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THE UNIVERSITY'S ROLE IN BUILDING SUSTAINABLE AGRICULTURE AND RESILIENT COMMUNITIES

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Abstract

Historically, while the U.S. extension model is recognized globally, countries building extension systems to serve and support farmers have predominantly done so using centralized rather than university-based models. However, Romania is beginning to pivot from a centralized approach to an agricultural university-based system across rural communities. To address this, the Romanian-American Foundation (RAF) established the Extension Education Development Program in 2023. Through the collaboration of Romanian agricultural universities, the program is beginning its third year with a growing network of Romanian professors and university administrators engaged in envisioning a new model for extension, based in universities, for Romania. This paper discusses the key areas of consideration regarding the program's success. Specifically, while momentum gains, program leaders recognize that extension cannot establish viability (in the case of Romania) or remain viable (in the case of the U.S.) unless systems are able to remain nimble amid evolving challenges, such as building and maintaining trust among diverse and dynamically changing communities and communication platforms, and growing sustainable food and fiber systems in complex markets.

Key words*: community development, extension, university engagement, rural communities.*

INTRODUCTION

Agricultural systems worldwide are at a crossroads. Facing mounting pressures from political and economic volatility, as well as shifting demographic trends and weather patterns, rural communities and the food systems that support them must rapidly evolve (Kahtri et al., 2023). While there is a vast array of strategies to navigate this interconnected and complex system, one particular strategy lies in strengthening agricultural extension systems, which focuses on supporting farmers through education, technology transfer, and community engagement. Among the most recognized models globally is the U.S. land-grant university-based Cooperative Extension System (CES). For over a century, this system has successfully linked universities with rural communities to solve agricultural and social challenges (USDA-NIFA, 2025b).

However, in many countries, outreach and engagement with farmers and rural communities has followed a different path often due to the unique challenges posed by its history and the region. In Romania, for example, agriculture has historically been centralized and state-driven and, following the fall of communism, has lacked the flexibility and local embeddedness necessary to catalyze sustainable development due to the excessive land fragmentation, followed by a slow process of consolidation (Ianoș & Secăreanu, 2020). As Romania seeks to modernize its rural infrastructure and better align with global demands and standards, a shift is emerging-one that repositions universities as hubs for regional innovation, community resilience, and economic development.

This paper examines Romania's transition toward a university-based agricultural extension model, guided by the Romanian-American Foundation's Romanian Extension Education Program (REEP) launched in 2023. The program, inspired by the U.S. model and implemented in partnership with University of Georgia based in the Southeastern United States, marks a focused and collective effort in approaches to generating, sharing, and applying agricultural knowledge within rural Romanian communities.

At the heart of this effort is a recognition that sustainable agriculture and resilient communities cannot be built through top-down directives alone. They require trusted, place-based relationships, interdisciplinary problem-solving, and the purposeful integration of and

collaboration with local leaders and agricultural producers. Universities, as centers of research, education, and engagement, are uniquely positioned to fill this role. Moreover, as global food and fiber systems become more interconnected and complex, the strategic process and effort put forth by Romania will offer valuable insights for other nations, including the U.S.-as they adapt their extension systems to contemporary realities.

To expand and provide context for this developing effort in Romania, the following sections will focus on five key areas of consideration for this endeavor: (1) an historical overview of extension with an emphasis on the theoretical underpinnings of social impact, personal agency, and the Community Capitals Framework; (2) an assessment of the structural and cultural challenges facing Romanian agriculture; (3) the design and early outcomes of the Romanian Extension Education Program; (4) an exploration of methods for evaluating social impact and fostering community trust; and (5) the broader implications for sustainability and resilience. Collectively, these sections establish an argument that university-led extension models can foster more adaptive, trust-based, and ecologically grounded rural development-if designed with context-sensitive strategies and an emphasis on social capital, cultural agency, and long-term community engagement.

HISTORICAL CONTEXT AND THEORETICAL FRAMEWORKS

The evolution of university-based agricultural extension is deeply rooted in the U.S. land-grant tradition. Initiated through landmark legislation-the Morrill Act (1862), Hatch Act (1887), and Smith-Lever Act (1914)-the U.S. system established a triadic relationship between teaching, research, and extension (USDA, 2025c). The Cooperative Extension System (CES), in particular, has long been the vehicle for delivering science-based knowledge from universities directly to farmers and local communities since 1914.

This model emerged not only to advance productivity but also to strengthen rural society. By embedding agricultural and civic education within local communities, land-grant universities sought to cultivate both economic and social capital. Over time, this model evolved to incorporate community development, youth leadership, environmental stewardship, and health-forming a multifaceted approach to rural engagement. Today, these are formally recognized as four distinct program areas: Agricultural and natural resources, 4-H youth development, family and consumer sciences, and community and economic development (USDA-NIFA, 2025a). Through this formalization and expansion over time, the U.S. Extension model retained core values: local relevance, accountability to public good, and partnerships grounded in mutual respect.

The theoretical basis for designing such models draws heavily from frameworks that integrate social structure with individual capacity and community well-being. One such model is the Community Capitals Framework (CCF; Fey & Flora, 2006; Flora & Bregendahl, 2012), which categorizes community resources into seven capitals: natural, human, social, cultural, political, financial, and built. This systems approach allows for a holistic evaluation of community development efforts and helps extension practitioners identify leverage points across interrelated domains (Borron et al., 2019).

In conjunction with the CCF, Borron et al. (2019; 2021) propose embedding the core constructs identified in the culture-centered approach (CCA), which emphasize the interplay between cultural context, structural conditions, and individual agency. This orientation shifts evaluation and program design away from a one-size-fits-all logic and toward community-based diagnostics that account for local perceptions and lived realities (Borron et al., 2021). As such, extension becomes not just a vehicle for technical transfer but a dialogic process of co-creating approaches and solutions between universities and communities.

Social impact assessment (SIA) methodologies further reinforce this orientation. Unlike conventional economic metrics, SIA aims to understand how programs affect interpersonal relationships, civic engagement, trust, and cultural identity. Methods like the Community Diagnostics + Social Impact Toolkit™ (CD+SI) scales enable a deeper look into both structural and perceptual dimensions of community change over time (Borron et al., 2019; Lamm et

al., 2020). These tools are particularly valuable in dynamic and uncertain environments-such as transitioning rural economies-where adaptive responses depend not only on material conditions but on how communities interpret and navigate change.

Together, these frameworks can provide the Romanian university-based extension model with a robust evaluative and philosophical foundation. They reframe the goal of extension as not merely improving yields or efficiency, but enabling communities to become more resilient, cohesive, and sustainable in the face of the dynamic interplay between and among technology evolution, funding availability, and socio-cultural shifts.

AGRICULTURAL EXTENSION IN ROMANIA: CHALLENGES AND OPPORTUNITIES

Romanian agriculture is characterized by both persistent challenges and emerging opportunities for innovation. Approximately 45% of Romania's population resides in rural areas, and agriculture remains a major source of employment and cultural identity (Ciocan et al., 2024). Yet, despite its foundational role in society, Romanian agriculture is constrained by enduring historical effects and challenges.

Foremost among these challenges is land fragmentation (Dobre & Mocuța, 2022). The majority of farms are small-scale, subsistence-based, and family-run, often covering less than five hectares. This limits farmers' ability to invest in modern equipment, apply technological innovations, or scale production. Additionally, the ownership structure complicates access to credit, eligibility for subsidies, and participation in EU-funded rural development programs (Ciocan et al., 2024).

Compounding these constraints is an inconsistent closing of the knowledge gap between farmers and agricultural universities with strong research capacity. While outreach and engagement with rural communities does occur among faculties of agriculture, it is inconsistent and has rarely been translated into actionable insights for farmers more broadly or made accessible in user-friendly formats. As a result, many Romanian farmers continue to rely on outdated, low-productivity methods with limited ecological sustainability or market competitiveness (Toma et al., 2019).

At the same time, rural Romania possesses significant untapped potential. Traditional farming practices, often grounded in ecological sensitivity and biodiversity preservation, align well with the principles of agroecology (Vasilescu et al., 2023). Rural populations also demonstrate a high degree of resilience, local knowledge, and a willingness to innovate-if adequate support and trust-based relationships are established.

The opportunity for transformative impact resides in effectively bridging the gap between academic institutions and rural communities, thus enabling universities to function as pivotal agents of sustainable rural development. By providing robust advisory services, facilitating active stakeholder engagement, and embedding student-led research within community-driven initiatives, universities can profoundly influence local problem-solving and economic resilience (Ciocan et al., 2024).

To replicate the U.S. Extension model in a country like Romania is nonsensical. The U.S. model evolved and adapted based on the unique characteristics of a country's development over time. Therefore, in Romania, the process of extension development must emerge while looking through different historical and present-day lenses. Current development emerges from an inherited command-economy structure under communism. Decision-making, knowledge dissemination, and service provision flowed hierarchically from state agencies. As a result, one set of challenges that has emerged as a result of this is how to effectively address localized needs, how to integrate local participatory mechanisms (Condrea et al., 2023), and how to systematically engage universities as active partners in rural development (Ciocan et al., 2024; Popescu et al., 2020). Translating these challenges into a vision within the Romanian context requires new institutional scaffolding-especially at the level of agricultural universities-and thoughtful attention to socio-cultural variables.

THE ROMANIAN EXTENSION EDUCATION PROGRAM

Launched in 2023 through a strategic partnership between the Romanian-American Foundation (RAF) and the University of Georgia (UGA), the Romanian Extension Education Program has begun to establish a novel and context-specific paradigm for agricultural extension in Romania. The initial design of the program included RAF-Fulbright scholars (Romanian professors) spending four months at UGA immersed in a structured program that included mentorship by experienced UGA Extension specialists, targeted academic seminars, facilitated think tank sessions, and immersive field experiences across Georgia's diverse agricultural ecosystems. To date, two cohorts, each comprised of five Romanian professors, have participated in the program, with a third to officially begin their involvement in August 2025.

Field experiences emerged as particularly impactful components, providing comprehensive insights into varied agricultural operations and emphasizing the critical function of extension agents within local communities. Scholars consistently identified trust and effective communication between extension agents and farmers as essential to developing successful extension services. Additionally, exposure to practical extension activities, such as agricultural marketing initiatives and youth development programs like 4-H, was recognized as directly relevant and highly transferable to the Romanian agricultural and rural development context.

Through structured reflective analyses, scholars delineated four primary thematic areas integral to the development of extension systems: (1) understanding the operational mechanics of the U.S. extension model; (2) recognizing context-specific challenges and opportunities within Romania; (3) valuing decentralized, community-centric leadership approaches; and (4) adopting effective practices from the UGA extension system. Specifically, scholars advocated for pilot extension projects, meritocratic recruitment practices, sustainable financial frameworks, and youth engagement programs.

Returning to their home institutions, scholars articulated clear motivations for the integration of extension practices into their academic and professional roles, while simultaneously acknowledging administrative and temporal constraints. Identified implementation strategies include the establishment of localized extension networks, the integration of extension-oriented pedagogical content into academic curricula, and the execution of targeted market and needs assessments to accurately identify regional agricultural priorities.

Collectively, these advancements underscore the transformative potential of universities in fostering agricultural and community development through extension education. The initial outcomes of the Romanian Extension Education Program demonstrate not only the enhancement of scholarly capacities and collaborative networks but also the emergence of a robust, context-centric agricultural extension framework. Such frameworks offer valuable insights and methodologies applicable to similar contexts globally, contributing significantly to broader discourses on rural resilience and sustainable agricultural development.

ESTABLISHING TRUST AT THE LOCAL LEVEL

Successful Extension transcends a traditional one-way line of communication, education, and engagement. It must be relational among those who are involved; and it must incorporate credibility, reciprocity, and sustained engagement. The Community Capitals Framework places social capital as the fulcrum by which all other capitals function. Within social capital, trust is at the core. When trust is increased, costs of coordination are lowered, civic participation is increased, and collective problem-solving in the face of uncertainty and challenges is strengthened (Fey et al., 2006; Borron et al., 2019). Studies of county Extension programs in Georgia, for example, show that volunteer participation and program longevity rise when agents cultivate "supportive relationships, mutual trust, and a shared purpose" (Lamm et al., 2022).

Trust often begins within the localized context through the Extension agent-the one who

functions as the informational and relational liaison between the farmers and the associated advisory program. A recent psychosocial analysis in Indonesia found that "communication, trust, social capital, and resilience" were the strongest predictors of extension-worker performance, with mutual trust between agents and farmers determining whether advisory programs progressed beyond the introductory stage (Mara et al., 2024). Further, case-study evidence from Indonesian rice producers shows that high interpersonal and institutional trust promotes knowledge exchange and the adoption of sustainable practices, which, in turn, positively influences productivity and farmer welfare (Yusuf et al., 2024).

For universities positioning themselves as hubs of a Romanian Extension system, trust building must begin long before outreach activities formally launch. Embedding students in field placements alongside respected agents supports "agency-informed self-efficacy," facilitating student development to see communities as partners rather than passive recipients of expertise. Therefore, curricula and associated research projects that emphasize participatory facilitation, conflict negotiation, and culturally responsive communication increase the chances of producing technically competent specialists and expand the capacity of emerging experts who better understand the application of their discipline within a systems approach (Borron et al., 2019; 2021).

Trust also operates as a buffer that enhances community resilience (Aldrich & Meyer, 2014). Where bonding, bridging, and linking social capital are robust, local networks mobilize more efficiently and purposefully during emerging issues or immediate (Borron et al., 2023). Conversely, where trust is thin or fragmented, even well-funded initiatives struggle to gain traction. Integrating trust metrics-including perceptions of agent reliability, transparency of decision processes, and frequency of bidirectional feedback-into monitoring and evaluation frameworks allows practitioners to capture these subtle yet consequential dimensions of program impact.

If a trust-centered Romanian Extension model is to begin with the university itself-where it serves as the convener of knowledge, credibility, and longevity-there must be intentional and strategic approaches to building such a model. This can include, but is not limited to:

- Recruiting extension agents who are graduates, faculty affiliates, or advanced students of the host university and who already possess ties to the target region, ensuring that local engagement is both professionally supported and culturally informed.
- Securing multi-year funding lines within university budgets (supplemented by competitive grants) so that relationship-building and iterative learning are protected against annual budget volatility.
- Housing programs within established university - based extension hubs that convene farmer and civic - sector advisory boards, ensuring the integration of the community voice is part of the decision-making processes of the university's strategic efforts.
- Integrating transparent feedback loops, such as the CD+SI, directly into the university extension programs' design, development, delivery, and evaluations processes-enabling real-time adaptation.

By making trust an explicit strategic objective-and by positioning the university as the nexus where research, teaching, and outreach intersect-Romania's emerging extension system can translate academic expertise into durable community resilience and, ultimately, a more sustainable and self-reliant rural future.

IMPLICATIONS FOR SUSTAINABILITY AND RESILIENCE

Any discussion of "scaling up" begins with a note of humility: the observations that follow are offered as prompts for dialogue, not prescriptions. Romanian scholars, practitioners, and rural stakeholders are best positioned to judge how, when, and whether the emerging university - led Extension efforts are to grow.

1. Start small, learn fast, expand deliberately

The "Development of a University Agricultural Extension System in Romania" project led by Civitas Fundația is still in its formative phases. However, at the time of this writing, pilot project development activities were underway and taking shape through team development at

multiple agricultural universities throughout Romania. Preliminary planning indicates that launched co-created projects will generate necessary data on farmer needs, staffing requirements, and governance structures within the first year-all while addressing a pressing agricultural production issue within a targeted community or region. While the outcomes are still yet to be seen, the approach is designed in a way that will allow project partners (university personnel, communities leaders, and farmers to validate assumptions, refine procedures, and manage fiscal exposure before full implementation or project replication elsewhere (Civitas, 2025).

2. Embed Extension explicitly in Romania's CAP Strategic Plan

Romania's 2023-27 CAP plan already recognizes that 3.5 million mostly small-scale farmers require "coherent socio-economic development of rural areas" (European Commission, n.d.). Translating that aspiration into practice could involve registering accredited university Extension units as *bodies providing farm advisory services* under Article 15 of Regulation (EU) 2021/2115, thereby unlocking CAP Pillar II funds earmarked for knowledge-exchange and AKIS interventions. The i2connect cross-country review notes that such public funding is the dominant revenue stream for university-based advisory organizations elsewhere in Europe (Birke et al., 2022).

3. Align multi-level governance and diversified finance

Because AKIS success depends on dense linkages among ministries, municipalities, producer groups, and knowledge institutions, national and county authorities could establish *Regional Extension Coordination Councils* with parity representation from universities and farmer organizations. These bodies would (a) agree on shared metrics-e.g., trust scores, adoption rates of climate-smart practices, and youth engagement-and (b) bundle financing from CAP eco-schemes, Horizon Europe innovation calls, and private-sector value-chain partners. Cross-sector consortia also mitigate the vulnerability that purely public programs face when budgets tighten, a risk repeatedly flagged in European advisor surveys Birke et al. (2022).

4. Cultivate a transferable-but never 'one-size-fits-all'-template

Neighboring Ukraine and Moldova confront similar structural hurdles: high proportions of smallholders, post-socialist governance legacies, and the need to comply with EU acquis. A Romanian model that foregrounds local trust, university stewardship, and EU-compatible funding architecture could therefore serve as a point of reference-provided it is offered as an adaptable framework rather than a turnkey solution.

CONCLUSIONS

Romania's developing university-based Extension system represents a collaborative experiment at the intersection of research, education, and rural development. The evidence reviewed here-ranging from pilot-project outcomes to EU policy analyses-suggests that universities can complement, rather than replace, existing advisory actors by supplying neutral convening space, research-driven credibility, and a pipeline of professionally prepared graduates. Crucially, the model's long-term success rests on two intangible assets: **trust** within local communities and **policy stability** within national institutions.

By advancing a deliberately modest, co-creative scaling strategy and by embedding Extension in the country's CAP and AKIS frameworks, Romania has an opportunity not only to strengthen its own rural resilience but also to contribute knowledge to a wider Eastern-European conversation on post-centralized agricultural support systems. The hope, offered respectfully, is that the ideas sketched here will be refined, challenged, and ultimately surpassed by Romanian scholars and practitioners as they chart a uniquely Romanian path toward sustainable agriculture and vibrant rural futures.

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