Teaching and Educational Methods

Designing a Farm and Ranch Management Plan: A Teaching Template

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Abstract
This article examines the implementation of a farm and ranch management plan assignment in an undergraduate agricultural economics course. Designing a farm and ranch management plan addresses a key gap in agricultural education: the lack of entrepreneurial training, which is a major barrier for young producers in starting and managing successful operations. Business plans have been linked to greater entrepreneurial success, providing a roadmap for firm growth and decision-making. This article includes assignment guidelines, learning objectives, implementation strategies, example materials, and a grading rubric. Assignment challenges and student feedback are also discussed. Creating these farm and ranch management plans allows students to apply class concepts to real-world settings while developing essential skills in research, critical thinking, communication, skill mapping, and networking. Through this assignment, students are empowered to explore various career paths, assess the feasibility of their ideas, and engage with industry professionals. This flexibility accommodates students from different backgrounds—whether they are from traditional agricultural families or exploring new ventures. Writing a farm and ranch management plan requires students to explore new pathways and navigate the competitive agricultural landscape and, ultimately, reduces barriers to entry for new producers.

1 Introduction

Entrepreneurship is the foundation of economic growth. Startup businesses facilitate the reallocation of productive resources across firms. In fact, entry-level, high-productivity firms contribute about 70% of gross job creation annually (Decker et al. 2014). However, successful entrepreneurship requires access to human, physical, and financial capital, and research shows a decline in entrepreneurship across multiple measures in the past half century. The firm entry rate and share of young firms declined from 15% in 1978 to 9% in 2019 (Akcigit and Ates 2021). Similarly, the self-employment rate dropped from 8% in 1985 to 4% in 2014, a shift largely driven by college graduates (Salgado 2020). Rising entry costs are identified as the main factor behind this downward trend (Kozeniauskas 2025).

These general economic trends are apparent in the agricultural sector as well. The number of farms has been on a gradual decline since the 1980s. The Census of Agriculture reported 2.04 million farms in 2017, declining 8% to 1.88 million farms in 2024. The agriculture self-employment rate in rural areas fell from 60% in 2001 to 43% in 2022 (Orazem and Winters 2023). These structural changes in agricultural entrepreneurship are closely tied to the demographics of US farm producers (see Figure 1). Over time, the share of producers aged 55–64 and 65 and older has steadily increased, reflecting an aging farming population. In contrast, the proportion of younger producers under 44 has generally declined. In 2022, producers under the age of 35 made up 9% of the total, accounting for approximately 300,000 out of nearly 3 million producers (USDA 2022).

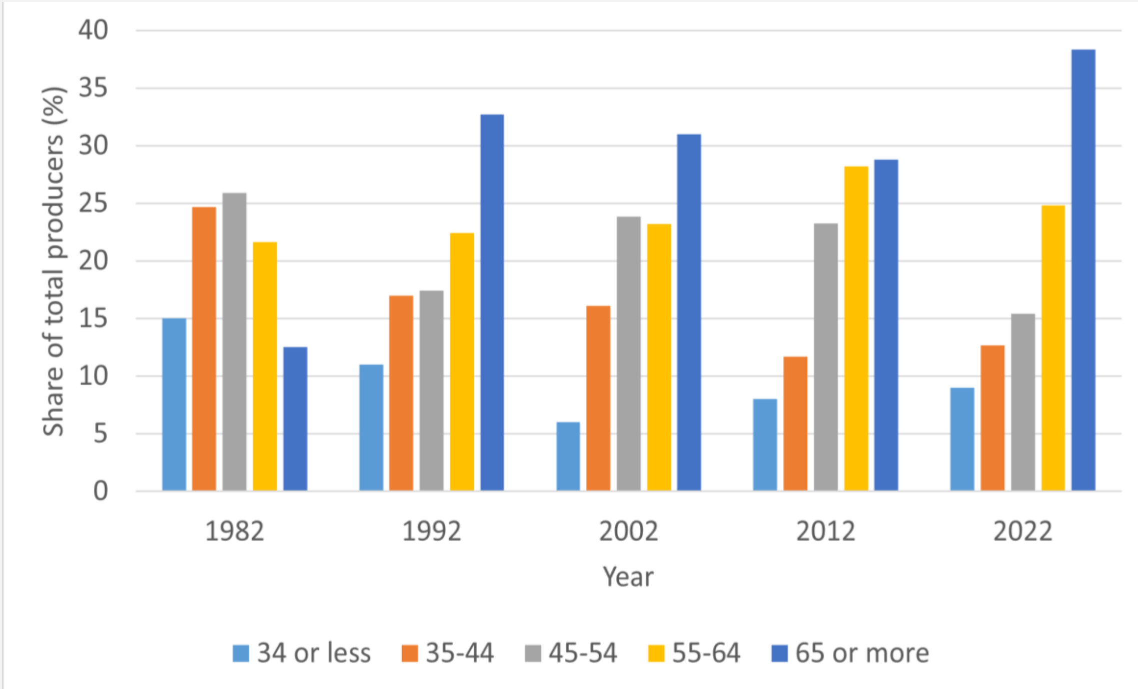

Figure 1. The share of total producers in each age category from 1982 to 2022

Note: Figure created using data from the USDA Census of Agricultural Historical Archive.

The National Young Farmer Survey reports that land access is the primary challenge facing young farmers (Ackoff et al. 2017). Securing affordable, suitable farmland is particularly difficult due to high land prices and competition from large-scale operators and developers. Other top-ranked challenges include student loan debt, which can limit additional capital accumulation; access to labor, especially seasonal workers; and the high cost and limited availability of health insurance and housing. Finally, many young producers lack sufficient training and business planning support.

One proposed strategy to mitigate barriers to entry for young producers is to have potential entrepreneurs build needed skills through their college education. In theory, agricultural business majors are introduced to the skills needed to manage agricultural operations in classes such as Farm and Ranch Management. The class curriculum is designed to prepare students to be successful managers and acquire the knowledge to deal with the challenges of today's agricultural industries. However, often missing from these classes is instruction and practice in the actual setup of an entrepreneurial endeavor.

In this article, we propose that students build a farm and ranch management plan in a classroom setting. A farm and ranch management plan is a roadmap for an envisioned operation. The USDA promotes the creation of a business plan for organizational purposes, to act as a guide, and as a requirement for the loan application process (USDA 2023). This article demonstrates the setup for such a farm and ranch management plan including a project description and grading rubric, discusses the objectives and outcomes of this type of assignment, and finally offers some instructional strategies and templates. This assignment allows students to demonstrate their understanding of key concepts such as accounting, finance, marketing, operations, and management in an applied setting. Students blend their classroom knowledge with personal experiences as well as outside research to analyze the feasibility of starting a business.

A farm and ranch management plan provides a pathway for agribusiness programs to build the skills needed for students to succeed in the agricultural sector and also appeals to a wide demographic of students. There is a need to update the curriculum in applied economics and agribusiness to meet employer expectations while appealing to a range of students (Brown et al. 2024). Others have recommended introducing case studies (Boland 2020; Hall 2024), simulation games (Bhattari and Davis 2024), study abroad programs (Delbridge 2023), outreach training (Rudi-Polloshka et al. 2023) as well as study tours and agribusiness internships (Peralta, Johns, and Loch 2024). A farm and ranch management plan is a low-cost strategy for agricultural departments to introduce transferable skills that are in high demand in the industry and encourage students to engage in agricultural entrepreneurship.

2 The Farm and Ranch Management Plan

2.1 Entrepreneur and Student Benefits

As with all businesses, effective strategic business planning is an important part of owning and managing a farm or ranch. A business plan outlines a venture's goals, activities, and strategies. Entrepreneurs create a business plan to evaluate production alternatives, identify new market opportunities, and communicate their vision to employees, partners, investors, and lenders. Additionally, a business plan serves as an internal roadmap for entrepreneurs, guiding the launch and growth of the operation by clarifying goals and supporting decision-making (Timmons and Spinelli 2003).

The literature consistently shows that business planning plays a crucial role in the success of new ventures: aiding in decision-making, balancing supply and demand, and translating abstract goals into concrete steps (Delmar and Shane 2003). In a subsequent study, Delmar and Shane (2004) find that business planning helps founders establish legitimacy with customers, partners, and funders. Beyond initial firm development, research also indicates a positive relationship between business plans and financial goal achievement (Becherer and Helms 2009), increased growth rates (Burke et al. 2010), and a lower likelihood of failure (Shane and Delmar 2004). In a meta-analysis of 46 studies, Brinckmann et al. (2010) summarize that business planning positively influences growth, profitability, and survival. More recently, in a study mitigating selection bias by using a propensity score matching model with US entrepreneurial survey data, Greene and Hopp (2017) find that founders who formally plan are more likely to achieve financial viability.

However, some studies suggest limited external benefits. Kirsch et al. (2009) conclude that a well-developed business plan is not a strong precursor of venture capitalist funding—although this may be less relevant for business owners in the agricultural sector. Honig and Karlsson (2004) initially find no link between business planning and firm survival/profitability in a sample of Swedish firms. Yet, a later replication by Hopp et al. (2018) using the same data contradicts this, showing that business planning positively impacts firm survival, aligning with the broader literature.

The evidence that business plans are worthwhile for entrepreneurs is compelling. The creation of a business plan is also beneficial for students in a classroom setting. Below is a summary of the key learning goals associated with a farm and ranch management plan developed from practice-based observations:

(1) Exploration. Creating a farm and ranch management plan provides students with the opportunity to explore various career paths in the agricultural sector. It allows them to delve into potential opportunities and critically assess their costs, benefits, and feasibility while also considering the economic sustainability of a business and their long-term goals.
(2) Skill Mapping. Developing the plan helps students identify the skills and resources necessary for launching a successful operation. These insights can guide their decision-making regarding relevant courses to take or internships to pursue, enhancing their skill set and providing a competitive advantage in the job market.

(3) Networking. The farm and ranch management plan serves as a platform for conducting informational interviews with industry professionals. This not only allows students to gain firsthand insights into the field but also helps them build valuable networks. Many students have used these interviews with agricultural producers and ranchers to establish connections that led to mentorships and career opportunities.
(4) Research. Students practice undergoing a systematic investigation of a subject that calls to them. Mastering the ability to gather, analyze, and synthesize information is crucial for creating a strategic plan. Research in this setting also exposes students to the resources and extension materials available to new producers. For example, students became familiar with local extension staff—university educators who provide resources and technical assistance to farmers—and initiatives such as the Beginning Farmers and Rancher Loans provided by the Farm Service Agency.
(5) Communication. Creating a professional business plan hones students' ability to convey ideas clearly and concisely in writing to a specific audience other than their professor. As they consider submitting this as part of a loan application, they think outside traditional academic writing styles and conventions and practice applicable communication skills toward a successful entrepreneurship. Even though the professor is the one grading the final product, this assignment challenges students to persuade others outside of the classroom to believe in their venture.
(6) Critical Thinking. With this assignment, students must learn to analyze market trends, identify gaps, and develop strategies to achieve their goals. Effective planning requires prioritizing tasks and solving problems. Agriculture is a particularly risky and dynamic industry, facing challenges such as weather-dependent supply, vulnerability to disease and pests, volatile prices, high fixed costs, limited short-term supply elasticity, and significant government involvement. By building critical thinking skills, students will be better equipped to navigate and capitalize on these challenges and opportunities.

In the classroom, the business plan assignment develops essential skills. At the same time, the assignment is grounded in real-world practice. Many agricultural lenders routinely ask for a business plan as a part of a loan application. In particular, writing a business plan is a requirement to qualify for a USDA commercial loan under the Rural Development Program as well as many of the Farm Service Agency loan products. Participation in these financing opportunities reduces the risk of business failure and increases the rate of growth (Rupasingha et al. 2019). This industry demand motivates the assignment, ensuring students gain both academic skills and practical preparation for securing future financial opportunities.

For instructors, the final project offers an alternative approach to evaluating student understanding of class concepts beyond traditional exams. In classes such as Farm and Ranch Management, Agricultural Business and Economics, Agribusiness Management Capstone, and Finance in Agribusiness, teachers can determine how well students are able to apply class concepts to new settings. Another benefit of a project-style assignment is working with students one-on-one when answering their questions and helping them navigate the research and writing process toward individual goals. This allows for genuine connections to be made between the teacher and students. Project-based learning practices have been linked to increased student motivation, engagement, and achievement (Kokotsaki et al. 2016).

2.2 Assignment Overview and Templates

There are a number of high-quality guides and online resources available to writing business plans (Barrow, Barrow and Brown 2005; Sahlman 2008; SCORE 2024), as well as farm and ranch management templates (DiGiacomo et al. 2003; Parsons 2015; Parsons 2018; USDA 2023). This article does not aim to replace these guides but rather makes its contribution by creating an assignment specific for student entrepreneurs to work through the planning process and develop their farm and ranch management plan in an agricultural business class. It provides a resource to teachers in agribusiness education to assign and grade this type of assignment while also sharing strategies to support students throughout the process.

The intended audience for this assignment is undergraduate students, primarily agricultural business majors. This assignment is most fitting for students in their later years, juniors and seniors, who have taken a majority of required background business classes and are starting to think about their career paths. The farm and ranch management final project underwent a trial run in Montana State University's Farm and Ranch Management class in the spring semesters of 2024 and 2025. Class lectures and lab exercises were based on McGraw Hill's *Farm Management* textbook (Kay, Edwards and Duffy 2020). The class sizes were 20 and 40, respectively. Students were allowed to work in pairs or individually on the farm and ranch management plans.

Appendix 1 details the farm and ranch management assignment. It is recommended to introduce the assignment at the beginning of the semester. The main objective of the assignment is to have students develop a feasible farm and ranch management plan and critically analyze different strategies to run a business in the agricultural industry. The outcome of the assignment is a clear and concise plan that can be used to launch a business in the future as well as to apply for a loan.

The assignment prompts the students to choose a type of business that is of personal interest. Students can choose to extend a family business or branch out into a new venture. Potential business options include a crop farm, livestock operation, input supplier, distributor, or anything else related to agriculture. This choice autonomy helps students develop a sense of ownership and control over their learning (Kokotsaki et al. 2016). Students are motivated to invest time in a project when they see how its outcomes align with their future goals.

The components of the farm and ranch management plan and a quick description of each element are laid out in the assignment description. The farm and ranch management plan should include an executive summary, business description, operations plan, marketing plan, financial plan, and risk and sustainability plan. A template with recommended page lengths is included to give students a guideline for how to structure the project.

Appendix 2 provides the grading rubric. The farm and ranch management plan is graded out of 100 points. There are five criteria in the rubric:

(1) Execution of Plan (40 points). The first criterion grades students on the execution of the farm and ranch management plan components and makes up the majority of the grade. An exemplary plan will be comprehensive and include all the necessary elements of the plan. Students are graded lower if some elements of the plan need further depth or are missing entirely.

(2) Integration of Class Concepts and Models (20 points). The second criterion evaluates whether the student successfully integrated the concepts and models learned in class. A lower grade may be earned if the student applies course material appropriately but may have overlooked opportunities for deeper integration. This criterion can be catered to the specific units covered during the semester.

(3) Depth of Analysis and Critical Thinking (20 points). Third, students are graded on the depth of analysis and critical thinking demonstrated in the plan. This category rates the extent that students offer nuanced insights into market trends, financial projections, and management strategies, going beyond surface-level discussions. Overdependence on artificial intelligence could be reflected with a lower critical thinking score.

(4) Writing Quality and Presentation (10 points). Students are also graded on the professionalism of the document—whether the document is well-organized, logical, concise, free of errors, and uses effective visual aids.
(5) Research and Citation (10 points). Finally, whether the plan incorporates high-quality sources to support their recommendations and whether they are properly cited makes up the last portion of the grade. This section also grades students on whether they interviewed experts in the field and adequately incorporated this information.

Providing examples of other farm and ranch management plans is especially valuable, as they help students understand the expected outcome. Across two semesters of the assignment, students produced several excellent final projects. Some projects were extensions of existing businesses, while others were created completely from scratch. An example farm and ranch management plan written by Beth Shirley is provided in Appendix 3. Other plans not featured but that demonstrate the innovative nature of these projects include a pack-horse tourism business, a machinery storage warehouse rental business, an equine breeding operation, and a mobile artificial semination clinic based in a sprinter van. More traditional projects were created as well, specifically growing the family wheat farm, starting a cow-calf operation, and even expanding family operations for a pickling farm.

Students were required to turn in a farm and ranch management plan as their final class project. It accounted for 20% of their final grade and took the place of a final exam. There are extensions and variations of the final project format. These projects could easily be turned into presentations at the end of the semester if professors want students to be exposed to others' projects and practice their oral communication skills.

In addition, an assignment for informational interviews is recommended (see Appendix 4) to be paired with the farm and ranch management plan. Students are asked to reach out to an industry expert—such as a farm or ranch owner, agricultural credit lender, food business manager, or other professional—and conduct a 30- to 60-minute interview guided by a set of prepared questions. Students then submit a summary report highlighting key takeaways, relevance to the business plan, and a reflection on the conversation. Informational interviews help students build professional networks, gain insight into current industry practices, and develop more informed and realistic business management plans.

3 Implementation Strategies and Challenges

Professors planning to incorporate a farm and ranch management assignment may find the following strategies helpful in effectively guiding students through the project.

(1) Require students to submit a one-page project outline to demonstrate that an idea has been formed. Introduce the project at the beginning of the semester and ask students to turn in an outline at the halfway point to limit procrastination and ensure students are on the right track with the assignment. Starting the project is often the hardest part, so this outline gives students a chance to brainstorm more thoughtfully and identify a realistic starting point without the pressure of a looming deadline.
(2) Allow for time in class and additional office hours to allow students to work on the project and ask questions. I allowed students two entire class periods (75 minutes each) to work on the projects. During these periods, I would talk with each student about any challenges they were facing and help them toward additional information. These one-on-one conversations often led to more focused farm and ranch management plans and less frustration with the research process.

(3) Share a range of farm and ranch management examples (DiGiacomo et al. 2003; Parsons 2015, 2018; USDA 2023), along with financial document templates and baseline cost and return estimates (ERS 2024). The examples I showcased included a business plan for a traditional crop and livestock operation in Idaho (Staley 2010), a family peach farm start-up in Wisconsin (Palo Alto Software 2024), and an expanding vegetable farm business in Vermont (Lennart et al. 2019). Presenting multiple examples helped students break down the daunting task of business planning, offering models that aligned more closely with their specific ideas and goals.

Implementing the farm and ranch management plan assignment was not without its challenges. One of the most significant logistic hurdles was grading. While grading was manageable with approximately 20 students in the spring of 2024, the workload became substantially more burdensome when the course enrollment doubled to 40 students the following year. Providing meaningful, individualized feedback was time-consuming. The use of the rubric helped streamline this process, but additional strategies to reduce the time cost may be needed in larger classrooms. For example, having students work in larger groups (3–5 students) or shifting from written reports to oral presentations could reduce grading time.

A more complex challenge has been the rise of artificial intelligence (AI) tools such as ChatGPT. These technologies offer significant benefits to students: support with language development, idea generation, and conceptual understanding. However, the excessive dependence on AI raises concerns about reliability, academic integrity, and student development (Ansari et al. 2024). Presenting information without proper attribution as one's own work is a form of academic dishonesty. Importantly, over-reliance on AI can undermine the development of independent thinking, critical analysis, and independent writing skills (Rasul et al. 2023). In the spring of 2025, a few students submitted assignments that were clearly generated by AI. These fully AI-generated assignments lacked voice, original ideas, had fabricated references, and failed to cite the use of AI.

To try and tackle these concerns, a few strategies can be implemented. First, Sweeney (2023) suggests designing assignments that encourage originality and creative thinking. Fortunately, the farm and ranch management assignment inherently requires creativity, and a number of contextual details that are difficult for AI to produce effectively. AI-generated submissions were easy to identify during grading, because they were often vague and generalized. Second, providing clear expectations and discussing the use of AI throughout the semester is also important (Sweeney 2023). Informing students of the costs to their own development is one way to mitigate academic dishonesty. Explicitly including AI-related criteria in the rubric, particularly in the analysis section, and deducting points for excessive reliance on generative tools can help maintain academic standards. The course syllabus should make it clear whether generative AI can be used and any requirements for citation. Finally, offering students support in the writing process and deadlines throughout the semester can be beneficial as well in reducing the inclination to be dishonest.

4 Discussion and concluding remarks

Engagement throughout the project was astounding. Students put in many hours of research both in and outside of the classroom, came in to chat multiple times during office hours, reached out to family contacts and industry leaders, and clearly invested significant time into creating professional plans. Feedback from students was overwhelmingly positive, with many valuing the opportunity to work on something that would be useful at later points in their career. Students expressed appreciation to apply their skills in a practical context, describing the experience as both memorable and impactful. Students also valued the opportunity to network with agricultural professionals, research current industry conditions, and practice developing realistic financial documents—key learning objectives of the farm and ranch management plan. I also received feedback from parents and industry contacts, who expressed excitement at seeing the next generation planning for the future.

A farm and ranch management plan assignment is an effective way of incentivizing undergraduate students to explore the opportunities in agriculture. This article lays out a usable project description, rubric, implementation strategies, and examples to allow other professors in agricultural economics and business departments to adopt this strategy. Business plans have been tied to more successful and profitable business operations. Having students design a farm and ranch management plan also achieves a number of learning objectives: exploration, skill mapping, networking, research, communication, and critical thinking. Providing entrepreneurial training through farm and ranch business plan assignments is one pathway toward reducing the barriers to entry for up-and-coming agricultural producers from diverse backgrounds.

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