

MAKERERE UNIVERSITY
MAKERERE UNIVERSITY BUSINESS SCHOOL
COURSEWORK ONE TAKEHOME ASSIGNMENT FOR THE DEGREE OF
MASTERS OF SCIENCE IN ACCOUNTING & FINANCE (MSCA&F) OF MAKERERE
UNIVERSITY; ACADEMIC YEAR: 2026/2027

COURSE NAME: **Strategic Management Accounting** COURSE CODE: **ACC 7103**

YEAR OF STUDY: **ONE**

SEMESTER: **ONE**

ASSIGNMENT DUE DATE: **Friday September 18 2026**

TIME: **09:30 P.M**

Instructions to candidates

- *Read the case "Prajiv Farm Solutions: Fodder Value-Chain Interventions for Profitability" carefully and answer ALL the questions below.*
 - *The paper is marked out of 40. Support your answers with evidence and figures drawn from the case exhibits wherever relevant*
 - *Submit your assignment individually, Upload a file on Home | MUBSEP*
 - *Submission date: September 18th at 09:30 pm*
 - *Format: Two pages, Times New Roman, font size 12, line spacing 1.5*
 - *All University Examination Regulations shall apply.*
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Question One:

Value chain analysis is widely used as a strategic management tool for understanding how a business creates value and competitive advantage.

- (a) Explain the relevance of value chain analysis to a business such as Prajiv Farm Solutions. *(10 marks)*
- (b) Discuss how value chain analysis has been applied in this case to help Dr. Awasthi identify sources of value and competitive advantage, and to inform his decisions on scaling up the business. *(8 marks)*

Question Two:

- a) Evaluate the value chain for green fodder using Porter's value-chain framework. In your answer, identify the primary and support activities of Prajiv Farm Solutions and explain how these activities combine to create the company's competitive advantage. *(16 Marks)*
- b) Discuss three factors that drive the demand for fodder in India and three factors that constrain its supply. *(6 marks)*

TOTAL = 40 MARKS

END OF THE ASSIGNMENT



PRAJIV FARM SOLUTIONS: FODDER VALUE-CHAIN INTERVENTIONS FOR PROFITABILITY

Nisha Bharti, Sushant Malik, and Akash Mondal wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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Dr. Himanshu Awasthi was a Master of Business Administration (MBA) graduate from a prestigious management institute in India. His MBA focused on agribusiness management and he knew from the beginning that he would be a job creator, not a job seeker. The owner of a large piece of land, he decided to start a business, something different to what the other traditional farmers in his village were doing. The trio of reduced feeding costs for dairy livestock, sustainable income from agriculture, and employment generation in rural India led him to start Prajiv Farm Solutions to grow fodder crops. There were two types of fodder crop: dry and green. While evaluating the market, Awasthi found that the gap in the supply of green fodder was much higher than for dry fodder. In 2016, he opted to grow green fodder and to serve consumers directly. In June 2023, six years after starting the business, he wondered how to scale it up. The challenges differed from any other crop segment, as green fodder was considered low-value but high-volume. Delivery of green fodder was a time-bound activity, and the company had found it challenging to reach more distant markets. The option of using cold chain technology would increase costs and may not be profitable. Awasthi started exploring the options for developing a strategy to expand the business and make it scalable.

ISSUES IN AGRICULTURE

Agriculture played a crucial role in the Indian economy, with a contribution of 18.3 per cent to India's gross domestic product.¹ Yet the sector faced many challenges, such as low productivity, lack of technology and knowledge, insufficient water, climatic changes, and variable seasonal patterns.² In India, about 80 per cent of farmers were small-scale.³ Only 55 per cent of the gross cultivated area was irrigated, and existing infrastructure was either outdated or unusable.⁴ Volatility in crop prices and irregularity of supply and

¹ "Contribution of Agricultural Sector in GDP," Ministry of Agriculture & Farmers Welfare, March 21, 2023, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1909213>.

² "India: Issues and Priorities for Agriculture," The World Bank, May 17, 2012, <https://www.worldbank.org/en/news/feature/2012/05/17/india-agriculture-issues-priorities>.

³ National Commission for Enterprises in the Unorganised Sector, *A Special Programme for Small and Marginal Farmers*, December 2008, accessed February 12, 2024, https://dcmsme.gov.in/Special_Programme_for_Marginal_and_Small_Farmers.pdf.

⁴ "State-Wise Gross/Net Irrigated and Un-Irrigated Area in India (2020–2021)," Indiastat, accessed February 12, 2024, www.indiastat.com/table/agriculture/state-wise-gross-net-irrigated-un-irrigated-area-i/1442377.

demand also made agriculture challenging. Pests and disease were also significant problems for sustainable agriculture. In 2011, the Indian agricultural workforce was 49.26 per cent, dropping to 43.96 per cent in 2021, making labour shortages a significant issue for farmers.⁵

Due to the dependency on the monsoon, cropping patterns in India were dominated by monoculture—growing a single crop year after year on the same land. Cropping patterns referred to the types and sequences of crops grown in a particular area over time. Climate, soil type, water availability, and market demand were also influencing factors. There were different types of cropping patterns, including monoculture, mixed cropping, and crop rotation. In India, there were three cropping seasons: Kharif, Rabi, and Zaid.⁶ The most common patterns in India were Kharif–Rabi rotation, mixed cropping, and intercropping. Monoculture could lead to soil degradation, pest infestation, soil erosion, and biodiversity loss. In India, farmers generally followed a monoculture pattern, which led to a significant yield reduction year-on-year. India was a land of diverse soils, many of which were nutrient-poor. Monoculture further reduced soil fertility, and with India's strong monsoon rains, soil was eroded further.

One important strategy to deal with the problems of unemployment and underemployment among Indian farmers was to promote agriculture and different allied activities of agriculture like dairy, pig farming, and fishery activities. To encourage this, Dr. Verghese Kurien promoted Operation Flood in the 1970s—one of the world's largest dairy development programs, which increased the promotion and growth of dairy farming in India.⁷

Fodder crops must be included to support these activities. They can be grown in monocultural as well as intercropping patterns. However, the benefit of fodder crops was that they could improve soil fertility, decrease soil erosion, and improve biodiversity. Therefore, farmers could shift to fodder crop cultivation not as a monocultural pattern but as part of an intercropping pattern, as fodder could grow alongside other crops.

TRADITIONAL FARMING IN INDIA

Traditional farming in India, such as rice and wheat, was labour-intensive and required a lot of water. The cost of cultivation was very high, especially for rice, because it was a water-intensive crop.⁸ If the cost of water was accounted for as an implicit cost, then the economic cost of producing rice and wheat was even higher. At a time of worsening water scarcity, the problem was further exacerbated. Traditional rice planting also required a lot of time: the seedlings that grew in the nursery took 15–20 days before they were ready to be transplanted to the field. Then, there were associated activities such as the prevention of weed growth and of insect and pest attacks, leading farmers to spray weed killers, pesticides, and insecticides. Sometimes, the problem with the soil was that plants did not fast enough, so nutrient-based fertilizers were used. The cost of rice cultivation in India was around ₹70,000–95,000⁹ per hectare, depending on the region or area.¹⁰ Wheat cultivation cost ₹55,000–75,000 per hectare, and maize cost ₹50,000–96,000 per hectare,

⁵ "India: Distribution of the Workforce across Economic Sectors from 2011 to 2021," Statista, accessed February 12, 2024, <https://www.statista.com/statistics/271320/distribution-of-the-workforce-across-economic-sectors-in-india/>.

⁶ "Crop," Directorate of Agriculture, Government of Assam, India, accessed February 28, 2024, <https://diragri.assam.gov.in/portlets/crop>

⁷ "Milk Production in India," Ministry of Fisheries, Animal Husbandry & Dairying, September 07, 2022, <https://pib.gov.in/FeaturesDeatils.aspx?NotelId=151137>

⁸ Rajan Bhatt, Pritpal Singh, Akbar Hossain, and Jagadish Timsina, "Rice–Wheat System in the Northwest Indo-Gangetic Plains of South Asia: Issues and Technological Interventions for Increasing Productivity and Sustainability," *Paddy Water Environment* 19, no. 3 (2021): 345–365, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7898255/>.

⁹ ₹ = INR = Indian rupee; ₹1 = US\$0.0122 on June 1, 2023.

¹⁰ "Price Policy for Kharif Crops—The Marketing Season 2023–24," Commission for Agriculture Cost and Prices, March 2023, <https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1930443>

depending on the various regions (see Exhibit 1).¹¹ Rice yields were 42 quintals per hectare, wheat was 35 quintals per hectare, and maize was 34 quintals (2,708kg) per hectare in 2023.¹² Cultivating rice, wheat, and maize therefore generated low incomes and profits at existing market prices.

FODDER CULTIVATION

The Status of Fodder in India

The status of fodder crops in India was a matter of concern. India had a large livestock production, but the feed for livestock was limited. The demand for fodder, however, was increasing due to the rise in livestock numbers. The country's livestock population was 535.78 million in 2019, up by 4.6 per cent compared to 2012.¹³ The shortage of fodder crop production was also because only 4.9 per cent (9.13 million hectares) of the country's gross cultivated area was used to grow fodder plants.¹⁴

For the year 2020, Demand was at 1134 million tonnes (Mt) for green fodder and at 630 Mt for dry fodder, while supply was at 405.9 Mt for green fodder and at 473 Mt for dry fodder (Exhibit 2). Therefore, the shortage of green fodder was around 24.8 per cent and of dry fodder approximately 39 per cent.¹⁵ The shortfall in fodder crops impacted livestock-related product production, affecting Indian farmers' livelihoods. This shortfall would also affect the cost of animal feed and the price of meat, milk, and other products. In 2025, the deficit of green fodder was projected to reach 24.92 Mt, while of dry fodder it was projected to reach 24.87 Mt (see Exhibit 2).

Green fodder was more nutritious and in higher demand than dry fodder. The analysis of the gross value added from fodder in Uttar Pradesh between 2012 and 2020 fluctuated—peaking at ₹32.21 billion in 2012 and at its lowest of ₹27.25 billion in 2015–2017; it was more stable in recent years (see Exhibit 3). These data suggested that fodder's contribution to Uttar Pradesh state's growing economy was stable. The state performed well as compared to country's average, as the demand–supply gap for green and dry fodder was 23.6 per cent and 30.4 per cent, respectively.¹⁶

The Advantages of Growing Fodder

India was a water-scarce country. Many places were drought-prone, and in the context of several climatic changes, there had been an increase in the number of droughts. From 2012, the proportion of drought-prone

¹¹ "Price Policy for Rabi Crops—The Marketing Season 2022–23," Commission for Agriculture Cost and Prices, July 2021, <https://cacp.da.gov.in/ViewReports.aspx?Input=2&PagelD=40&KeyID=796>.

¹² "Foreign Agricultural Service," U.S. DEPARTMENT OF AGRICULTURE, accessed February 28, 2024, <https://ipad.fas.usda.gov/countrysummary/Default.aspx?id=IN&crop=Corn>

¹³ "Department of Animal Husbandry & Dairying Releases 20th Livestock Census; Total Livestock Population Increases 4.6% over Census-2012, Increases to 535.78 Million," Ministry of Fisheries, Animal Husbandry & Dairying, October 16, 2019, <https://pib.gov.in/PressReleasePage.aspx?PRID=1588304#>.

¹⁴ "National Action Plan on Fodder & Feed Security Programme," Department of Animal Husbandry & Dairying, accessed December 1, 2023, https://www.dahd.nic.in/sites/default/files/final%20NAP_0.pdf.

¹⁵ Mutturaj Yadav Earagariyanna, Jagadeeswary Venkayala, Satyanarayan Kammardi, and Mohankumar Sriramaiah, "Fodder Resource Management in India—A Critical Analysis," *International Journal of Livestock Research* 7, no. 7 (2017): 14–22, <https://www.semanticscholar.org/paper/Fodder-Resource-Management-in-India-A-Critical-Earagariyanna-Venkayala/6f83830cff8bab904b38154752add9093088be67>.

¹⁶ Ajoy Kumar Roy, Rohirh Kumar Agarwal, Nitish Rattan Bhardwaj, A. K. Mishra, and Sanat Kumar Mahanta, "Revisiting National Forage Demand and Availability Scenario," chap. 1 in *Indian Fodder Scenario: Redefining State Wise Status* (Jhansi, India: All India Coordinated Research Project on Forage Crops and Utilization, 2019), pp. 1–21.

regions had increased by 57 per cent compared to 1997.¹⁷ For that reason, farmers sought drought-tolerant crops that could still provide some yields and generate income. Sorghum, one of the main fodder crops, was known for its drought tolerance. Another, Napier grass, was a fast-growing grass that could be grown in various soils and climatic conditions. Bajra was another drought-tolerant crop and good source of protein and fibre for livestock. Fodder cultivation was also a profitable business for farmers in drought-prone regions, giving them the option of a suitable crop to switch to. Fodder could be grown with less water and over multiple harvests from the same land.

Due to monoculture, cereal-based cropping patterns led to disguised unemployment in the agriculture sector, as farmers were engaged for only 3–4 months of the year. The unemployment rate was 7.8 per cent in March 2023.¹⁸ Agriculture even faced disguised employment, which could decrease unemployment in sectors like fodder cultivation.

Fodder could also be grown as an intercropping crop in standing crops and orchards. Fodder crops required less maintenance and almost no pesticides, fungicides, and weedicides. Hence it reduced input costs too. Labour costs were also lower. Fodder could therefore provide additional income for farmers without much effort. Fodder crops were harvested multiple times a year, enabling 2–6 cuts depending on the crop variety. The Indian livestock industry was growing, and demand for green fodder was increasing because it resulted in higher milk yields than dry fodder. It was therefore beneficial to cultivate green fodder crops.¹⁹

THE INTERVENTION OF PRAJIV FARM SOLUTIONS

Prajiv Farm Solutions was based in Kanpur, Uttar Pradesh, and produced green fodder for animal feed. Founded in 2016 by Awasthi, a veterinary science graduate from G. B. Pant University of Agriculture and Technology and with an agribusiness MBA from the Symbiosis Institute of International Business, his company aimed to address the growing demand for high-quality fodder in the dairy industry. Awasthi's extensive experience in the industry, gained during his five-year tenure with companies such as Kemin Industries Inc. had enabled him to recognize the untapped potential of the fodder business in Kanpur. Prajiv Farm Solutions focused on cultivating various fodder crops including berseem, sorghum, and Napier grass, which were crucial for enhancing animal health and reducing feed costs for dairy farmers.

Prajiv Farm Solutions met dairy farmers' fundamental needs by providing ample green fodder and promoting sustainable agricultural practices. Driven by a commitment to generate sustainable income from agriculture and to create rural employment opportunities, the company helped dairy farmers reduce feed costs and encouraged more farmers to get involved in the green fodder production chain. This approach benefited individual farmers and improved soil health through efficient cultivation practices. With a strong emphasis on incorporating more farmers into the green fodder production ecosystem, Prajiv Farm Solutions fostered a network of sustainable agricultural practices, particularly within the dairy sector. By addressing the vital role of dairy in Indian agriculture and striving to meet the demand for high-quality fodder, the company aligned its efforts with the broader goal of enhancing animal welfare and improving rural livelihoods.

¹⁷ "India: Managing the Complex Problem of Floods and Droughts," The World Bank, August 17, 2023, <https://www.worldbank.org/en/news/feature/2023/08/17/india-managing-the-complex-problem-of-floods-and-droughts#>.

¹⁸ "Monthly Unemployment Rate in India from October 2021 to April 2023," Statista, accessed February 12, 2024, <https://www.statista.com/statistics/1341775/india-unemployment-rate-monthly/>.

¹⁹ "Number of Livestock and Poultry in India (2003–2019)," Statista, accessed August 10, 2023, <https://www.statista.com/statistics/622684/livestock-poultry-inventory-india/#:~:text=The%20population%20of%20poultry%20stood,to%20livestock's%20only%204.6%20percent.>

Prajiv Farm Solutions operated across 24 acres of land. In kharif season, the organisation cultivate hybrid sorghum on 12 acres, Rice on 5 acres and urad on 7 acres of land. In rabi, they cultivate, Berseem on 14 acres of land, wheat on 5 acres and mustard on 5 acres. Therefore, Prajiv Farm Solutions adopted a mix of crops (i.e., cereals, pulses, and vegetables) to ensure food security.

Business Model

As India had a large and growing livestock population, there was a shortage of green fodder in Uttar Pradesh of around 26 per cent.²⁰ Prajiv Farm Solutions cultivated hybrid green fodder throughout the year and sold it through distributors and directly to end customers. It took almost four years to firmly establish this model. Prajiv Farm Solutions had its own machinery for chopping fodder, and hired a vehicle to transport it to customers and distributors. The company was profitable because production and distribution costs ranged between ₹2.5 and ₹2.9 per kilogram. The revenue per kilogram was ₹3.5 for sorghum and ₹4.0 for berseem—almost 1.5 times greater than production costs. The farm was also involved in continuous research and development and adopted innovative practices to improve crop yield and quality.

Operations and Human Resources

The company's operations were entirely held in the village, where it had a John Deere tractor with a trolley for bringing in crops from the field, a fodder-chopping machine linked to the tractor, and a chopping and packing centre. The company had four permanent labourers and 6–7 temporary local ones who worked in shifts to cut, transport, chop, and pack the fodder. From afternoon until evening, labourers harvested the fodder crops in the field, then loaded them onto the tractor to transport them for chopping. The ratio of men to women 2:3 at the time of field cutting. Depending on the order, 25–30 quintals (2,500–3,000 kg) of fodder were cut daily in the afternoons (4–7 p.m.), with a daily labour requirement of 10 people. The crops were kept at the chopping centre overnight, and the following day, starting at 3:30 a.m., labourers chopped and packed the fodder for distribution to customers. Four labourers were responsible for chopping and packing.

Hybrid sorghum (sweet sorghum and hybrid Napier grass) was cultivated in Kharif season.. Every 30–35 days, it reached full growth and was ready to be cut. Generally, hybrid sorghum could be cultivated in different plots, so one plot was cut for daily requirements and the other plots were available on rotation for further orders. In the Rabi season, Berseem is grown to meet the requirement of the green fodder. The company needed 10 employees daily to cut and prepare hybrid sorghum for market (see Exhibit 4). At the end of the hybrid sorghum season, there was a gap of at least 40–45 days when there was no supply to customers from the farm. During this period the buyers have to rely on other suppliers to meet their requirement at a 15–20 percent higher price.

A single crop, such as sorghum, gave six cuts, and berseem gave four in a month gap. Fodder crops were grown for daily supply, and so required a 30-day cycle. The daily supply required to meet customer demand was 30 quintals (3,000 kg); in a month, the company needed 900 quintals (90,000 kg) of green fodder. One acre of land yielded 80 quintals (8,000 kg); therefore, Awasthi needed a minimum of 11.25 acres of land to meet demand.

The company valued its employees and offered a comprehensive benefits package, including fixed annual leave and accommodation, while its operations ensured that local animals had access to fresh, nutritious fodder. Prajiv Farm Solutions was committed to sustainable farming practices, using only organic fertilizers.

²⁰ Roy et al., "Revisiting National Forage Demand."

Sales and Distribution

The sales and distribution phase at Prajiv Farm kicked off promptly at 6:30 a.m., and ran until 11 a.m., spanning 4.5 hours. The distribution process was meticulous and customer-oriented, catering primarily to small, medium, and large dairy farmers whose requirements ranged from 40–300 kg of produce. With a direct-to-customer approach, the farm employed a Mahindra Pik-Up vehicle to transport fodder directly to customers and distributors. This approach ensured prompt delivery and fostered a personalized connection with customers. Transportation costs, totalling ₹2,000 daily, included vehicle expenses of ₹1,500 and ₹500 for the driver and assistant managing distribution.

The farm used plastic bags, available in sizes of 20 kg and 40 kg for packaging the distributed produce, which allowed for convenient handling and transportation to customers. Prajiv Farm operated with a well-defined pricing strategy and sold its produce at an average rate of ₹350 per quintal for sorghum and ₹450 per quintal for berseem. The company sold an average of 25 quintals (2,500 kg) daily, reflecting the demand for its high-quality crops. This successful sales rate demonstrated the value of its products and contributed significantly to its overall business revenue (see Exhibit 5).

Stakeholders

Prajiv Farm Solutions had four types of stakeholders: the owner, farm labourers, its distribution channel partner, and end customers. Awasthi funded the business operations, had his own tractor and chopping machine, and owned the farmland. Four permanent employees were available for the full year's operations: one manager; two who worked on cutting and chopping with other, temporary employees; and one driver transporting fodder from field to farm. Other labours were temporary: women worked in cutting, while men worked in cutting, chopping, and other activities on the farm. There was a rented vehicle for customer distribution purposes. The farm had a loyal distributor partners and customers who had worked with Awasthi for 4–5 years.

Value Chain of Prajiv Farm Solutions

Prajiv Farm Solutions adopted a unique business model and value chain to cultivate and distribute green fodder. The company acquired high-quality fodder seeds and utilized sustainable agricultural methods. Strong client ties were fostered through Awasthi's direct-to-customer distribution strategy, which guaranteed that customers received fresh and nourishing fodder. The company successfully addressed the demand for high-quality fodder, lowered feed costs, and generated employment opportunities while positively impacting animal welfare and rural livelihoods through integrating technology, human resource management, and efficient infrastructure.

THE DILEMMA

As Awasthi started thinking about expanding his business, he wondered what the most suitable model would be. How could farmers be convinced to take up fodder cultivation as a business? Would they see it as a profitable venture? Awasthi used Porter's value-chain framework to analyze the areas of his business that generated value. He further explored how he could reach more distant markets using refrigerated trucks, which would cost ₹3.5–4.0 per kg above the existing price. As green fodder was a low-value crop, would customers be willing to pay double for it? Would a hub and spoke model be suitable? Awasthi also wondered whether forming farmer–producer organizations was a viable solution to address scalability. He had to consider the strengths and weaknesses of all these options before deciding on the most feasible.

EXHIBIT 1: OPERATIONAL COSTS FOR RICE, MAIZE, AND WHEAT

	Rice (₹/hectare)	Maize (₹/hectare)	Wheat (₹/hectare)
Operational costs	54,670	39,196	45,339
Human labour			
Hired labour	13,597	11,264	5,842
Family	11,731	7,886	9,258
Total	25,329	19,150	15,106
Animal labour			
Hired	0	0	10
Owned	14	0	69
Total	14	0	79
Machine labour			
Hired	8,132	8,181	10,482
Owned	819	430	595
Total	8,950	8,611	11,077
Seeds	4,842	5,617	4,203
Fertilizer and manure			
Fertilizer	4,597	3,111	4,777
Manure	125	0	30
Total	4,722	3,111	4,806
Insecticides	972	174	189
Irrigation charges	8,471	1,577	8,713
Crop insurance	0	0	0
Interest on working capital	1,301	949	1,093
Miscellaneous	69	8	74
Fixed costs	19,987	15,197	27,209
Rental value of owned land	15,780	12,882	22,688
Rental paid for leased in land	438	0	181
Land revenue and taxes	2	4	2
Depreciation on farm implements and buildings	700	336	684
Interest on fixed capital	3,068	1,974	3,655

EXHIBIT 1: CONTINUED

	Rice (₹/hectare)	Maize (₹/hectare)	Wheat (₹/hectare)
Total costs	74,657	54,393	72,549
Yield (qt/ha) – main product	36.15	27.08	38.27
MSP per qt	2,125		
Cost/qt	2,065.20		
Net profit	59.80		

Note: All data are in hectares (1 hectare = 2.471 acres); qt/ha = quintal per hectare; 1 quintal = 100 kilograms; Minimum Support Price (MSP).

Source: "Price Policy Reports," Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India, March 5, 2024, <https://cacp.dacnet.nic.in/>.

EXHIBIT 2: DEMAND AND SUPPLY OF FODDER IN INDIA (1995–2025*) (MILLION TONNES)

Year	Supply		Demand		Deficit as percentage demand (%)	
	Green	Dry	Green	Dry	Green	Dry
1995	379.3	421	947	526	59.95	19.95
2000	384.5	428	988	549	61.10	21.93
2005	389.9	443	1,025	569	61.96	22.08
2010	395.2	451	1,061	589	62.76	23.46
2015	400.6	466	1,097	609	63.50	23.56
2020	405.9	473	1,134	630	64.21	24.81
2025*	411.3	488	1,170	650	64.87	24.92

Note: * = estimated.

Source: "Supply and Demand of Green and Dry Fodder in India (1995–2025*)," Indiastat, accessed February 13, 2024, <https://www.indiastat.com/table/agriculture/supply-demand-green-dry-fodder-india-1995-2025/362246>.

EXHIBIT 3: GROSS VALUE ADDED FROM FODDER IN UTTAR PRADESH (2012–2020) (₹ BILLIONS)

Fiscal year	Gross value added
2012	32.21
2013	31.88
2014	31.05
2015	27.25
2016	27.25
2017	27.25
2018	31.56
2019	31.91
2020	31.91

Source: Sandhya Keelery, "Gross Value Added from Fodder in Uttar Pradesh India FY 2012–2021," Statista, September 25, 2023, <https://statista.com/statistics/1083790/india-economic-contribution-of-fodder-uttar-pradesh/>.

EXHIBIT 4: OPERATIONAL WORKING TIMES AND RATES FOR PRAJIV FARM SOLUTIONS

	Men	Women
Time	2–7 p.m. 3:30 a.m. to 6:30 a.m.	2–7 p.m. Not called in the morning due to safety concerns
Rate/day	₹350	₹125
Number of labourers	4	6

Source: Himanshu Awasthi (director, Prajiv Farm Solutions), in discussion with the case author, August 12, 2023.

EXHIBIT 5: OPERATIONAL COST AND YIELD PER ACRE FOR PRAJIV FARM SOLUTIONS (IN ₹)

	Sorghum	Berseem
Plowing cost	1,500	1,500
Seed cost	2,500	2,500
Fertilizer cost	2,500	1,500
FYM cost	2,000	2,000
Irrigation cost	2,000	1,000
Labour cost	1,500	1,500
Cutting and chopping cost	96,000	48,000
Transportation cost	24,000	24,000
Total	132,000	82,000
Yield (quintal/acre)	528	280

Note: Farm Yard Manure (FYM) = ; 1 quintal = 100 kilograms.

Source: Himanshu Awasthi (director, Prajiv Farm Solutions), in discussion with the case author, August 12, 2023.