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Agribusiness dynamics of the onion industry in the first district of Ilocos Sur, Philippines: Evidence-based inputs for business model canvas development

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ABSTRACT

This study examined the agribusiness dynamics implemented by onion farmers in the First District of Ilocos Sur, Philippines, focusing on the key components of the Business Model Canvas: key partnerships, key activities, key resources, and value propositions. A descriptive–correlational research design was employed using a structured survey questionnaire. Slovin's formula was applied to determine the sample size, resulting in 300 onion farmers selected from a population of 1,343 farmers across eleven municipalities. Results revealed that 91.3% of farmers collaborate with partners, primarily cooperatives (35%) and fellow farmers (31.1%), with purchasing farm inputs (40.3%) as the most common collaborative activity. Lack of trust between partners (25.2%) was identified as the primary constraint in maintaining partnerships. In terms of key activities, land preparation (18.8%) was identified as the most important activity and also the most time-consuming (28.1%). Tractors and farm machinery (37.5%) were the most needed resources, while high cost of farm inputs (26.1%) emerged as the major challenge in farming operations. Regarding key resources, land was identified as both the most essential (12.5%) and the most difficult resource to access (16.2%), with 73.2% of farmers relying on personal savings and investments to finance farm inputs and 60.4% acquiring machinery through personal purchase. For value propositions, high quality and freshness (30.4%) were the most important determinants of onion value, and direct consumers (38.7%) represented the primary market channel. Proper seed selection (22.4%) was the most common practice to ensure onion quality, while the high cost of farm inputs (21.7%) remained the main barrier to maintaining product quality and value. The findings highlight critical agribusiness factors affecting onion production and provide evidence-based inputs for strengthening business strategies and policy interventions in the local onion industry.

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INTRODUCTION

Allium cepa L., commonly known as onion, is acknowledged worldwide as an essential vegetable crop, valued not only for its culinary uses but also for its various health benefits.

Onions are believed to be among the earliest cultivated crops due to their durability compared to other available foods, their transportability, ease of cultivation, and ability to thrive in diverse soils and climates. Moreover, onions played a significant role in sustaining human life; they alleviated thirst and could be dehydrated and stored for future consumption during times of scarcity. While the precise origins of the onion remain uncertain, numerous ancient records highlight its significance as a food source, as well as its applications in art, medicine, and mummification practices.

One of the most significant spice commodities cultivated worldwide, onions (*Allium cepa*) are used in a variety of ways. Onions have been shown in numerous studies and research projects to have numerous health benefits, including reducing blood uric acid, antidiabetic effects, hypotensive effects, hypolipidemic qualities, and ameliorating renal failure. The liver, colon, heart, testis, kidney, bone marrow, and brain are among the organs and tissues where onion and its primary constituents have been shown to have a range of protective effects in numerous studies (Dorrigiv *et al.*, 2021).

By 2026, onion production is expected to reach 102 million metric tons (ReportLinker, 2022), representing a 0.5% annual increase since 2017. With 2.67 MMT of onions produced in 2021 and 22-25% of the world's total production since 2017, India has emerged as the leading producer in recent years. In 2021, China produced 2,042 MMT of onions, making it the second-largest producer. Egypt, the United States, and Turkey followed with 891,000 MMT. With an annual production of 93,226,400 tones worldwide (FAOSTAT, 2021), onions are the second most consumed vegetable in the world, after potatoes (Hanci, 2018).

Kumar *et al.*'s 2020 study, which focused on the Nuh district of Haryana, India, which produces the most onions, found that the main issues facing onion farmers in the production process were high pesticide costs, a lack of knowledge about recommended fertilizer dosages, a lack of knowledge about various pest and disease control measures, difficulty identifying pests and diseases, a lack of knowledge about seed/seedling treatment, high transportation costs, no minimum support prices, a large number of middlemen in the marketing process, excessive price fluctuations, a shortage of technical manpower, increased power and fuel prices, fluctuations in raw material and procurement, and a lack of high-quality packaging. The government should make adequate arrangements for timely supply of quality seeds and other inputs at reasonable prices to the onion growers so as to increase productivity of onion crop. As a result, they also offer solutions to the aforementioned issues, such as the provision of sufficient scientific storage facilities to the producer in order to distribute sales throughout the year with the least amount of both quantitative and qualitative losses. Credit facilities secured by the stored produce should be made available to producers so they can fulfill their short-term financial obligations. Cooperatives should be encouraged to play a significant role in onion marketing, particularly for small farmers who lack the capacity to retain customers and who need sufficient funding to build storage facilities. Creation of novel cultivars with improved storage quality that are appropriate for varying growth seasons. As a result, arrivals and pricing will exhibit less seasonality.

An essential component of a country's economic growth is agriculture. In order to take advantage of the countless opportunities that come with farming, agricultural nations like the Philippines make use of their rich and vast land resources. Many developing nations' governments place a high priority on the agricultural industry as a source of food, revenue, and jobs, especially in rural areas (Rupasinghe *et al.*, 2017; Sanyang, 2014).

In the Philippines, the area planted and the amount of onion produced have fluctuated. Between 2011 and 2020, production increased by 10.72% annually on average, while planted area increased by 4.91% annually. Regarding the precipitous drops seen, Typhoons Lando and Nona in 2015 had a negative impact on crop standing. In 2016, there was an onion armyworm outbreak in Nueva Ecija, Pangasinan, and Tarlac, in addition to damage from bulb rot disease and weevil infestations (Tabago, 2022).

This research has the potential to significantly empower the local onion sector and enhance the agricultural activities of onion producers. Incorporating the Business Model Canvas in onion industry enables to make the step for Analyzing and understanding the business factors within the onion industry is essential, as it can assist in addressing production, marketing, and financial challenges faced by farmers to achieve self-sufficiency in onion production. Relevant organizations can utilize the findings to develop possible intervention strategies that enable local farmers to capitalize on the promising prospects in onion cultivation, ultimately improving the overall competitiveness of the onion industry.

Statement of the problem

This study determined the agribusiness dynamics implemented by the onion farmers in the first district of Ilocos Sur. Specifically, it answered the following questions: (1) What is the socio-demographic profile of the onion farmers in the first district of Ilocos Sur? (2) What are the business dynamics implemented by the onion farmers in the first of Ilocos Sur along: [a] Key Partnership; [b] Key Activities; [c] Key Resources; [d] Value Propositions.

MATERIALS AND METHODS

Study area

The study was conducted in the First District of Ilocos Sur, Philippines, one of the major onion-producing areas in the region. The district comprises several municipalities including Bantay, Cabugao, Caoayan, Magsingal, San Ildefonso, San Juan, San Vicente, Sta. Catalina, Sto. Domingo, Sinait, and Vigan City. Onion farming serves as an important livelihood activity for smallholder farmers in these municipalities.

Research design

A descriptive–correlational research design was employed to examine the agribusiness dynamics of onion farmers based on the components of the Business Model Canvas, namely key partnerships, key activities, key resources, and value propositions. The design enabled the description of socio-demographic characteristics of the respondents and the analysis of agribusiness practices within the onion industry.

Population and sampling procedure

The population consisted of 1,343 onion farmers cultivating 0.5 hectare or less of land in the First District of Ilocos Sur. The sample size was determined using Slovin's formula, resulting in 300 respondents. Respondents were proportionally distributed across the eleven municipalities according to the number of registered onion farmers obtained from the respective Municipal Agriculture Offices (Table 1).

Table 1. Distribution of the respondents

Municipality	Onion farmers (N)	Respondents (n)
Bantay	171	38
Cabugao	164	37
Caoayan	179	40
Magsingal	63	14
San Ildefonso	13	3
San Vicente	73	16
San Juan	123	27
Sto. Domingo	106	24
Sta. Catalina	70	16
Sinait	310	69
Vigan	71	16
Total	1,343	300

Data collection

Primary data were collected using a structured survey questionnaire administered to onion farmers. The questionnaire consisted of two parts:

Part I- Socio-demographic profile of respondents (age, gender, educational attainment, and civil status)
Part II- Agribusiness dynamics based on the Business Model Canvas components:

1. Key partnerships
2. Key activities
3. Key resources
4. Value propositions

The questionnaires were distributed personally to the respondents with the assistance of local agricultural offices.

Instrument validation and reliability

The research instrument underwent content validation by five experts in agriculture and business management. The instrument obtained a mean validity rating of 4.85, indicating a highly valid instrument. A pilot test was conducted among ten onion farmers in Barangay Morong, Badoc, Ilocos Norte. Reliability analysis using Cronbach's alpha yielded a coefficient of 0.927, indicating excellent internal consistency.

Data analysis

The collected data were analyzed using descriptive statistical techniques. Frequency counts and percentages were used to describe the socio-demographic profile of respondents and agribusiness practices. Weighted means were computed for selected categorical variables by assigning numerical codes to response categories. The statistical analysis provided a descriptive summary of the agribusiness dynamics within the onion industry.

Ethical considerations

Ethical clearance for the study was obtained prior to data collection. Permission was secured from the respective Municipal Agriculture Offices, and participation of respondents was voluntary. The confidentiality and anonymity of respondents were strictly maintained throughout the research process.

RESULTS AND DISCUSSION

Age

Table 2 reveals that onion farming in the first district of Ilocos Sur is dominantly undertaken by older adults, reflecting that the industry is driven by individuals with experience and traditional practices. The result of the study corresponded the study conducted by Bhujbal and Goyal (2025), in farming practices younger farmers aged under 35 displays higher adoption rates to innovative practices and participation in digital marketplaces, while farmers aged 35-50 tended rely on the traditional methods.

Sex

The result of the study show that majority of onion farmers are male, indicating that the onion production in the First District of Ilocos Sur is carried out by men. Farming labor, decision-making and management of onion farming remain male-led, reflecting a traditional gender role in Philippine agriculture.

Table 2. Socio-demographic profile of the respondents

Particulars	Frequency	Percentage
Age		
Below 20	1	0.3
21-30	23	7.7
31-40	72	24.0
41-50	63	21.0
51-60	62	20.7
Above 60-year-old	79	26.3
Total	300	100.0
Mean	4.33	
Gender		
Male	213	71.0
Female	87	29.0
Total	300	100.0
Mean	1.29	
Educational attainment		
No formal education	2	0.7
Elementary level	81	27.0
High school level	147	49.0
College level	62	20.7
Technical/Vocational	8	2.7
Total	300	100.0
Mean	2.98	
Civil status		
Single	62	20.7
Married	208	69.3
Widowed	28	9.3
Separated	2	0.7
Total	300	100.0
Mean	1.90	

Educational attainment

In Table 2 showed that majority of the onion farmers attained high school level. This implied that basic knowledge in farming management exist but technology adaptation for productivity becomes challenge. This corroborates the findings of Velza *et al.* (2023) that

productivity and adoption to new technology and practices become challenges to older and less educated farmers while income and resources significantly affect their profitability. Similarly, Gadre *et al.* (2012) states that educated farmers has a higher awareness of market trends, sustainable practices and innovation advancement which directly impact the efficiency of the entire supply chain.

Table 3. Key partnership of the onion industry

Particulars	Percentage
Farmers collaborating with organizations or fellow farmers	
Yes	91.3
No	3.3
Sometimes	5.3
Total	100
Main partners	
Cooperatives	35
Other Farmers	31.1
Government Agencies	15.4
Private Agencies	10
Academic Institution	6.8
Non-government Agencies	1.6
Total	100
Key activities onion farmers collaborated	
Purchasing farm inputs (seeds, fertilizers, pesticides)	40.3
Selling onions to buyers, traders, exporters	29.6
Training and technical assistance	15.0
Sharing farm equipment and infrastructure	10.8
Accessing financial support (loans, grants)	4.2
Total	100
Means in establishing partnership	
Personal connection	63.6
Cooperative membership	20.3
Government programs	9.1
Private sector outreach	7.0
Total	100
Type of partnership that would improve onion farming	
Stronger government support programs	24.4%
Improved cooperation among farmers	20.6%
Enhance training and technical assistance	17.1%
Biggest challenge in maintaining partnership	
Lack of trust between partners	25.2%
Unstable market prices	22.5%
High cost of farm inputs	21.4%

Civil status

Majority of the onion farmers are married. This implied that farmers serve as heads of their households and that farming remains as the key source of livelihood and family support.

Key activities onion farmers collaborated

This Table 3 presents the key activities where farmers collaborate with their partners. Most of onion farmers collaborate in purchasing of farm inputs. This corroborates to the findings of the study of Tran *et al.* (2022) that cooperatives provide the means in accessing advance technologies and farm inputs to small – scale farmers to help them in increasing technical proficiency and yield. Additionally, by providing access to market linkages and giving financial aid, cooperatives help in increasing income of farmers.

Means in establishing partnership

Table 3 presents how the farmers establish their connection with their partners. Majority of the farmer use their personal connection in establishing their partnership. This corroborates to the findings of the study of Scott *et al.* (2021) that American Midwest new farmers used personal networks in accessing the markets. The research has found that social connectedness of farmers is an important in entering

and sustaining market relationships. This personal connection not only promotes trust- building and exchange of information's, but also crucial for establishing cooperatives partnerships and other market sectors.

Type of partnership that would improve onion farming

Most of the onion farmers would like to add the stronger government support programs to improve onion farming. This corroborates to the findings of the study of Philippine Department of Agriculture (2023) that agricultural interventions program from the government like distribution of seeds and fertilizers and giving cash assistance has showed improvements in farm outputs and overall livelihoods, the economic status of farmers was improved through the government agricultural intervention programs such as distribution of farm inputs and cash assistance.

Biggest challenges in maintaining partnership

Lack of trust between partners hinders the effectivity and productivity of the onion industry. This corroborates to the findings of the study of Taylor et al. (2023) in their analysis drawing attention to the paradox of trust specifically in business, pointing out that when partners who are starkly different from each other the development of trust is much difficult, where the collaboration between parties becomes heavily affected.

Table 4. Key activities of the onion industry

Particulars	Percentage
Most important activities	
Land preparation	18.8%
Seed selection and planting	16.8%
Irrigation and water management	14.9%
Time consuming and resource intensive activity	
Land preparation	28.1%
Planting and growing onions	27.9%
Pest and disease management	22.1%
Resources needed the most	
Tractors and farm machinery	37.5%
Fertilizers and pesticides	25.9%
Irrigation systems	18.5%
Mode of distribution	
Direct to consumers	51.6%
Through middlemen or traders	39.5%
To large buyers/exporters	5.6%
To cooperatives or farmer's association	3.4%
Partners in distribution	
Family members	35.1%
Hired laborers	40.6%
Private companies (suppliers, buyers)	35.1%
Challenges in carrying out key activities	
High cost of farm inputs	26.1%
Unpredictable weather and climate change	16.9%
Lack of irrigation and water supply	16.3%

Most important activities

Table 4 presents the most important activities in onion farming is land preparation, reflecting that a well-prepared soil is the key for productive farming. This corroborates to the findings of the study of Imam *et al.* (2023) the most crucial step in cultivation is undoubtedly preparation of the land or the land preparation as its forms the foundation of all farming activities. It's important for the land to be well-prepared because this not only aids in producing bountiful yield but also recycle plant nutrient without letting them go to waste and also control weeds eliminating crop weed competition.

Time consuming and resource intensive activity

Table 4 presents the activity that takes up most of farmers time and resources is land preparation, while it

is the most important the proper preparation consumes necessary resources and time. A study by Myeni *et al.* (2021) on food security and smallholder adaptability reported that land preparation is one of the most important activities in farming operations, often requiring the highest labor and time investment compared with other farming activities, particularly when it is carried out manually.

Resources needed the most

Table 4 presents the tools, equipment and resources need most in onion farming activities. Tractors and farm machinery is the most needed, which reflects that the onion farming relies on traditional farming method where technology and innovations are still lack. This corroborates to the findings of the study of Ndip *et al.* (2025) using agricultural machinery like tractors in farming activities such as land preparation reduces the need for agricultural labor which gives farmers power to properly time their farming operations.

Mode of distribution

Table 4 presents how onion farmers sell their onions. Farmers tend to have a direct communication from their consumers, which implies that farmers have a good communication skill, risk takers and has a convincing power where they can sell their products having higher profit by eliminating middlemen. This corroborates to the study of Ahearn and Stern (2013) there have been an increased in the number of farmers who executed direct marketing and this can be due to the couple of reasons that direct marketing has relatively few entrepreneurial risks and that eliminating intermediaries and selling directly to consumers allow farmers to sell their products at higher prices that gives them higher profit.

Partners in distribution

Table 4 presents who farmers work with in carrying out their farming activities. Farmers tend to hire laborers to carryout farm activities. Nigel (20216) gives a summary to the agriculture labor market, highlighting the role of hired labor in agriculture. To supplement workforce particularly in larger operations where household labor may not be enough, farmers depend on hiring for labor to get the work done. Their report strengthens the claim that hired laborers are important component of farming activities.

Challenges in carrying out key activities

The high cost of farm inputs is biggest challenges for farmers to carry out farming activities, reflecting financial sufficiency is one of the major keys to successful farming business. This corroborates to the findings of the study of Sanchi *et al.* (2022) on implications of rising cost of farm inputs in Nigeria, the continuously getting high prices of farm inputs like fertilizers and the inadequate cash assistance remains a major problem to effective farming.

Essential resources in onion farming

Land is most important resources for onion farmers, which reflect the importance of soil and its health for successful farming. This corroborates to the findings of the study of Yusuf (2024), that land have a significant economic factor that impacts all farming activities and the profitability and not just only a physical asset (Table 5).

Most difficult resources to access

Table 5 presents the percentage of most difficult resources to be access by the onion farmers. Land is the most important yet most difficult to access, implies that farmers are tenants and this lessen the profitability of farming. This corroborates to the findings of the study of Kishaija *et al.* (2025) in Uganda where the land tenure systems were slowly transitioning from agricultural land to residential. According to reports, traditional agricultural land systems have been damaged by problems with land tenure insecurity and unclear ownership, which have undermined long-term investment and sustainable agricultural output. Land markets are nonetheless flawed because of legal ambiguities and unstable tenure.

Sources of farming inputs

Farmers primary uses their own saving and investments in funding their continuous operations in their farm. This corroborates to the findings of the study of Strzelecka and Zawadzka (2023) that to finance

agricultural activities farmers initially use their personal savings. This emphasizes the importance of self-financing, especially in regions where there is a limited access to credit. The results suggest that savings enhance farmers adaptability to economic shocks and not only it provides the farmers with necessary capital for investment.

Modes of acquiring farming equipment and machinery

Farmers acquire their farm equipment and machinery through personal purchase, this behavior implies that farmers are absorbing the full cost of equipment and machineries with or without subsidies. An article by Purdue Agriculture (2014), reported that the farm equipment and machineries of farmers are mostly acquired through personal purchase, this gives the control and gain title over their farm equipment.

Challenges in accessing farming resources

The high cost of farm inputs is the biggest challenges of farmers in accessing farming resources, this implies that the financial vulnerability of farmers starts on the fundamental of production cycle which prevents them in achieving a high-quality yield and product. This corroborates the findings of the study of Duntoye et al,. (2024) that 83% of farmers respondents in Northern Nigeria answered that the high prices of farm inputs like pesticides and fertilizers are major problem in maximizing farm yield. Additionally, financial problems have made it more difficult to acquire necessary equipment and inputs especially for small holder farmers.

Table 5. Key resources of the onion industry

Particulars	Percentage
Essential resources in onion farming	
Land (farmland for cultivation)	12.5%
Water supply/irrigation	10.5%
Seeds and planting materials	10.0%
Fertilizers and pesticides	10.0%
Most difficult resources to access	
Land	16.2%
Farming equipment and machinery	14.9%
Financial support	14.2%
Sources of farming inputs	
Own savings and investments	73.2%
Government programs	11.0%
Cooperatives or farmers' organization	8.5%
Modes of acquiring farming equipment and machinery	
Personal purchase	60.4%
Borrowed from cooperatives or other farmers	18.4%
Rented from private providers	15.3%
Challenges in accessing farming resources	
High cost of farm inputs	34.0%
Limited access to irrigation and water supply	20.3%
Lack of capital or financing options	18.5%

Determinants of onion value

The high quality and freshness were the most valued by the customers in buying onion product, which indicates that market actors value onion products not only by its volume of production but by the physical condition when it reaches the market. Similar findings were obtained by Imran *et al.* (2025) that surveyed by the Korea Rural Economic Institute (KREI) revealed that 52.9% of the consumer identified freshness as the most critical factor when buying onions, for safety and quality consumers tend to buy even at higher price. Moreover, the external aspects like freshness, size and appearance have a significant effect on the customer buying decision especially in retail environment (Table 6).

Primary customers

Based on the result of the study direct customers gained the highest rating, this indicate that onion

farmers rely more on direct selling arrangement rather institutional buyers or traders.

Farmers prefer transactions where price negotiation is more flexible and payment can be received immediately. A journal by Nigel (2016) discusses the increasing number of farmers who opt to sold products through roadside stands, farmer's markets, pick-your-own farms, and on farm stores in Washington DC, are attributed to the advantages of selling products directly to consumers. Direct marketing channels can reduce transaction costs that can improve profit due to fewer middlemen involved.

Factors influencing customers' onion purchases

The study reveals that the high quality gained the highest percentage. This means that buyers prioritize the physical quality of onions in making purchase decisions. Quality becomes the main driver of choice, physical appearance like freshness is associated with longer shelf-life and higher value for their money. This is supported by the findings of Imran *et al.* (2025) that surveyed by the Korea Rural Economic Institute (KREI) revealed that 52.9% of the consumer identified freshness as the most critical factor when buying onions, for safety and quality consumers tend to buy even at higher price. Moreover, the external aspects like freshness, size and appearance have a significant effect on the customer buying decision especially in retail environment.

Practices in ensuring onion quality

The result of the study shows that the proper seed selection has the highest percentage. This implies that quality begins in the first step of production cycle, proper selection of seed secures a higher quality of harvest, where there is a uniformity of bulb size, germination rate and better resistance to pest and diseases which can influence higher market value. This corroborates to the finding of the study of Sundareswaran (2023) that the importance of availability of high – yielding varieties of quality seeds in achieving food security has been recognized globally.

Similar findings were obtained by Singh (2011) that high – quality of seeds play important role in the success of crop production for it gives desired plant stand and ensures uniform growth and maturity, produces vigorous, fast-growing seedlings that can withstand pest and disease incidence to certain extent.

Table 6. Value proposition in the onion industry

Particulars	Percentage
Determinants of onion value	
High quality and freshness	30.4%
Competitive pricing	23.7%
Large and uniform size	14.6%
Long shelf life	14.6%
Primary Customers	
Direct consumers	38.7%
Wholesalers/middlemen	27.9%
Market vendors	23.6%
Factors influencing customers' onion purchases	
High quality	30.3%
Low price	23.7%
Good storage and packaging	17.9%
Practices in ensuring onion quality	
Proper seed selection	22.4%
Use of organic fertilizers and pesticides	22.0%
Careful handling during harvest	16.0%
Barriers to onion quality and value	
High cost of farm inputs	21.7%
Unstable market prices	18.6%
Climate change and unpredictable weather	17.4%

Barriers to onion quality and value

The result of the study reveals that the high cost of input is the biggest barrier to onion quality and value, this reflects the financial strain farmers are facing in the purchasing of essential inputs which tend to reduce the quantity or quality of inputs that compromises the crop performance, yield and post-harvest quality. This corroborates to the findings of the study of Dhillon *et al.* (2023) that one of the major barriers small-scale farmers faces is economic challenges like high crop-input costs, labor costs, lower income – this hinders their ability to have successful farming.

The high cost of production inputs discourages investments in quality management practices and reduces profitability across smallholder farms.

CONCLUSION

Based on the results of the study, the following conclusions were drawn: (1) The study revealed that majority of the onion farmers in the First District of Ilocos Sur is undertake by older adults at the age of 69 and above, dominated by male, attained high school level and married with 4-6 members of the household. (2) The following are the business dynamics implemented by onion farmers in the first district of Ilocos Sur: (2a) Key Partnership. The results revealed that onion farmers collaborate with their fellow farmers in purchasing farm inputs. Partnership is established through personal connection. Partnership with strong government support program can improve onion farming. lack of trust between partners is the biggest challenge in maintaining partnership (2b) Key Activities. The results revealed that land preparation is the most important activities and most resource intensive activity. Tractors and farm machinery is the most needed resources in onion farming. Onion farmers are direct to consumer and hire laborer in distribution. The high cost of farm inputs is a challenge in carrying out key activities. (2c) Key Resources. The result revealed that land is the most essential resources and most difficult to access. Onion farmers use their own saving and investments to purchase farm inputs. Farming equipment and machinery are personal purchased. The high cost of farm inputs is the challenge in accessing farming resources. (2d) Value Proposition. The results of the study revealed that the onion is valued through its high quality and freshness. Onion farmers directly sell their onion to consumers. High quality onion influences the purchase preference of customers. Proper seed selection is the practice of onion farmers to ensure a quality onion. The high cost of farm input is the barrier to onion quality and value.

RECOMMENDATIONS

Based on the conclusions, the following recommendations were drawn: (1a) Key Activities: Promote access of farm machinery and equipment through government or cooperative- led to ease the burden of onion farmers in land preparation and post-harvest handling to reduce hiring costs. (1b) Key Resources. Improve access of financial services and input subsidies such as high-quality seeds and fertilizers to ease the burden of farmers in high input cost. Promote semi-organic practice or the use of alternative inputs through hands-on training to help farmers reduce production expenses while maintaining quality. (1c) Key Partnership. Strengthen coordination with government agencies, cooperatives and non-government organizations to expand partnerships and support services. Enhance training and technical assistance programs to have collaboration and skill-building to promote partnership. (1d) Value Proposition. Provide post-harvest storage and proper post-harvest handling to maintain quality and freshness.

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