

Swot Analysis of Corn Plant in Nganjuk District

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ABSTRACT

Corn is a food commodity as a staple food besides rice in Indonesia. Corn is a plant that can be planted in rice fields or gardens. The aim of the research is to study the SWOT analysis of corn plants spread across Nganjuk Regency. The research method uses quantitative descriptive. The results of the SWOT analysis of corn plants in Nganjuk Regency are as follows: average corn production, total annual production capacity is 203,402 tons. The obstacles that occur in the field are the Human Resources management system for warehouse managers, the operations of warehouse institutions are relatively low. The market network is considered to be less extensive and the sense of trust in corn farmers is still low while purchasing prices from farmers are low, therefore farmers sell their products in local markets. Supply chain management is also still very low. So it is very necessary to improve the management of farmer empowerment, and the quality of all parties involved must be improved in order to produce good results.

INTRODUCTION

Corn is a plant that can be planted in rice fields or gardens. In Indonesia, there is corn rice which is used as a substitute for rice. The morphology of corn also has 3 parts, namely the root part, the stem part and the leaf part. The detailed morphology of corn includes cobs and seeds, flowers, stems and leaves, as well as the root system. The following is a complete explanation. This part is part of the corn fruit. This part is the main part of the corn, where this part is the main product that is picked. As we know, the morphology of the corn cob is covered by a pericarp wall. This pericarp is attached to the seeds so it can protect the corn kernels well.

In corn kernels, there is the outer part or pericarp, the inner part or endosperm, and the organ or embryo part. The function of the pericarp is to maintain the embryo so that it always has enough water, then this part of the endosperm functions as a food reserve for corn. Where there is a starch content of 90% and 10% content of other substances (oil, protein and minerals). Meanwhile, the embryo itself is the core of the corn plant. Where this embryo will be the embryo of the formation of seeds that can be planted again to become new corn plants. Corn also has flower parts. Flowers function as the crown of the plant. Even though the flower parts of corn are not as colorful or attractive as the flowers in the garden (such as roses or jasmine flowers), the presence of corn flowers is an important part. The stem is a morphological part of corn which functions to support the body of the corn plant. The shape of the stem of a corn plant is thin, pointed, segmented and branched. There are 3 parts to the stem, namely the epidermis or outer skin, the vascular tissue and the central part of the stem. Then the corn leaves consist of the leaf blade, leaf midrib, and ligula. These corn leaves will grow on every node on the corn stalk.

The problems in Nganjuk district are high rainfall and competition for staple commodity crops, namely rice is widely planted, onions and corn are classified as crops with lower yields than rice. The aim of the research is to analyze the SWOT of corn plants in Nganjuk Regency, East Java. The benefits of this research can be to find out the field conditions in BULOG in Nganjuk district regarding superior commodities, as well as providing local food and food independence.

THEORETICAL REVIEW

The first part of the root is the support root, which functions to keep the corn plant upright and also to absorb water and nutrients. Then the adventitious roots function to take up nutrients and water from the soil. Meanwhile, the seminal roots function to develop the embryo (Anonymous, 2019). Corn plants are planted simultaneously, to obtain plants with uniform growth (BPTP BALITBANG KEPRI, 2018). The strategy used to increase farmers' capacity in carrying out corn farming activities is by providing outreach to farmers and farmer groups regarding ways to solve problems, especially in providing infrastructure so that farming activities can run well (Amelia, et al, 2020).

Since 2001 the government has promoted the Gema Palagung program (Independent Movement for Rice, Soybeans and Corn). This program is quite effective, as evidenced by an increase in the amount of domestic corn production but it is still not able to meet domestic needs so corn is still imported (Purwono and Hartono, 2008). Corn planted in rejected sand had better growth and was significantly different from original sand except for flowering time parameters. So rejected sand can be used for reclamation of coastal land where iron sand is mined (Diah Ekowati and Mochamad Nasir, 2011). This research is a type of quantitative descriptive research. According to Sugiyono (2007), descriptive research is research that describes by providing a description of an object being studied through sample or population data as it is, without carrying out analysis and making conclusions that apply to the general public.

METHODOLOGY

The research was carried out in Nganjuk Regency covering 20 sub-districts. The location was determined deliberately. The research was carried out from January to April 2021. The research method used was descriptive quantitative analysis with a case study approach to the community (stakeholders) related to the development of catfish hatchery businesses to reveal strategic issues intensively, in-depth and comprehensively. Descriptive analysis means that research focuses analysis on existing data or facts and solving current problems. Researchers use a method by collecting data and information to find out in depth about the problem of mapping buffer storage needs in helping farmers increase the selling value of agricultural products. This analysis focuses on SWOT matrix analysis at a macro level, both in the internal and external environment, where all respondents from stakeholders are included in the analysis because of their position, Anova Test and their role in solving warehouse solutions and applications. Primary data was obtained directly from farmers and collectors regarding the capacity of shallot storage warehouses in Rejoso District, Nganjuk Regency. The secondary data survey was carried out by visiting the Agriculture Service, Food Security and Livestock Service (DKPP), Central Statistics Agency (BPS), Cooperatives Service, Industry and Trade Service (Disperindag), Central Statistics Agency (BPS), Licensing Service and PTSP (Services). Integrated One Door). From this visit, secondary data that has been obtained includes annual recapitulation of planting land use, harvest yields, and productivity of rice, corn and other horticultural crops. Specifically for the recapitulation of planting land use, harvest yields and productivity of shallot plants, the recapitulation of the data obtained is a monthly and annual recap.

RESULTS

Data on Annual Corn Production Capacity in Tons and the Average Total Annual Production Capacity Is 203,402 Tons As In Figure 1.

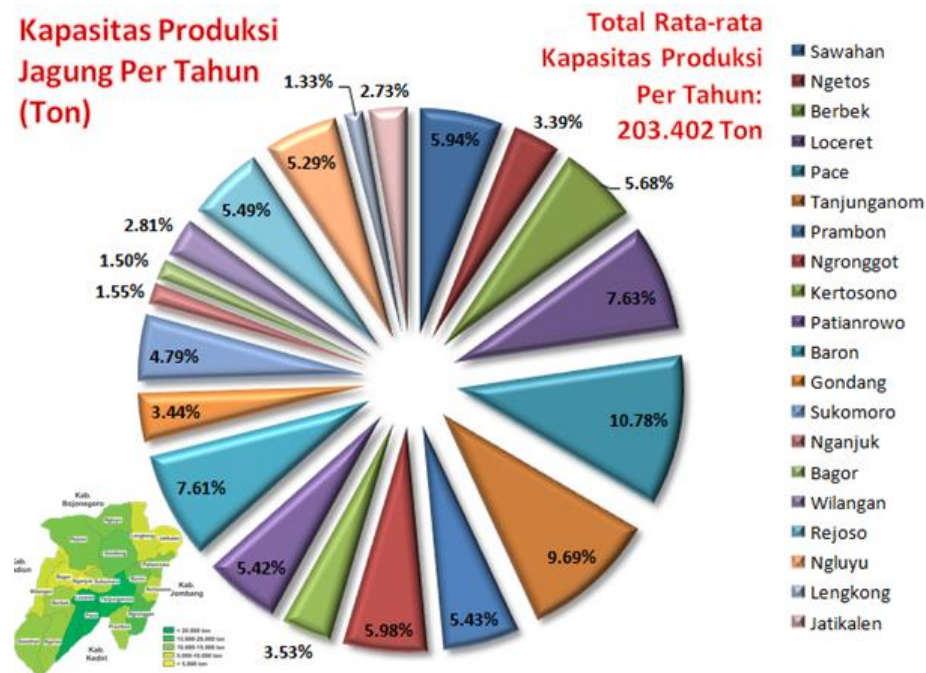


Figure 1. Distribution of Corn Commodity Harvest Capacity in Each District in Nganjuk Regency in One Year.

The characteristics and planting culture of corn commodity farmers are reviewed including land processing, capital, use of labor and business management, as presented in **Table 1**.

Table 1. Characteristics and Culture of Corn Farmers Per Hectare in Nganjuk Regency

No.	Aktivitas	Biaya
1.	Land Preparation	
	a. Land lease	8.500.000
	b. Land Management	1.400.000
2.	Planting	
	a. Seed 22 kg (@Rp.80.000,00/Kg)	1.760.000
	b. Planting workers (12 person) Rp. 50.000/day	600.000

3.	Maintenance	
	a. Stitching 3 person	150.000
	b. Fertilization 5 person 3x	750.000
	c. Weeding 5 person 3x	750.000
4.	Sparying	
	a. Pesticide 2 person 3x	300.000
5.	Harvesting	
	a. 12 person 1 day	600.000
	b. Trasport	250.000
	c. Shelling	500.000
6.	Post-harvest	
	a. Drying 3 person 3 day	450.000
7.	Total Production Costs	16.010.000
8.	Sales of Dried Corn Shells @Rp. 3.700,00	

Table 2. Distribution of Rice, Corn and Shallot Commodity Warehouses in Each District in Nganjuk Regency

Kecamatan	Commodity			Non-Comodity
	Paddy	Corn	Red onion	
Bagor	16	0	37	0
Baron	2	0	0	0
Berbek	6	0	0	0
Gondang	5	1	30	1
Jatikalen	1	0	0	0
Kertosono	3	1	0	0
Lengkong	2	0	0	0
Loceret	7	7	1	0
Nganjuk	6	0	1	0
Ngetos	2	0	0	0
Ngluyu	3	0	1	0

Ngronggot	4	2	0	0
Pace	5	13	0	2
Patianrowo	1	0	0	0
Prambon	27	5	0	0
Rejoso	5	2	45	0
Sawahan	1	0	0	0
Sukomoro	2	1	30	0
Tanjunganom	11	3	0	0
Wilangan	7	3	7	0

From these details, Rice Commodity Warehouses are dominantly distributed in almost all sub-districts, except in the Districts where Red Onion Warehouses are dominant (Bagor, Gondang, Rejoso and Sukomoro Districts) and Corn (Pace)

DISCUSSION

General Overview of Nganjuk Regency

Nganjuk Regency is one of the regencies in East Java Province which is located in the western part of East Java Province. Astronomically, Nganjuk Regency is located at coordinates 111°5' to 111°13' East Longitude and 7°20' South Latitude. Geographically, Nganjuk Regency has regional boundaries, namely to the north it borders Bojonegoro Regency, to the south it borders Kediri and Trenggalek Regencies. In the eastern region it borders Jombang and Kediri Regencies, while in the western region it borders Ponorogo and Madiun Regencies (Central Statistics Agency, 2018). Nganjuk Regency is one of the districts with dominant agricultural potential, with an agricultural area of 43,026 hectares and has a number of farming households of 75% of the total households in Nganjuk Regency. The dominant role of agriculture can be seen from the GRDP of Nganjuk Regency, namely 28.14% (Director General of Regional Autonomy, 2013). Nganjuk Regency is one of the shallot production centers in East Java Province. In fact, this location is one of the largest shallot production centers in East Java (BPS East Java, 2007).

Data analysis is a process of arranging the sequence of data, organizing it into patterns, categories and basic units of description. The data contains certain interpretations. Interpretation of data cannot be separated from analysis, so that interpretation is actually a certain aspect of analysis and not a separate part of analysis. As for interpretation, namely providing significant meaning to the analysis, explaining the pattern of description, and looking for relationships between the dimensions of the description. So interpretation essentially gives meaning to analysis, explains patterns or categories, looks for relationships between various concepts and describes research perspectives (Kaelan, 2012).

Nganjuk Regency is in a position surrounded by the Wilis mountains to the south which borders the districts of Kediri, Tulungagung and Trenggalek, the Kendeng mountains to the north which borders Bojonegoro Regency. The geographic location of Nganjuk Regency causes the weather to be hot, but strong gusts of wind descending from the plains of Kediri and Tulungagung Regency down through the northern slopes of the Willis Mountains and being blocked by the Kendeng Mountains cause gusts of cold air to hit the Nganjuk area. The hot weather and cold winds make rice, corn and onions grow very well. Based on the figure, the production capacity for rice, corn and shallots in Nganjuk Regency is respectively 630,662 tons, 203,402 tons and 138,928 tons per year. Apart from seasonal factors, factors that influence the production of agricultural commodities include agricultural facilities, cultivation methods and farmer characteristics. In other words, input factors will influence agricultural production output, which fluctuates in each central region for each commodity throughout Indonesia. The influence of seasons not only impacts production fluctuations but also causes price fluctuations. The perishable nature of shallot products causes prices to tend to fluctuate and prices change very quickly (Asmara and Ardhiani, 2010). According to Indrawan et al. (2017) plants are complex and sensitive to climate influences. According to Herlina and Prasetyorini (2020), high temperatures can result in a decrease in water availability in plants and affect the corn growth process and crop production, however, if water availability is sufficient, increasing temperature can increase corn productivity.

CONCLUSIONS AND RECOMMENDATIONS

The production of corn in Nganjuk Regency is quite optimal, but based on the SWOT analysis there are still obstacles, namely: Human resource management for warehouse managers is still low, operational management of supporting warehouse institutions is still low, market networks are not extensive enough, farmers' trust in warehouses is still low, purchasing prices from farmers is relatively low, so the majority of farmers sell directly at local markets. Supply chain management is still low. We suggest improving management in all areas that will function to increase corn production and marketing in Nganjuk.

FURTHER STUDY

This research explores the strengths, weaknesses, opportunities, and threats (SWOT) of corn cultivation in Nganjuk District, providing valuable insights into the current state of the industry. Building upon these findings, the study identifies key areas for future research and development to enhance the sustainability, productivity, and economic viability of corn farming in the region.

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