governments and, correspondingly, are typically situated within national ministries of agriculture rather than within agricultural universities. Further, agriculturally oriented universities worldwide are most often situated institutionally

[6] https://www.aplu.org/members/commissions/food-environment-and-renewable-resources/board-on-agriculture-assembly/cooperative-extension-section/

within national ministries of education. They often have only modest if any formal engagement with public agricultural extension.[7]

How did general agricultural extension in the United States evolve so differently from other nations' public agricultural extension systems, even though it was the first national agricultural extension system? Public agricultural extension in the United States grew out of many 19th century local and state initiatives to create state-based higher education institutions that harness science to serve agriculture's practical needs and demands. A series of federal acts (discussed further below) provided support and a certain level of structure for these state and local initiatives. In their association with each other and with the support they receive from USDA, the state agricultural extension systems form a globally unique national system, consistent with the country's political structure of strong state governments.

## 1.0 History of Agricultural Extension Service in the United States

At the beginning of the 20th century, the earliest public-sector-supported agricultural extension efforts were linked with then-fledgling Agricultural Experiment Stations (AES) of the LGUs. Agricultural research offices and demonstration fields were created during the last two decades of the 19th century by the States (with support from the national government) and their young public agricultural and mechanical colleges. During the first years of the 20th-century, these agricultural and mechanical colleges conducted field days at local (often on-farm) venues. By 1905, states were experimenting with establishing county Extension offices funded by their state and local governments.

The modern US extension system is the product of LGUs' institutional innovations with fiscal support from their states and counties. USDA and the US Congress did not create this system, rather it was created by the States themselves. Still today, public agricultural extension services in the United States are state-owned and reside only at LGUs.

The institutional innovation to create public agricultural extension programs and situate them within LGUs was born simultaneously (and to some extent independently—state by state) at the 19th and early 20th-century LGU colleges. In 1914, the US federal government began to provide financial support to these state-owned initiatives. In 1887, the US Congress passed the Hatch Act that provided federal funding for applied research that advanced local agriculture to the States, with accountability for these federal funds to the LGUs overseen by USDA (The Hatch Act of 1887 | National Institute of Food and Agriculture, 2018). Later, in 1914, the US Congress passed the Smith-Lever Act that provided federal funding, overseen by USDA, supporting the emerging LGU 'university-based Extension services' (The Smith-Lever Act of 1914, n.d.). Examples of late 19th-century field days and the first county Extension offices are in Iowa.

"In 1906, the Iowa Legislature enacted the Agricultural Extension Act making funds available for demonstration projects. It is believed this was the first specific legislation establishing state extension work" (Extension Service: A Historical Perspective | Dubuque County, Iowa, n.d.).

In summary, both LGU AESs and Extension services were initiated by the states and their farmer and rancher constituencies.

The Smith-Lever Act provided federal funding support for the emerging state-owned LGU Extension services. These funds required federal funding to be matched by the States. Since 1914, Smith-Lever Act

[7] This country chapter focuses on publicly-supported university-based agricultural extension. Public agricultural extension is only one part of the overall agricultural advisory service universe in the US—private and not-for-profit agricultural advisory services are also important. Discussion of these services outside of the public elements of the US Cooperative Extension System will be developed in follow-up stages of NAAAN's Mapping Exercise.

created an enduring federal government, state government, and LGU university partnership to support Extension programming. Accountability for LGU expenditure of federal government funding, but not for State and local funding, rested with USDA. This federal accountability mandate eventually provided the incentive for all the LGUs to work together in delivering standardized reports on their use of Smith-Lever Act and Hatch Act funds. Developing standard reports to USDA was in the LGUs and USDA's interest. It provided an early incentive to create a national organization for collaboratively developing programs and standardization of reporting. The States and their LGUs created extension services in collaboration with their AESs to disseminate knowledge and information (including the results of practicable agricultural research) to farmers and ranchers. A typical early form of collaboration among LGUs was sharing AES and Extension Bulletins among their libraries.

The seemingly rapid emergence of LGU AES and extension services was the product of the United States' 19th-century local and national level interests in creating knowledge that could improve agricultural production and productivity. US LGUs are the product of a national commitment to science and public higher education teaching, research, and engagement/outreach. This 19th-century push for higher education and science was embedded in an emerging national cultural belief that the creation and dissemination of knowledge produced wealth and social prosperity.

The national coordinating association of LGU extension services is the Extension Committee on Organization and Policy (more on ECOP below). This is an administrative platform managed by the LGUs as they collectively standardize their typical relationship with USDA. Today, USDA continues to oversee the expenditure of Smith-Lever Act funds. USDA works collaboratively with the LGUs on this, and, together, USDA and the LGUs report to Congress. In turn, the LGUs lobby (in part, through APLU) for continued Congressional funding for USDA's partnership with the LGUs for Smith-Lever Act funds and AES Hatch Act funds.

## 1.1 19th Century science, technology, and public universities

Mid-19th century America was a divided nation, one so divided that the most cataclysmic event in its history, the Civil War, nearly broke it. It also was a time when America was alive with European visions of science and technological innovations driving industry and improving agricultural production. The US was greatly influenced by emerging European science, particularly in agriculture. As in Europe, US science emerged unevenly and regionally. It was driven by intellectual challenges to rationally understand nature and apply natural laws to the economy and the creation of wealth.

Roger L. Williams' (2018) biography of Evan Pugh, one of the visionaries in the creation of the agricultural and mechanical colleges (LGUs) and first President of what is today Pennsylvania State University, offers a detailed account of Pugh's commitment to institutionally establishing science as a foundation for public higher education. Williams' biography of Pugh emphasizes the importance of higher education in Europe as an example for agricultural and mechanical colleges in the US. Vermont Congressman Justin Morrill was the most recognized American visionary to advocate creating public colleges that advanced scientific knowledge and applied education for progressive farmers. His vision championed production enhancing agricultural and mechanical sciences. He and other visionaries saw applied science as the key to diffusing knowledge and technologies (https://www.psupress.org/books/titles/978-0-271-08017-8.html).

Two principal challenges for late 19th century US agriculture were declines in agricultural productivity due to 'soil exhaustion' and the need for improvements in animal husbandry. Congressman Morrill's vision was well known among highly decentralized local scientific societies throughout much of the nation. These small voluntary science societies amounted to a national social movement that advocated for the applied benefits

of scientific farming. They were community-based science education organizations. Many were very familiar with science research and development at US elite private universities and the globally leading European universities. These agricultural societies would become key local advocates for county Extension offices during the first quarter of the 20th-century. Roger Williams' history of establishing what became Penn State University is an excellent historical account of these types of local science societies in mid-19th century Pennsylvania (Williams, 2018).

Congressman Morrill's vision prior to the Civil War was that of a partnership between the federal government's proposed Department of Agriculture, on the one hand, and the state governments, on the other hand, to support the creation of agricultural and mechanical colleges that would educate agriculturalists in advancing the 'arts' of farming. These public colleges were conceived to be the 'people's universities.' Only later, toward the last quarter of the 19th century, was applied research added to this federal-state government partnership with the Hatch Act (1887). Another half-century later, the federal government supported new agricultural extension services with the Smith-Lever Act (1914).

On May 8, 1862, as the US Civil War intensified, President Lincoln signed Congressional legislation that established the USDA (USDA Celebrates 150 Years, 2012) (https://www.usda.gov/our-agency/about-usda/history). On July 2, 1862, President Lincoln signed the Morrill Act (https://today.tamu.edu/2020/07/02/the-morrill-act-still-has-a-huge-impact-on-the-u-s-and-the-world/). Created within weeks of one another, USDA and the LGUs have co-evolved together.

## 1.2 20th and 21st Century's Continued Development of LGU Extension

Social institutions can be judged by their resiliency over long periods. In most States, Extension was at the beginning comprised primarily of county agents located in county-funded offices. LGU Extension services were local from the start. By this measure, locally-based Extension services are remarkable 19th and early 20th-century institutional responses for public agricultural research and disseminating this research through local offices. Extension has been nimble enough to continue to serve almost all counties in the US for more than a century. This suggests some institutional agility to remain relevant in supporting an evolving agricultural sector and in incorporating new communication technologies, including 21st-century social media. There also are noticeable stresses. Extension started as locally-based university outposts in both rural and urban areas. Presently, Extension continues to be locally anchored with considerable local financial support. An American political adage is that 'all politics is local.' Extension's political resiliency over more than a century is tightly connected to its embeddedness in and responsiveness to changing local conditions.

Throughout the 20th-century and into the 21st-century, communities and the agricultural sector have undergone significant economic and social changes. Extension has been an important factor in instigating change in both domains—economic and social. Extension has also weathered and adapted to significant challenges and even criticism from within the LGUs. LGUs have evolved from relatively small agricultural and mechanical colleges to globally recognized research and teaching universities. World War II, the post-war expansion associated with the GI Bill, massive Cold War investment in university research, and the second rapid increase in scale caused by the baby boom produced qualitative changes on LGU campuses (1945–1995). Among these university institutional dialectics has been the simultaneous expansion of non-agricultural academic colleges and the priority for faculty research. Yet, phenomenal episodic growth experienced by many parts of the LGUs during this period was uneven for Extension and other LGU outreach and engagement functions. These programs have not expanded as rapidly. If budgets are indicators, support for Extension has receded as a university priority (see the section on Sources of funding for public agricultural extension below). The last decade of the 20th-century and the first two decades of the 21st-century were periods of fiscal stress for all US public universities (and for the Extension function within them). For

example, State contributions to in-state student tuition shifted to the student, which has created concern for access to public higher education.

USDA's research portfolios, including the National Institute of Food and Agriculture (USDA-NIFA), expanded greatly through most of the 20th-century as Congressional funding for agricultural research increased. Since then, however, publicly funded agricultural research plateaued and then declined so that today publicly funded agricultural research measured in inflation-adjusted dollars is now below 1980's levels. However, privately funded agricultural research has grown steadily and surpassed public funding. Correspondingly, the nature of the research conducted under public funding has become more focused on topics that have public goods attributes (i.e., issues that the private sector is less likely to explore in their research activities). Just as publicly funded agricultural research at LGUs has declined, AES's applied research and extension's outreach have not kept pace with the nation's other investments in science. In contrast, private sector applied research and development, and corporate 'outreach' has increased, providing many of the functions once only available from the extension.

Public agricultural extension focuses on public good areas and has morphed as many of its earlier services are assumed by the private sector. In earlier years, public agricultural extension featured a strong focus on-farm productivity and profitability. With the growth and modernization of the farming sector, the focus of public agricultural extension has featured a stronger emphasis on topics such as natural resource management, resiliency and mitigation of climate change, nutrition, and other issues that fall under the rubric of public goods —while much of the advice available to farmers concerning productivity and profitability is increasingly available from private sector advisors.

At the beginning of the 21st-century, the Association of Public and Land-grant Universities (APLU) identified public higher education challenges for the new century. In a series of publications entitled 'returning to our roots,' university engagement and outreach were highlighted as a mission-critical challenge for all public universities (Returning to Our Roots, Kellogg Commission, n.d.). These reports singled out public universities' service to their citizens for particular attention. The report on The Engaged Institution provided constructive advice for university-wide outreach and engagement, including LGU Extension (Returning to Our Roots: The Engaged Institution (February 1999), n.d.) (https://www.aplu.org/library/returning-to-our-roots-the-engaged-institution).

Today, university-wide engagement has received much attention, if not significant new resources, from governing boards and senior administrators. This public university social movement to enhance engagement is both an opportunity for Extension and a challenge for equal status within their universities with research and teaching missions. This section touches on the significant characteristics of LGU extension and its many enduring partnerships and challenges (Journal of Community Engagement and Scholarship, 2022, Volume 14, Issue 3) (https://digitalcommons.northgeorgia.edu/jces/vol14/iss3/).

LGU extension and AES have had a collaborative partnership with USDA historically. While USDA does not have its own extension service (unlike most ministries of agriculture worldwide), it does have excellent research facilities. USDA's Agricultural Research Service (USDA-ARS) and Natural Resources Conservation Service (USDA-NRCS) are federal agricultural and natural resource research institutions. Until the last decade, USDA-NRCS even had regional offices providing outreach services for conservation programs. NRCS also oversees USDA environmental programs, including reporting on-the-ground compliance by farmers receiving financial support for participating in federal conservation programs.

LGU extension services does not have regulatory functions associated with USDA programs or state programs.[8] This is in contrast to many public agricultural extension programs worldwide that do have a role in enforcing a variety of government regulations and other policy-related functions.[9] This is a significant difference between the US extension system and many other nations' extension services. LGU extension services are primarily focused on university engagement and outreach. US extension programs are not complicated by the additional function of enforcing government regulations.

Both USDA and LGUs have extensive research facilities. Since World War II, US universities have greatly expanded their research portfolios, including agriculture and natural resources. LGU AESs conduct both basic and applied research but are historically focused on the practical application of science to the specific needs of their states.

Funding for LGU extension services is primarily dependent upon their State and Counties. Smith-Lever funding as a percentage of total individual LGU funding for Extension fluctuates between 8% to 15% (varies by state, county, and non-government revenue such as grants and contracts). The US Congress, via USDA Smith-Lever funds, establishes requirements for fiscal accountability and support of Congressional mandates for these federal funds. USDA's Research, Education and Economics (USDA-REE) division oversees Smith-Lever funding through its National Institute of Food and Agriculture.

This partnership between the federal government (Congress and USDA) and the States and US Territories LGUs' is unique among nations. This is the only solely university-based extension system globally. While typically representing only a small proportion of LGU Extension budgets, Federal Smith-Lever funds provide significant incentive for LGUs to follow Congressional mandates associated with Smith-Lever Act funds. US LGUs have considerable political support within their States and with their Congressional delegations (House of Representatives and Senate). Consequently, LGUs have provided significant political support for USDA research, teaching and outreach programs.

Another unique characteristic of US LGU extension is their youth development 4-H programs. What eventually became 4-H was birthed at LGUs to meet demands for isolated rural youth programs to develop science-based and practical training in agricultural practices and civic responsibilities and leadership. It is impossible to overstate the importance of LGUs co-creating their university-based extension service and their youth development 4-H programs. They emerged together, symbiotically.

## 2.0 Organization of Land Grant University Extension services: national and regional associations

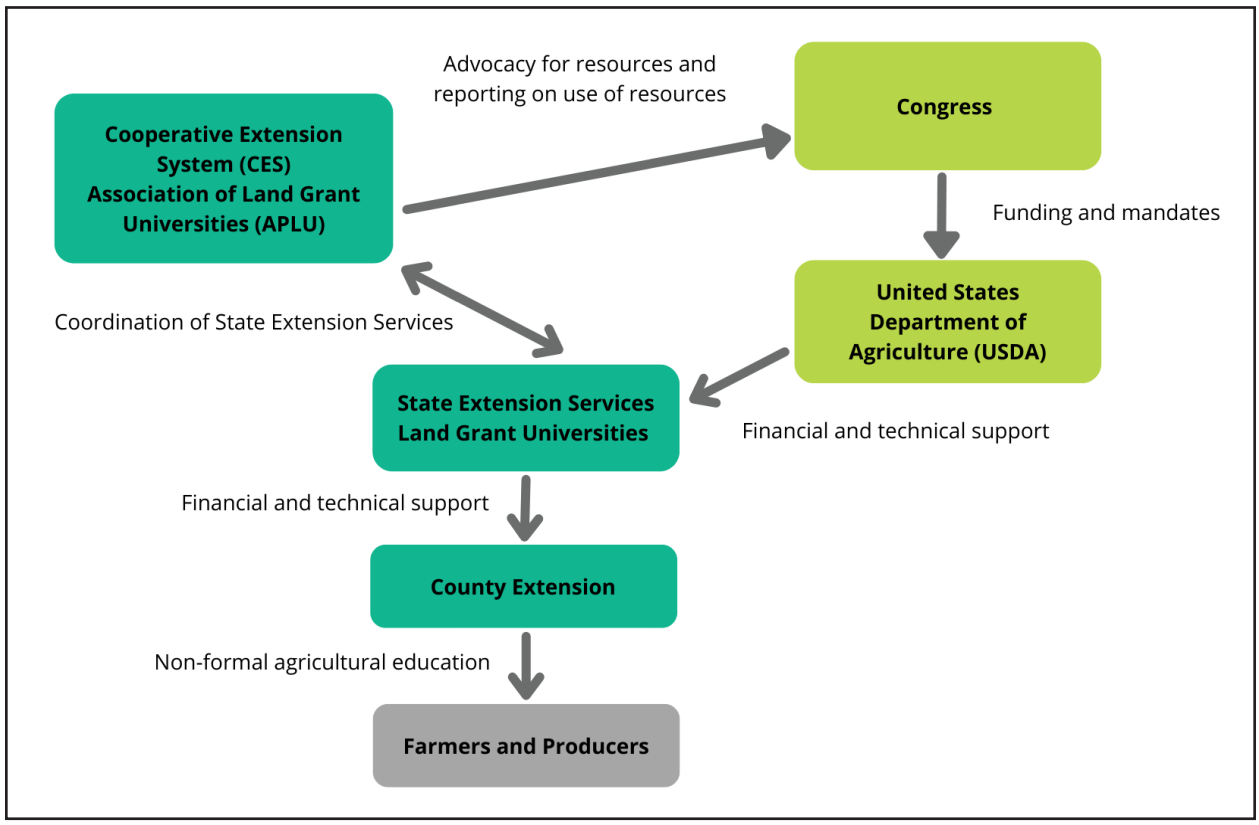
Today, US LGUs benefit from the visions and organizational investments, and structures of their 19th and 20th-century predecessors. Over the past century, LGUs intentionally developed a highly functioning network of collaboration and unified voice for their partnership with USDA and, even more importantly, among themselves. The historical path to its current national organization, ECOP, was episodic, formalizing over time collaborative functions and voting on how they taxed/assessed themselves to support national priorities. This is like the principle of subsidiarity noted above. The national structure took on functions that individual LGUs or even regionally associated LGUs could not accomplish independently. In this way, extension's national system is the product of continuing emerging discussions among its member LGUs.

[8] While extension does not have regulatory functions, it may be responsible for providing education related to the regulation. For example, although extension does not have a role in implementing federal or state pesticide regulations, extension does provide guidance to stakeholders regarding such regulations and also imparts knowledge pertaining to safe use of pesticides.

[9] For example, in many countries public agricultural extension agencies have been tasked with implementation of subsidization of agricultural inputs (such as seed and fertilizer). Such arrangements have often been seen to create a conflict of interest for both extensionists and for farmers themselves.

ECOP, as noted above, is part of the US Extension Service at the national level and does not have the authority to govern any of its members' universities' Extension programs, but there is a strong organizational commitment to all 112 of them. This is a 'complex' system that even insiders seem to find unusually difficult to fully understand. An organizational chart for the Cooperative Extension Services which is situated at APLU can be found online: https://www.aplu.org/members/commissions/food-environment-and-renewable-resources/organizational-chart.html. A simplified diagram of the relationships between farmers, local extension programs, the States and LGUs, APLU/CES, and USDA and Congress is provided below. The US LGU's national 'system' is very diverse, representing a punctuated evolution mirroring some of America's worst and best moments. This system rests on the accomplishments and failures of those who came before. It is a decentralized group of loosely similar colleges and universities that work with USDA to sustain a university-based coalition before Congress.

Figure 1
**Key elements of the U.S. Extension System**




Source: Provided by the authors.

Within their universities, extension services are administered either as a college-level unit reporting to an academic Dean (Colleges of Agriculture) or as a university-wide division reporting to the Provost or President.[10] In most states, AES and extension have statutory status as official state agencies. As state agencies, extension services are more than a division within their universities but also are divisions of State government. Presently, a national system of collaboration and collective action in agricultural extension among the US LGUs is situated at the national level in the Cooperative Extension Section within APLU. This

[10] At the 1890 LGUs, heads of extension services hold the title Associate Extension Administrator or Extension Administrators while at the 1862 LGUs, heads of extension services hold the title Extension Directors or Associate Dean of Extension.

Cooperative Extension Section is situated within the Board of Agricultural Assembly, located within APLU's Commission on Food, Environment, and Renewable Resources (CFERR).

As noted above, the Cooperative Extension Section at APLU is self-governed by the Extension Committee on Organization and Policy (ECOP) (https://www.aplu.org/members/commissions/food-environment-and-renewable-resources/board-on-agriculture-assembly/cooperative-extension-section/). ECOP consists of representatives of LGUs that voluntarily contribute financially (based on a pre-World War II funding formula) and work within the general policies and organizations established by ECOP.

Three separate Acts of the US Congress (1862, 1890, and 1994) created three types of LGU universities and colleges. Today there are 112 Land Grant institutions, of which 19 are historically black universities and 33 are tribal colleges and universities. These 112 higher education institutions are a remarkable historical legacy of US commitments to higher education and to the struggle for inclusiveness of minority populations. This is a single system of LGUs.

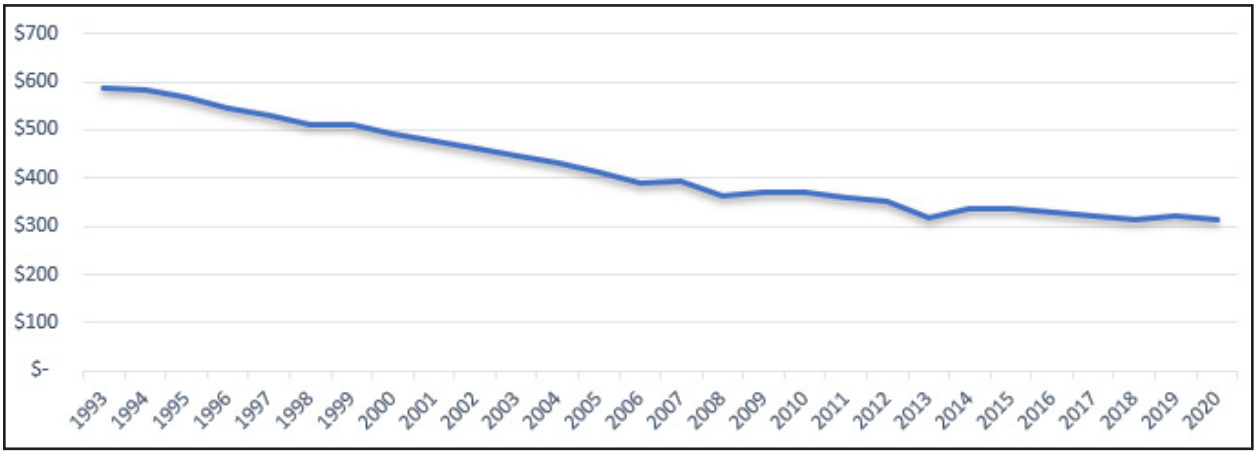
As noted above, the first Morrill Act of 1862 provided some federal funding for state-based colleges dedicated to the agricultural, mechanical, and military arts to establish a broader liberal education. These LGUs are unsurprisingly referred to as 1862 LGUs. In 1890, the second Morrill Act was established to provide Land Grant Universities for African American populations in the States that legally separated African and Anglo Americans (and prohibited African American attendance at the 1862 LGUs) via state-based segregation laws after the Civil War. This Act of Congress is one of the most visible examples of the failures of the post-Civil War period of Reconstruction to address the cultural, social, and political legacies of slavery, but also is an example of the resiliency and excellence of 1890 LGUs. This legislation led to 19 universities, primarily located in the former Confederacy and Border States. These LGUs are referred to as 1890 LGUs (Our History, n.d.) (https://www.1890foundation.org/history-of-land-grant-universities).

To create more equitable educational opportunities for underrepresented groups, Native American colleges were developed (Kowalkowski, et. al). In 1994, Congress established funding for Native American tribally controlled Land Grant colleges. This legislation belatedly recognized the sovereignty of Native American tribal governments and the importance of their tribal colleges. These LGUs are referred to as 1994 LGUs (1994 Tribal Land-Grant Colleges and Universities Program, n.d.). (https://www.usda.gov/partnerships/1994-program). In 2008, the Food, Conservation, and Energy Act authorized the establishment of a group of Hispanic-serving agricultural colleges and universities (HSACUs—not formally LGUs) to be eligible for NIFA Integrated Research, Education, and Extension Competitive Grants Programs (Hispanic-Serving Agricultural Colleges and Universities (HSACU) | National Institute of Food and Agriculture, n.d.). (https://nifa.usda.gov/hispanic-serving-agricultural-colleges-and-universities-hsacu)

## 3.0 Sources of funding for public agricultural extension

Federal, state, and county appropriations are critical elements sources of funding for Cooperative Extension—they are supplemented by a variety of other sources, including grants, service contracts, service fees, and gifts. For most states, funding from the federal level represents a relatively small part of the financing envelope for public agricultural extension. Federal funding for agricultural extension has steadily declined over time—see the figure below:

Figure 2
**Federal support for US agricultural extension (millions of 2020 dollars under Smith-Lever 3 b&c)**



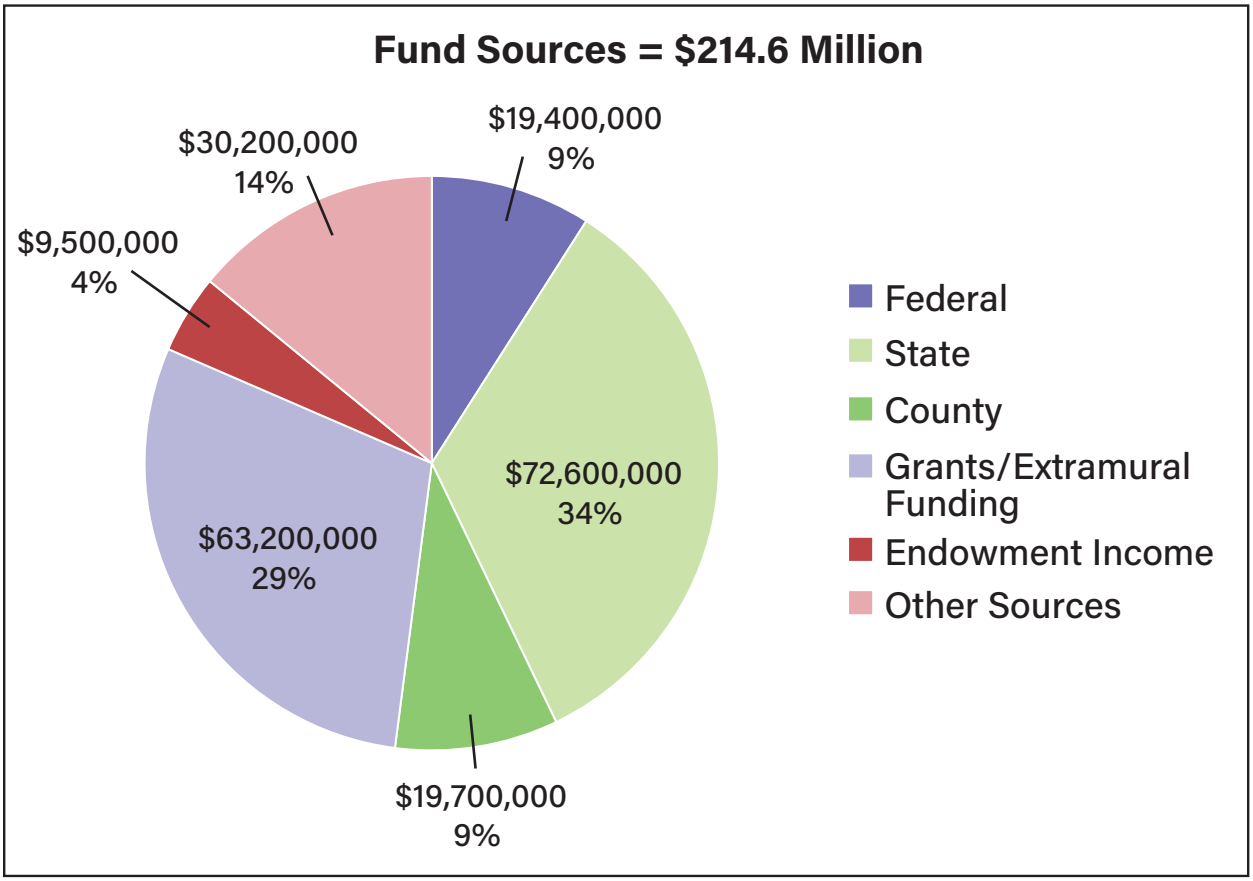

Source: APLU

Experienced observers suggest that federal support most frequently constitutes 5% to 15% of the financing available to state extension services for most state extension systems. Although comprehensive data about levels of state-level funding for public extension is not readily available, it is thought by system leaders that there has been a several-decades decline in such state-level funding. Instead of comprehensive data, several examples of how state public extension programs are financed are provided below:

## 3.1 Example: funding sources for public agricultural extension—the case of California

The University of California's Agriculture and Natural Resources Division's (UC ANR) mandate is to implement Cooperative Extension and related programs in California. UC ANR receives funding from several sources, including federal, state, and local governments (which account for roughly half of overall financing) and various other sources (see figure below).[11]

Figure 3
**UC ANR Fund Sources FY 2018–19**



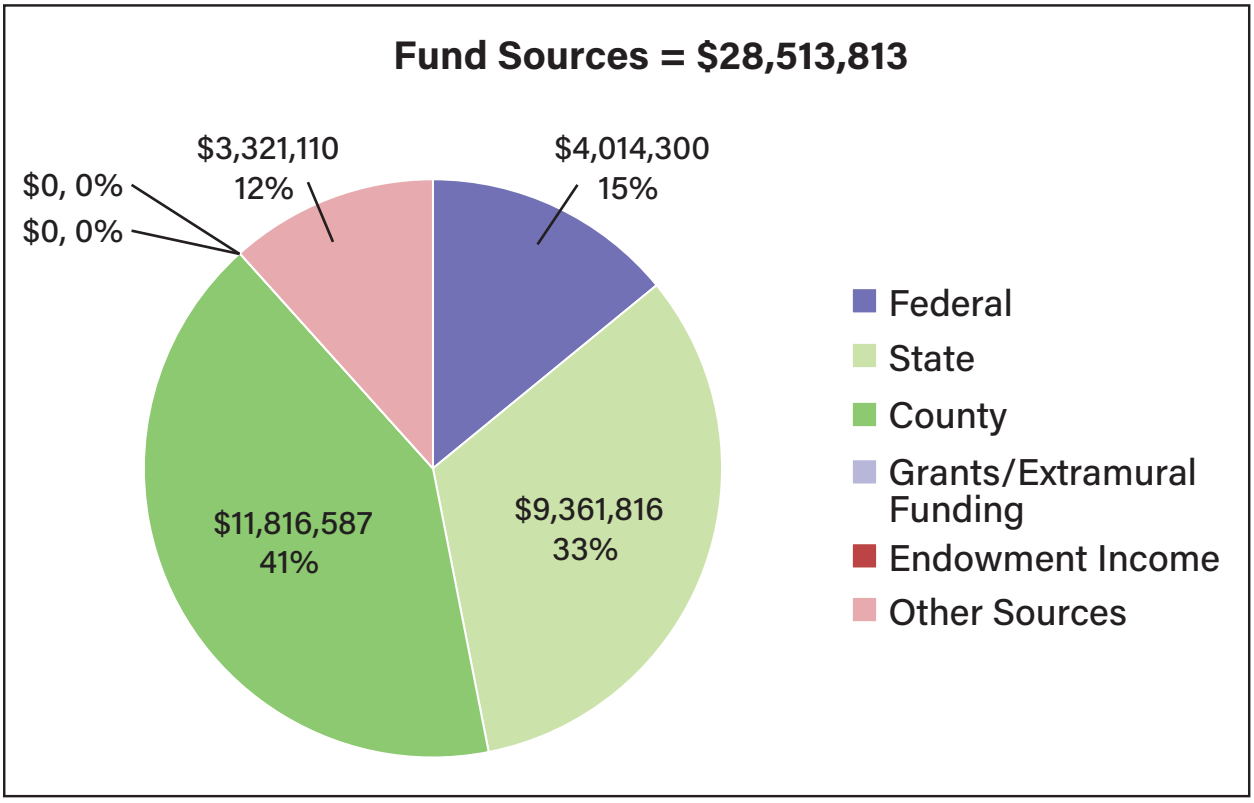

Source: UC ANR Annual Report (2019).

[11] As reported in a May 15, 2019 memo from the President of the University of California to the members of the University's Board of Regents.

## 3.2 Example: funding sources for public agricultural extension—the case of Colorado

The Colorado State University (CSU) Extension mandate is to implement Cooperative Extension and related programs in Colorado. CSU receives funding from several sources, including federal, state, and county funds governments and various other sources (see figure below).

Figure 4
**Colorado State University Fund Sources FY 2018**

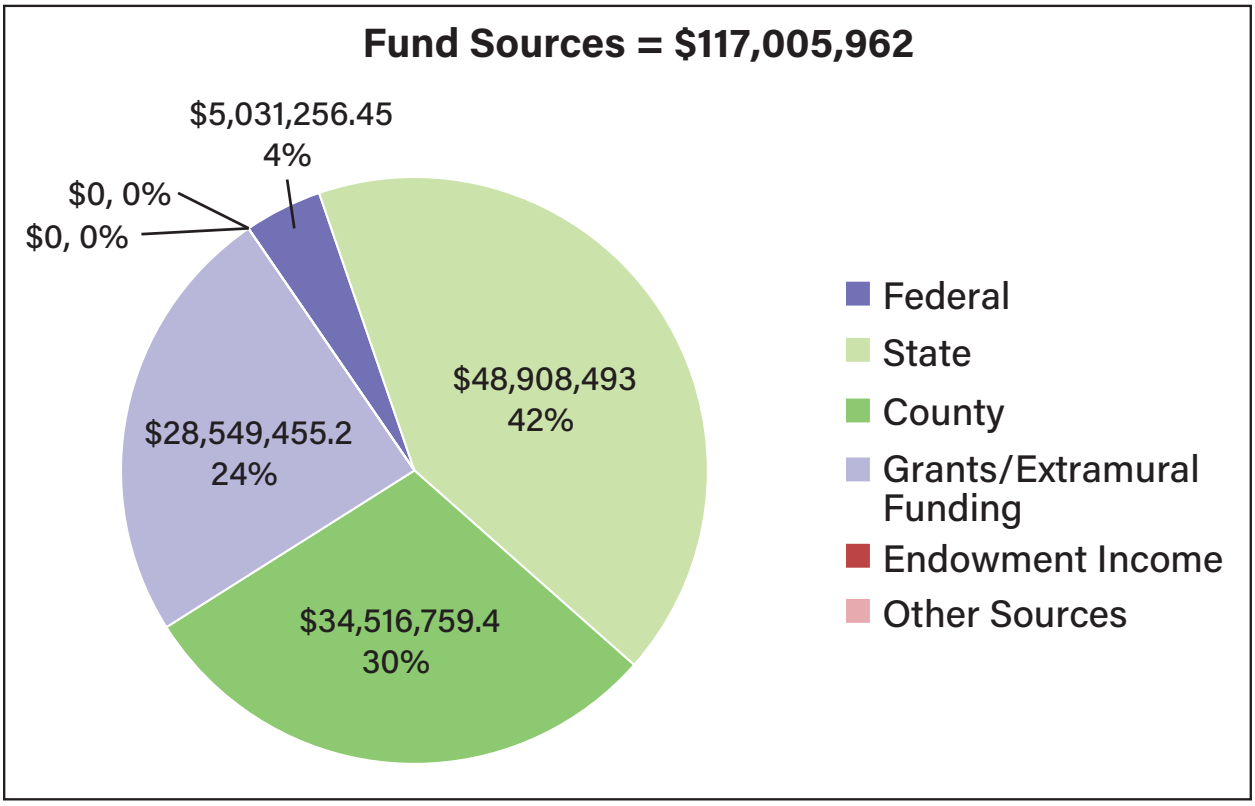



Source: Colorado State University Extension Annual Report (2018).

## 3.3 Example: funding sources for public agricultural extension—the case of Florida

The University of Florida (UF) Extension mandate is to implement Cooperative Extension and related programs in Florida. UF receives funding from several sources, including federal, state, county funds and grants, and extramural funding (see figure below).

Figure 5
**University of Florida Fund Sources FY 2020**

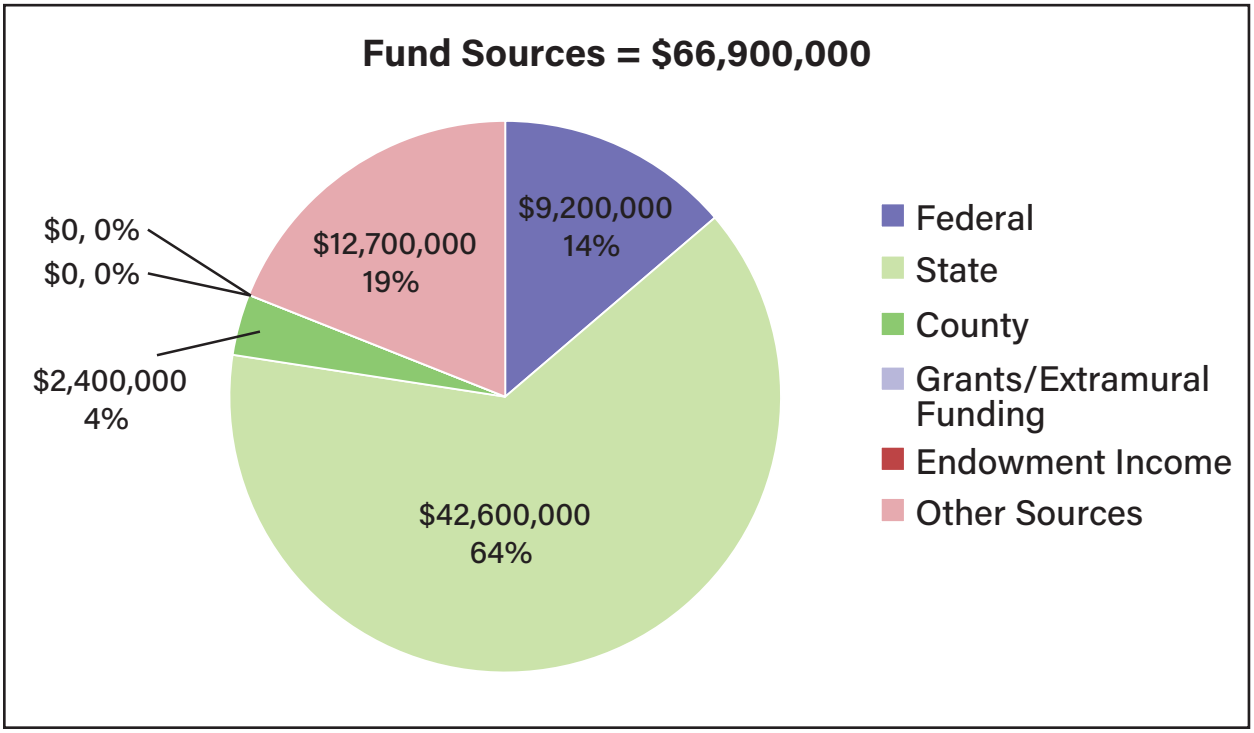



Source: UF/IFAS Extension Impacts and Budget Annual Report (2020).

## 3.4 Example: funding sources for public agricultural extension—the case of Alabama

The Alabama Cooperative Extension System mandate is to implement Cooperative Extension and related programs in Alabama. ACES receives funding from several sources, including federal, county, state, and other sources. More than half of ACES' budget comes from the state (see figure below).

Figure 6
**Alabama Cooperative Extension System Fund Sources FY 2020**

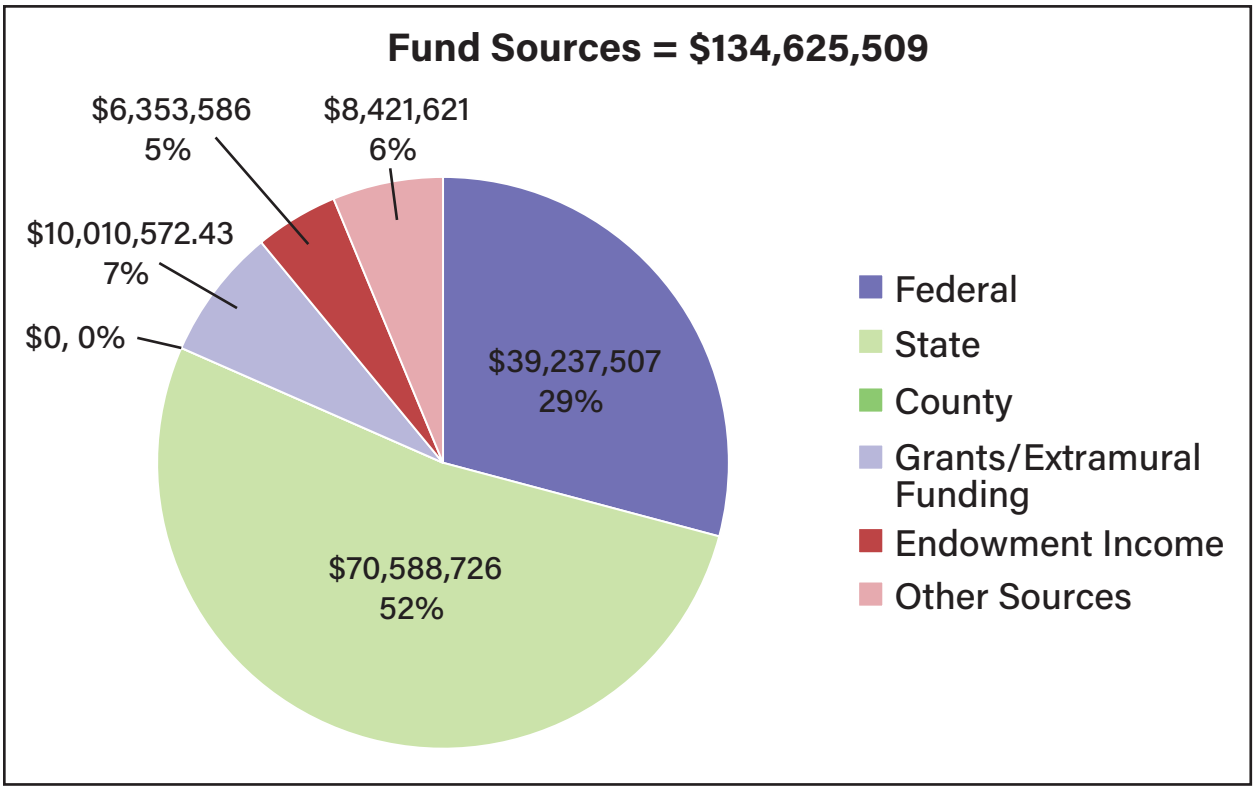



Source: Alabama Cooperative Extension System Budget (2020).

## 3.5 Example: funding sources for public agricultural extension—the case of Texas

Texas A&M AgriLife implements Cooperative Extension and related programs in Texas. This program receives funding from several sources, including federal, county, state, grants/extramural funds, endowment income, and other sources. More than half of this budget comes from the state and more than a quarter of funds come from federal funds (see figure below).

Figure 7
**Texas A&M AgriLife Fund Sources FY 2020**

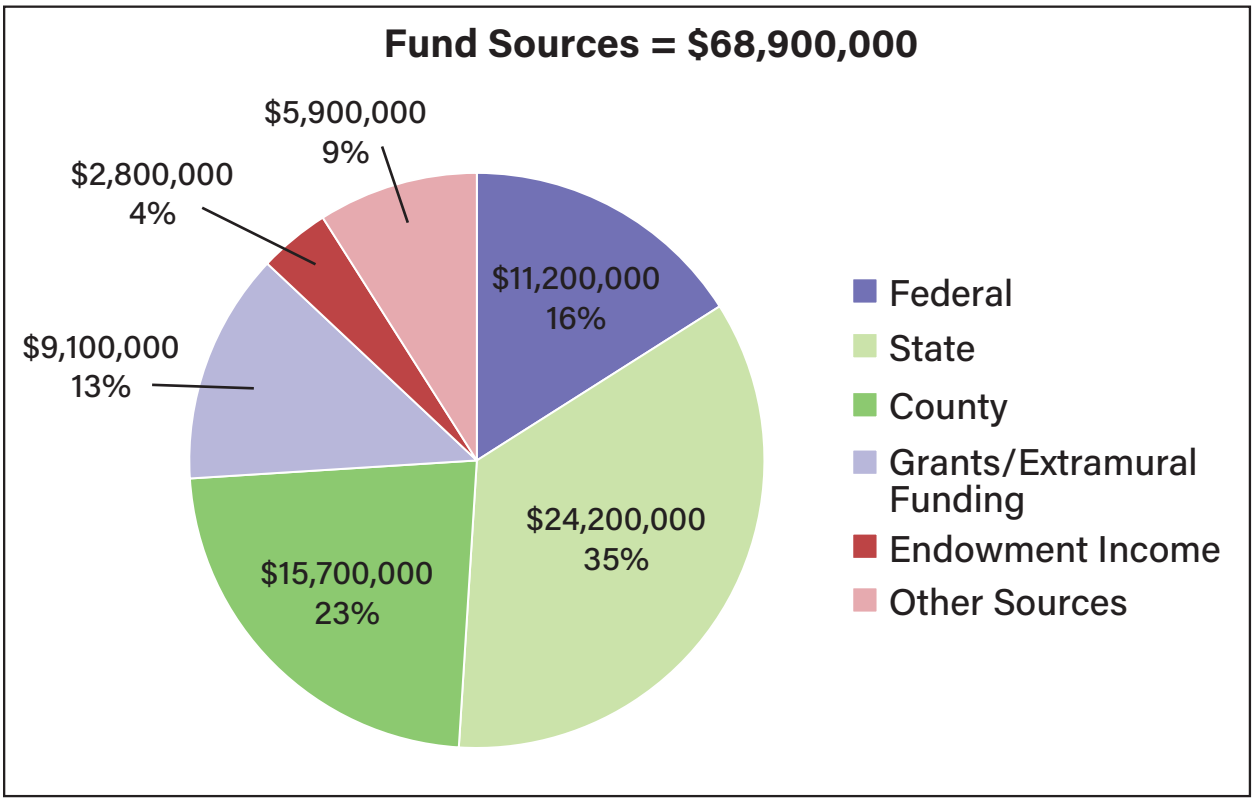



Source: Texas A&M AgriLife Extension Service Annual Financial Report (2020).

## 3.6 Example: funding sources for public agricultural extension—the case of Ohio

The Ohio State University Extension goal is to implement Cooperative Extension and related programs in Ohio. OSU receives funding from several sources, including federal, state, county, grants/extramural funds, endowment income, etc. 35% of OSU's budget comes from the state (see figure below).

Figure 8
**Ohio State University Fund Sources FY 2016**

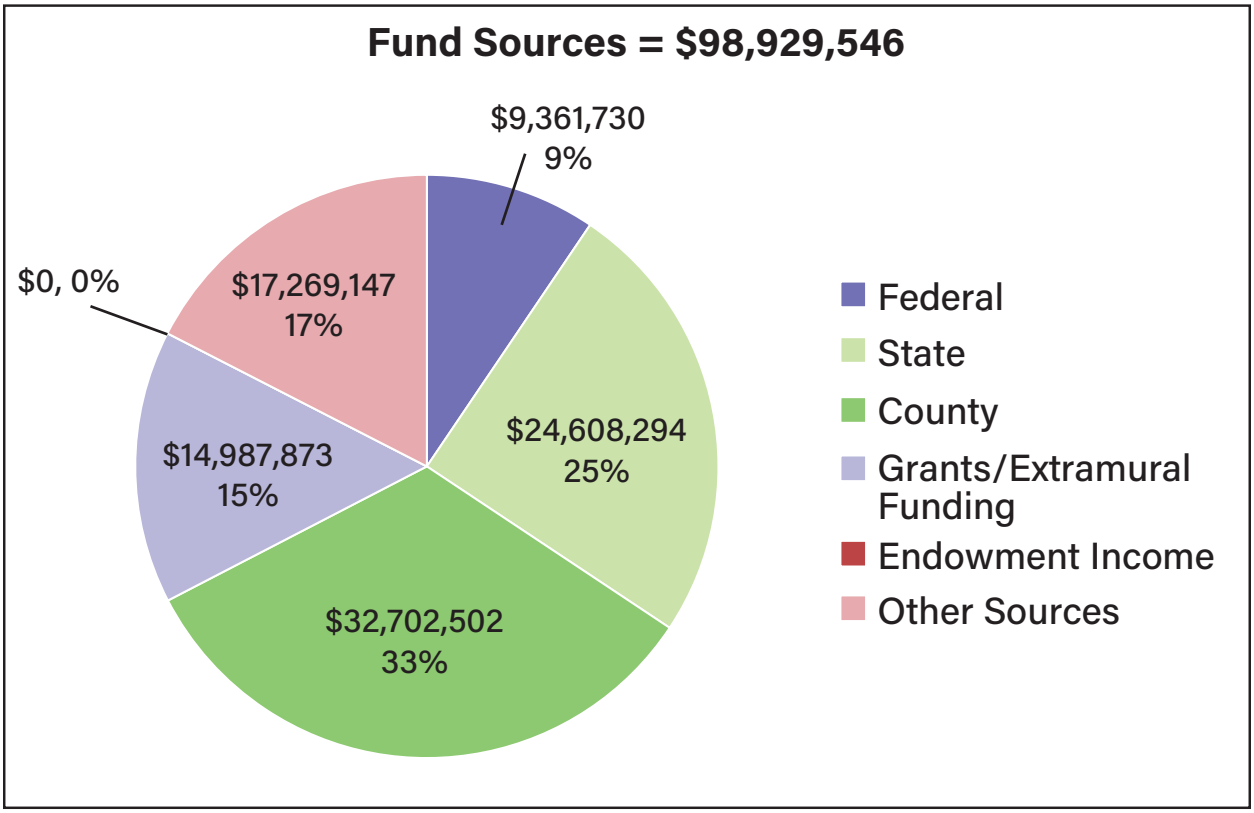



Source: Ohio State University Extension Annual Report (2016).

## 3.7 Example: funding sources for public agricultural extension—the case of Iowa

The Iowa State University program goal is to implement Cooperative Extension and related programs in Iowa. ISU receives funding from several sources, including federal, state, county, grants/extramural funds, and other sources. Thirty-three percent of OSU's budget comes from the counties (see figure below).

Figure 9
**Iowa State University Fund Sources FY 2014**




Source: Iowa State University Extension and Outreach Annual Report (2014).

## 4.0 The Organization of Extension Services within Land Grant Universities

The national LGU system is very decentralized. Land Grant Universities and colleges have as many administrative structures as there are LGU universities and colleges. As a result, there are many different internal university and college organizational structures and cultures—there is no single template for LGU administration.

Among 1862 and 1890 LGUs, Extension services are most often located with Colleges of Agriculture and Colleges of Human Development (many of the latter were once Colleges of Home Economics which have morphed into professionally-oriented colleges). Among these, Extension is administratively located in the College of Agriculture. There are twelve LGUs where extension is not found in a College of Agriculture. These extension services report directly to the university's Provost or President and have campus-wide program portfolios. So far, these 12 LGUs are not setting the trend, but they do offer examples of how Extension services located in a single college may develop broader, university-wide engagement among the other colleges and for the university as a whole.

As emphasized above, university-based Extension is locally embedded. Most state Extension services have university 'educators' or 'agents' living in or assigned to every county or parish. This is the most visible and essential feature of US university-based Extension services.

Again, Extension is primarily state and locally funded. From their earliest decades, LGU Extension has worked collaboratively with state and local government officials and with state and local advisory councils to determine program priorities and design individual program goals, strategies, and delivery platforms. These councils historically in rural areas have been composed of local farmers and ranchers, elected local officials, and a broad range of community leaders representing program areas such as youth development/4-H, environmental interests, and private sector supporters. Metropolitan Extension offices also include elected officials and community leaders supporting youth development and 4-H and community interests reflecting urban/metropolitan priorities.

There are as many variations in how agricultural extension is situated within their respective universities' organizational structure as there are LGUs. This website provides a diagram of how the University of Nebraska's agricultural extension program is positioned relative to USDA, Nebraska state government, and Nebraska's counties (Organizational Structure | Nebraska Extension, n.d.) (https://extension.unl.edu/organizational-structure/). While each LGUs has its unique structure, there are enough similarities among the LGUs that the University of Nebraska's example is illustrative of how extension services are typically situated within a college of agriculture. All US state extension services work closely with non-government organizations (not-for-profit), agricultural producer and consumer organizations, private for-profit agricultural advisory services, and federal government agencies.

As noted above, ECOP is organized into five regions (including a 'region' for 1890 LGUs). Within these regions, USDA/NIFA works with LGU AES and extension services to promote collaboration among the states' AES and extension services. This collaboration expands program capacity and impacts through interstate LGU sharing of talent and resources. Every region has a combined AES and Extension committee that oversees research and Extension program collaboration jointly funded by the states and USDA/NIFA. USDA/NIFA's oversight of Smith-Lever funding requires that at least 20 percent of these funds be dedicated to collaboration with other LGU Extension and AES services. This requirement both encourages and rewards multi-state LGU collaboration.

While Extension services in states with metropolitan areas historically have urban-focused programs, the 'urbanization' of Extension has accelerated during the past two decades. Urban Extension programming tends to be multi-disciplinary and often adds value to existing urban government and NGO programs. The

Western Center for Metropolitan Extension and Research is an example of LGU Extension services creating collaboration on metropolitan Extension programming and education (About Us | Western Center for Metropolitan Extension & Research | Washington State University, n.d.) (https://metroextension.wsu.edu/about-us/).

LGU youth development and education programs were established simultaneously and in concert with the creation of county Extension offices. US Extension services offer youth development their flagship youth development 4-H programs. These are county-based programs with state and national level collaboration. Youth development is a signature characteristic of all US Extension programs (National 4-H Council, n.d.) (https://4-h.org/about/leadership/national-4-h-council/).

Complementing and supporting U.S. Extension programs is NIFA's Regional Rural Development Centers (RRDCs). It was established in the Rural Development Act of 1972, the RRDCs support LGUs in building the scientific knowledge base needed to underpin education and extension programs in rural and community development. RRDCs also support agricultural advisors' professional development opportunities and educational programs to ensure high-quality, relevant, and timely technical assistance capacity and outreach for rural and community development. RRDCs have a long record of working partnerships with public and private entities toward common goals. In recent years, work with partners has expanded, promising sustainable rural and community development programs despite a period of fiscal austerity and scarce resources (https://nifa.usda.gov/regional-rural-development-centers/).

During the past two decades, ECOP has facilitated and supported the development of a highly sophisticated online platform by the Extension Foundation. This online institution is partially fee-based but also receives federal funding. While the Extension Foundation's programs are generally available to the public and all extension services, there are considerable additional benefits for universities that financially subscribe. During the past decade, the Extension Foundation has emerged as an online portal for rapid dissemination of information and as a platform for training agents/educators with just-in-time information (Regional Rural Development Centers | National Institute of Food and Agriculture, n.d.).

Additionally, the role of ECOP and the Extension Foundation has been strengthened in recent years through a new national level "Program Action Teams" (PATs). ECOP's standing program committee now includes PATs which uniquely enable engagement across all professionals in Extension aligned with ECOP's priorities for national funding with USDA-NIFA and beyond.

## 5.0 Looking forward: the continued utility and influence of university-based Extension in the US

The US Extension System is a reliable collaborator with agricultural producers in creating new knowledge, applying existing knowledge, working with producers and private sector companies, and in international collaboration. The basis of Extension's long-term utility for producers as well as environmental and consumer interests is at least three-fold. First, US university-based Extension services are grounded in the vast talent and educational depth of LGUs. Second, LGU Extension services are present in most US counties and have the capacity to both represent local interests to their campus colleagues and to adapt programs to local conditions. Third, US Extension services have access to and partner with yet another vast talent pool situated at USDA. Locally based and focused services of US Extension do not exist independent of their universities and function best when collaborating with USDA and the widely diverse interests of their communities and states.

US Extension services are direct representatives of and enablers of their universities in their collaboration with state and local governments. They have been a source of and the facilitator of technological and organiza-

tional innovations since their inception in the opening years of the 20th century. Yet, US Extension services are experiencing diminished funding over recent decades, and their access to the talent within their university continues to be narrow. Like all US higher education institutions at this time, they are struggling to sustain their fiscal resiliency and to broaden their programs to include cross-campus non-agricultural colleges. These are complex institutional challenges that Extension likely cannot manage internally alone. US Extension will benefit from renewed fiscal partnerships with USDA, their state governments, and most importantly, the sustaining fiscal commitments of their communities. These are not insurmountable challenges.

Extension's institutional configuration of being simultaneously state-owned, locally funded, and university-based and in direct collaboration at the national level with other LGUs (APLU and ECOP) and USDA makes the US's Extension services unique in comparison to other public extension programs across the world. As agricultural, food, and rural sectors evolve, the need for Extension will expand in both scale and scope. LGUs can develop and extend their Extension services' engagement and outreach capacities. Where Extension services are administered by a single college, LGUs can facilitate their becoming university-wide without harming existing programs and constituencies (Reed and Swanson, 2022). Extension can be a university-wide platform for regional and local engagement, including leadership in developing applied transdisciplinary educational, research and engagement programs (JCES special issue, 2022).

Correspondingly, the US Extension system's collective core institutional mandates can expand in focus and in the pragmatic modalities employed. For example, state and national programs can include more attention to the relationship between agriculture and nutrition, climate change, management of biohazards, and youth development, among other global and local challenges (Martin and Steele, 2022). An increasing imperative for universities and the diffusion of knowledge is expanding open science and open data to broaden the evidence base available to Extension educators (Woteki, 2022).

Figuring out the myriad paths for the US Extension system toward these goals once again will benefit from their collective discourse and sharing of best practices—something ECOP and APLU have done well over the past two decades. Importantly, their home institutions, including their own LGU, can incorporate county offices' local and regional implementation platforms into their interdisciplinary and transdisciplinary teaching and research portfolios. Orchestrating the development of Extension services requires innovative and creative reflection—and associated investment and capacity building. Rather than fumbling with the rigidities of strategic planning, LGUs can take advantage of their Extension services application of 'strategic doing.' And finally, and importantly for NAAAN, US Extension can profoundly benefit by directly and collaboratively working with their Canadian and Mexican counterparts. There are infinite possibilities in both this North American collaboration and globally with other Extension and rural advisory services.

It is to these challenges that follow-up discussions and reports will very usefully turn. Among the most interesting aspects of the reflection that will be required will be an examination of how the university-based structure of the US Extension system might facilitate the design and implementation of the evolution that is to come—ttempting to be more proactive than reactive. This process will be watched with great interest by the community of practice on extension (and beyond) across the world.

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