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Feasibility Study for The Proposed Poultry Feed Manufacturing Plant by PT. X: Implementing Agricultural Commodity Downstreaming in Gresik, East Java

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Abstract

This study aims to analyze the feasibility of establishing a poultry feed factory by PT. X in Gresik, East Java, as part of Indonesia's national agricultural downstreaming strategy. The feasibility study evaluates multiple aspects, including technical and technological considerations, raw material availability, and market and marketing potential, particularly for both domestic and export opportunities. The assessment also includes the estimation of local raw material requirements and the identification of appropriate equipment and technology for the factory's operations. From a market perspective, the study evaluates current and projected demand for poultry feed products, supported by the growing livestock sector and increasing export prospects. From a financial standpoint, the project shows strong viability. Key financial indicators demonstrate positive outcomes: the Net Present Value (NPV) is greater than zero, the Internal Rate of Return (IRR) exceeds the prevailing loan interest rate, and the Payback Period falls within an acceptable and efficient timeframe. These indicators collectively reflect the project's potential to generate sustainable profits and recover the initial investment within a reasonable period. Considering all evaluated aspects, the development of PT. X's poultry feed factory in Gresik is deemed feasible in terms of technical implementation, market potential, and financial returns. Moreover, the project aligns with national objectives to enhance agricultural value chains through industrial downstreaming, optimize the use of local resources, and contribute to regional and national economic development. As such, the proposed investment not only supports agribusiness growth but also reinforces broader economic resilience and food security initiatives in Indonesia.

Keywords: complete feed, financial analysis, broiler complete feed.

INTRODUCTION

Indonesia, as an agricultural country, has significant potential for developing the farming and livestock sectors. The livestock sector, in particular, contributed only around 1.57% of the national Gross Domestic Product (GDP) in 2017, valued at IDR 148.5 trillion. It has shown an increasing trend from IDR 125.3 trillion in 2013. This contribution not only reflects its economic role but also makes a significant contribution to the empowerment of rural communities. The concept of downstreaming agricultural commodities, namely, increasing added value through processing basic products is a crucial strategy for agro-industry-based economic growth. In this context, investment in the poultry feed industry is highly strategic. This is evident in national feed production, which is expected to reach approximately 21.5 million tons in 2023, of which 97–98% will be used for poultry feed. This industry utilizes more than 70% of local raw materials, such as corn. It has the potential to

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strengthen food security and reduce dependence on imports, as seen in the establishment of PT. X's Poultry Feed Factory in Gresik, East Java, represents a concrete implementation of the downstreaming strategy. This strategic location is situated near major corn production centers in East Java, Central Java, and Madura, facilitating logistical efficiency and economies of scale. Such investments are estimated to have a multiplier effect on the local and national economies. With the projected increase in the population of broiler chickens (3.4 billion) and layer chickens (266 million) by 2023, and the anticipated sharp rise in feed demand until 2030, developing the poultry feed industry is highly relevant and urgent. A downstream approach and integration of the agricultural value chain into livestock farming are expected to not only strengthen food sovereignty but also improve farmer welfare and economic equality in rural areas.

METHOD

The purpose of this quantitative descriptive study is to highlight various relevant aspects of Poultry Feed mill development. Several indicators were evaluated, including market and marketing aspects, technical and technological elements, financial elements, and agricultural downstreaming strategies. A feasibility study approach was used in this research.

The research was conducted in Gresik Regency, East Java, which is the designated location for the construction of a factory by PT. X. This location was selected based on its proximity to raw material production centers such as corn and soybeans. The research period was from January to May 2025.

The data used are secondary data collected from various literature sources, scientific journals, official reports from the Badan Pusat Statistik (BPS), the Ministry of Agriculture, and other relevant documents.

Several methods were used to collect data: reading literature to gain an understanding of the theoretical basis and policies of the poultry feed industry and agricultural downstreaming; conducting field observations to determine the actual conditions at the factory construction site; using documentation to collect technical and planning data; and conducting interviews with industry, financial experts, and practitioners.

This study conducted a step-by-step data analysis based on the elements of a feasibility study. Market and marketing analysis was performed by projecting demand for poultry feed products, market segmentation, and potential domestic and export markets. Technical and technological aspects included production planning, machine capacity, factory layout, and equipment specifications. To determine the project's financial feasibility, financial aspects were analyzed using investment appraisal methods such as Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period (PP). Furthermore, a sensitivity analysis was conducted to evaluate how changes in assumptions about costs and revenues might affect the overall project feasibility.

The results of this study are expected to provide an accurate and comprehensive picture of the factory development plan, which will assist the company in making informed strategic decisions.

RESULT AND DISCUSSION

Table 1 shows the cost of investment and depreciation required by the company to operate and as capital, whose purpose is to cover the entire initial investment cost used to acquire, construct, or upgrade fixed assets that will be used in long-term operations. The following table shows the Capital Expenditure (CAPEX) and Operational Expenditure components for the poultry feed factory construction project:

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Table 1. Capital Expenditure

Name	Capital Expenditure		
	Depreciation	Amortization	Working Capital
Total	$67.896.371	$174.575.943	$1.595.313

Table 2. Investment

Name	Investment		
	Investment	Investor Capital 30%	Bank Capital 70%
Total	$254.771.248	$ 76.431.374	$ 178.339.873

Calculating the Return on Investment (ROI) for a project is crucial for both establishing and expanding a firm. It is often the primary challenge that impedes progress, whether due to insufficient funding or a complete absence thereof. The plant's construction plan is 30% self-funded and 70% bank-funded. Loan is $ 178.339.873; Time (n) 10 years and interest 12%

Table 3. Return on Investment

Year	Loan	12% Interest	Instalments	Payment
0	$ 152.895.886			
1	$ 143.302.373	$ 15.289.589	$ 9.593.513	$ 24.883.101
2	$ 132.749.509	$ 14.330.237	$ 10.552.864	$ 24.883.101
3	$ 121.141.359	$ 13.274.951	$ 11.608.150	$ 24.883.101
4	$ 108.372.393	$ 12.114.136	$ 12.768.965	$ 24.883.101
5	$ 94.326.531	$ 10.837.239	$ 14.045.862	$ 24.883.101
6	$ 78.876.083	$ 9.432.653	$ 15.450.448	$ 24.883.101
7	$ 61.880.590	$ 7.887.608	$ 16.995.493	$ 24.883.101
8	$ 43.185.548	$ 6.188.059	$ 18.695.042	$ 24.883.101
9	$ 22.621.001	$ 4.318.555	$ 20.564.547	$ 24.883.101
10	$ 0	$ 2.262.100	$ 22.621.001	$ 24.883.101

The company must pay the cost of raw materials to purchase them, then process them to produce the final product. To make a poultry complete boiler, the calculation of the price of materials and total raw materials is followed, with a 5% price change inflation rate.

Table 4. Direct Materials

Material	Price/TON	Demand for 15 years
Corn	$ 313	7090190
Soybean Meal	$ 250	3866100
Fish Meal	$ 250	63951
Rice Bran	$ 250	226200
Bone Meal	$ 313	276290
Vegetable Oil	$ 313	355420

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The company also has to pay for indirect materials.

Table 5. Indirect Materials

Material	Price/TON	Demand for 15 Years
Vitamin Premix	$ 2.500	42090
Mineral Premix	$ 2.500	53915
DL-Methionine	$ 3.125	35295
L-Lysine HCL	$ 3.125	35895
L-Threonine	$ 3.125	5745
Dicalcium Phosphate	$ 625	122260
Limestone	$ 250	93080
Sea Salt (NaCl)	$ 250	37170
Sodium bicarbonate	$ 313	11370
Probiotics	$ 3.125	3600
Feed Dox Dry	$ 3.125	3460

Therefore, the total amount the company has to pay for purchasing raw materials is $5,651,195,480 for direct materials and $ 959,128,486 for indirect materials.

Then, the company has to pay for direct labor and indirect labor. The tables will show how much that company should be paid for it.

Table 6. Direct Labor

Position/Title	Number of Personnel	Base Salary	Total	Total/Year
Operator	159	$ 300	$ 47.700	$ 17.410.500
Leader	23	$ 298	$ 6.849	$ 2.499.735
Supervisor	12	$ 396	$ 4.748	$ 1.732.918
Total	**194**	**$ 993**	$ 59.296	$ 21.643.153
			Total Cost	**$ 43.286.307**

Table 7. Indirect Labor

No	Position/Title	Department	Number of Personnel	Base Salary	Position Allowance	Total Monthly Salary	Total Annual Salary
Top Management							
1	Chief Executive Officer	Overall Operations	1	$ 3.750	**infinitive**	$ 3.750	$ 45.000
2	Chief Operating Officer	Head of Operations	1	$ 2.500	**infinitive**	$ 2.500	$ 30.000
3	Chief Financial Officer	Head of Finance	1	$ 2.500	**infinitive**	$ 2.500	$ 30.000
A. Administration and Management							
4	General Manager	Factory Management	1	$ 1.875	$ 188	$ 2.063	$ 24.750
5	Plant Manager	Factory Management	1	$ 1.875	$ 156	$ 2.031	$ 24.375
6	Production Manager	Administration	1	$ 1.250	$ 113	$ 1.363	$ 16.350

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No	Position/Title	Department	Number of Personnel	Base Salary	Position Allowance	Total Monthly Salary	Total Annual Salary
4	QC Manager	Quality Control	1	$ 1.250	$ 100	$ 1.350	$ 16.200
7	HRD Manager	HRD	1	$ 1.250	$ 94	$ 1.344	$ 16.125
8	Finance Manager	Finance	1	$ 1.250	$ 94	$ 1.344	$ 16.125
9	Finance Staff	Finance	2	$ 438	$ 31	$ 938	$ 11.250
10	Purchasing Manager	Procurement	1	$ 1.250	$ 94	$ 1.344	$ 16.125
11	Purchasing Staff	Procurement	2	$ 438	$ 31	$ 938	$ 11.250
12	IT Manager	Information Technology	1	$ 1.250	$ 94	$ 1.344	$ 16.125
13	IT Staff	Information Technology	3	$ 438	$ 31	$ 1.406	$ 16.875
14	Admin Staff	Administration	4	$ 438	$ 25	$ 1.850	$ 22.200
B. Technical and Production (Non-Operator)							
15	Production Planning Manager	PPIC	1	$ 0	$ 94	$ 94	$ 1.126
16	Production Planning Staff	PPIC	2	$ 438	$ 31	$ 938	$ 11.250
17	Quality Control Manager	Quality Control	1	$ 0	$ 94	$ 94	$ 1.126
18	QC Supervisor	Quality Control	2	$ 563	$ 63	$ 1.250	$ 15.000
19	Laboratory Supervisor	Quality Control	2	$ 563	$ 56	$ 1.238	$ 14.850
20	QC & Lab Analyst	Quality Control	3	$ 438	$ 31	$ 1.406	$ 16.875
21	Technical Manager	Engineering	1	$ 1.125	$ 94	$ 1.219	$ 14.625
22	Maintenance Supervisor	Engineering	3	$ 563	$ 63	$ 1.875	$ 22.500
23	Engineering Supervisor	Engineering	2	$ 563	$ 63	$ 1.250	$ 15.000
24	Maintenance Planner	Engineering	2	$ 563	$ 38	$ 1.200	$ 14.400
25	Safety Officer	K3L	2	$ 438	$ 50	$ 975	$ 11.700
C. Logistics and Supply Chain							
26	Warehouse Manager	Warehouse	1	$ 0	$ 94	$ 94	$ 1.126
27	Warehouse Supervisor	Warehouse	3	$ 563	$ 63	$ 1.875	$ 22.500
28	Inventory Controller	Warehouse	2	$ 438	$ 44	$ 963	$ 11.550
29	Logistik Manager	Logistik	1	$ 1.125	$ 94	$ 1.219	$ 14.625
30	Logistik Officer	Logistik	1	$ 438	$ 313	$ 750	$ 9.000
31	Distribution Coordinator	Logistik	2	$ 563	$ 38	$ 1.200	$ 14.400
32	Eczema Staff	Export	3	$ 305	$ 15	$ 960	$ 11.515

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No	Position/Title	Department	Number of Personnel	Base Salary	Position Allowance	Total Monthly Salary	Total Annual Salary
D. Research & Development							
33	R&D Manager	R&D	1	$ 1.125	$ 94	$ 1.219	$ 14.625
34	Nutritionist	R&D	2	$ 563	$ 50	$ 1.225	$ 14.700
35	Formula Development	R&D	2	$ 563	$ 44	$ 1.213	$ 14.550
E. Sales & Marketing Support							
36	Sales Admin Manager	Sales Support	1	$ 1.125	$ 75	$ 1.200	$ 14.400
37	Sales Admin Staff	Sales Support	2	$ 438	$ 31	$ 938	$ 11.250
38	Customer Service	Sales Support	1	$ 438	$ 25	$ 463	$ 5.550
F. General Service & Support							
39	Security Supervisor	Security	1	$ 563	$ 19	$ 581	$ 6.975
40	Security Staff	Security	4	$ 304	$ 19	$ 1.293	$ 15.512
42	Driver	General Service	4	$ 304	$ 19	$ 1.293	$ 15.512
42	Office Boy/Girl	General Service	8	$ 304	$ 19	$ 2.585	$ 31.023
43	Gardener	General Service	4	$ 304	$ 19	$ 1.293	$ 15.512
TOTAL SALARY						**$ 57.960**	**$ 695.526**

Table 7 below shows the profit and loss per year at PT.X Poultry Feed Construction.

Table 8. Profit and Loss Projection

No	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
1	Sale	$ 422.473.781	$ 440.648.807	$ 467.971.302	$ 489.184.362	$ 519.565.051	$ 670.204.103	$ 701.092.595	$ 744.556.384	$ 778.899.839	$ 827.238.146	$ 584.542.873	$ 619.821.228	$ 649.013.670	$ 688.233.390	$ 718.651.113
	HPP	$ 349.151.885	$ 364.172.568	$ 386.753.142	$ 404.284.597	$ 429.392.604	$ 553.887.688	$ 579.415.367	$ 615.335.854	$ 643.718.875	$ 683.667.889	$ 483.093.284	$ 512.248.949	$ 536.374.934	$ 568.787.926	$ 593.926.540
2	**Gross Profit**	**$ 73.321.896**	**$ 76.476.239**	**$ 81.218.160**	**$ 84.899.765**	**$ 90.172.447**	**$ 116.316.414**	**$ 121.677.227**	**$ 129.220.529**	**$ 135.180.964**	**$ 143.570.257**	**$ 101.449.590**	**$ 107.572.279**	**$ 112.638.736**	**$ 119.445.464**	**$ 124.724.573**
	Operational expenses															
	Administrative	$ 3.125	$ 3.281	$ 3.445	$ 3.618	$ 3.798	$ 3.988	$ 4.188	$ 4.397	$ 4.617	$ 4.848	$ 5.090	$ 5.345	$ 5.612	$ 5.893	$ 6.187

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No	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
	burden															
	Shipping Load	$ 3.125	$ 3.281	$ 3.445	$ 3.618	$ 3.798	$ 3.988	$ 4.188	$ 4.397	$ 4.617	$ 4.848	$ 5.090	$ 5.345	$ 5.612	$ 5.893	$ 6.187
	Other Cost	$ 3.125	$ 3.281	$ 3.445	$ 3.618	$ 3.798	$ 3.988	$ 4.188	$ 4.397	$ 4.617	$ 4.848	$ 5.090	$ 5.345	$ 5.612	$ 5.893	$ 6.187
	Interest Expense	$ 15.289.589	$ 14.330.237	$ 13.274.951	$ 12.114.136	$ 10.837.239	$ 9.432.653	$ 7.887.608	$ 6.188.059	$ 4.318.555	$ 2.262.100	$ -	$ -	$ -	$ -	$ -
	Total Operational Expenses	**$ 15.298.964**	**$ 14.340.081**	**$ 13.285.287**	**$ 12.124.989**	**$ 10.848.635**	**$ 9.444.618**	**$ 7.900.172**	**$ 6.201.251**	**$ 4.332.406**	**$ 2.276.644**	**$ 15.271**	**$ 16.034**	**$ 16.836**	**$ 17.678**	**$ 18.562**
4	**Non-Operational Expenses**															
	Marketing Cost	$ 126.742	$ 132.195	$ 140.391	$ 146.755	$ 155.870	$ 201.061	$ 210.328	$ 223.367	$ 233.670	$ 248.171	$ 175.363	$ 185.946	$ 194.704	$ 206.470	$ 215.595
	total komercial	**$ 15.425.706**	**$ 14.472.276**	**$ 13.425.678**	**$ 12.271.744**	**$ 11.004.504**	**$ 9.645.679**	**$ 8.110.499**	**$ 6.424.617**	**$ 4.566.076**	**$ 2.524.815**	**$ 190.634**	**$ 201.981**	**$ 211.540**	**$ 224.148**	**$ 234.157**
	Operating Cost	$ 57.896.190	$ 62.003.964	$ 67.792.482	$ 72.628.021	$ 79.167.943	$ 106.670.735	$ 113.566.728	$ 122.795.912	$ 130.614.888	$ 141.045.441	$ 101.258.956	$ 107.370.298	$ 112.427.196	$ 119.221.316	$ 124.490.416
5	PPH Load 21%	$ 12.158.200	$ 13.020.832	$ 14.236.421	$ 15.251.884	$ 16.625.268	$ 22.400.854	$ 23.849.013	$ 25.787.142	$ 27.429.126	$ 29.619.543	$ 21.264.381	$ 22.547.763	$ 23.609.711	$ 25.036.476	$ 26.142.987
	PPn Load 11%	$ 6.368.581	$ 6.820.436	$ 7.457.173	$ 7.989.082	$ 8.708.474	$ 11.733.781	$ 12.492.340	$ 13.507.550	$ 14.367.638	$ 15.514.999	$ 11.138.485	$ 11.810.733	$ 12.366.992	$ 13.114.345	$ 13.693.946
	Net Profit	**$ 39.369.409**	**$ 42.162.695**	**$ 46.098.888**	**$ 49.387.055**	**$ 53.834.201**	**$ 72.536.100**	**$ 77.225.375**	**$ 83.501.220**	**$ 88.818.124**	**$ 95.910.900**	**$ 68.856.090**	**$ 73.011.803**	**$ 76.450.493**	**$ 81.070.495**	**$ 84.653.483**

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Table 9. Projected Cash Flow Poultry Feed Plant

Description	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Year 12**	**Year 13**	**Year 14**	**Year 15**
(Inflow)																
Loan	$ 152.895.886	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Capital	$ 101.930.590	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Profit	$ -	$ 39.369.409	$ 42.162.695	$ 46.098.888	$ 49.387.055	$ 53.834.201	$ 72.536.100	$ 77.225.375	$ 83.501.220	$ 88.818.124	$ 95.910.900	$ 68.856.090	$ 73.011.803	$ 76.450.493	$ 81.070.495	$ 84.653.483
Depreciation	$ -	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371	$ 4.623.371
Total Income	$ 254.826.476	$ 43.992.781	$ 46.786.067	$ 50.722.259	$ 54.010.426	$ 58.457.572	$ 77.159.471	$ 81.848.746	$ 88.124.592	$ 93.441.495	$ 100.534.272	$ 73.479.461	$ 77.635.174	$ 81.073.865	$ 85.693.867	$ 89.276.854
(Outflow)																
Investment	$ 254.826.476	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan Principal Instalment	$ -	$ 9.593.513	$ 10.552.864	$ 11.608.150	$ 12.768.965	$ 14.045.862	$ 15.450.448	$ 16.995.493	$ 18.695.042	$ 20.564.547	$ 22.621.001	$ -	$ -	$ -	$ -	$ -
Total Expenses	$ 254.826.476	$ 9.593.513	$ 10.552.864	$ 11.608.150	$ 12.768.965	$ 14.045.862	$ 15.450.448	$ 16.995.493	$ 18.695.042	$ 20.564.547	$ 22.621.001	$ -	$ -	$ -	$ -	$ -
Income – Expenses	$ -	$ 34.399.268	$ 36.233.203	$ 39.114.109	$ 41.241.461	$ 44.411.710	$ 61.709.023	$ 64.853.253	$ 69.429.549	$ 72.876.949	$ 77.913.270	$ 73.479.461	$ 77.635.174	$ 81.073.865	$ 85.693.867	$ 89.276.854

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Starting Cash Balance	**$ -**	**$ -**	**$ 34.399.268**	**$ 36.233.203**	**$ 39.114.109**	**$ 41.241.461**	**$ 44.411.710**	**$ 61.709.023**	**$ 64.853.253**	**$ 69.429.549**	**$ 72.876.949**	**$ 77.913.270**	**$ 73.479.461**	**$ 77.635.174**	**$ 81.073.865**	**$ 85.693.867**
Ending Cash Balance	**$ -**	**$ 34.399.268**	**$ 70.632.471**	**$ 109.746.579**	**$ 150.988.040**	**$ 195.399.750**	**$ 257.108.773**	**$ 321.962.027**	**$ 391.391.576**	**$ 464.268.524**	**$ 542.181.795**	**$ 615.661.256**	**$ 693.296.431**	**$ 774.370.295**	**$ 860.064.162**	**$ 949.341.016**

No	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
	Current Assets	$ 34.399.268	$ 70.632.471	$ 109.746.579	$ 150.988.040	$ 195.399.750	$ 257.108.773	$ 321.962.027	$ 391.391.576	$ 464.268.524	$ 542.181.795	$ 615.661.256	$ 693.296.431	$ 774.370.295	$ 860.064.162	$ 949.341.016
	Cash	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Accounts Receivable	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Work in Progress	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1	Finished Goods	**$ 34.399.268**	**$ 70.632.471**	**$ 109.746.579**	**$ 150.988.040**	**$ 195.399.750**	**$ 257.108.773**	**$ 321.962.027**	**$ 391.391.576**	**$ 464.268.524**	**$ 542.181.795**	**$ 615.661.256**	**$ 693.296.431**	**$ 774.370.295**	**$ 860.064.162**	**$ 949.341.016**
2	**Total Current Assets**															
	Fixed	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.898.	$ 2.8	$ 2.8

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No	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
	Assets	246	246	246	246	246	246	246	246	246	246	246	246	246	98.246	98.246
	Land	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375	$ 29.159.375
	Buildings	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475	$ 43.094.475
	Machinery and Equipment	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380	$ 179.674.380
	Permits															
		$ 4.623.371	$ 9.246.743	$ 13.870.114	$ 18.493.486	$ 23.116.857	$ 27.740.229	$ 32.363.600	$ 36.986.971	$ 41.610.343	$ 46.233.714	$ 50.857.086	$ 55.480.457	$ 60.103.829	$ 64.727.200	$ 69.350.571
	Less: Accumulated Depreciation	**$ 250.203.105**	**$ 245.579.733**	**$ 240.956.362**	**$ 236.332.991**	**$ 231.709.619**	**$ 227.086.248**	**$ 222.462.876**	**$ 217.839.505**	**$ 213.216.133**	**$ 208.592.762**	**$ 203.969.391**	**$ 199.346.019**	**$ 194.722.648**	**$ 190.099.276**	**$ 185.475.905**
	Total Fixed Assets	**$ 284.602.373**	**$ 316.212.204**	**$ 350.702.941**	**$ 387.321.030**	**$ 427.109.369**	**$ 484.195.021**	**$ 544.424.903**	**$ 609.231.081**	**$ 677.484.658**	**$ 750.774.557**	**$ 819.630.647**	**$ 892.642.450**	**$ 969.092.943**	**$ 1.050.163.438**	**$ 1.134.816.921**
3	**Total Assets**															
	Curr	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

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No	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
	ent Debt															
4	**Long-Term Liabilities**															
	Accounts Payables	$ 143.302.373	$ 132.749.509	$ 121.141.359	$ 108.372.393	$ 94.326.531	$ 78.876.083	$ 61.880.590	$ 43.185.548	$ 22.621.001	$ 0	$ -	$ -	$ -	$ -	$ -
	Total Liabilities	**$ 143.302.373**	**$ 132.749.509**	**$ 121.141.359**	**$ 108.372.393**	**$ 94.326.531**	**$ 78.876.083**	**$ 61.880.590**	**$ 43.185.548**	**$ 22.621.001**	**$ 0**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
5	**Capital**															
	Share Capital	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590	$ 101.930.590
	Retained Earnings	$ 39.369.409	$ 81.532.105	$ 127.630.992	$ 177.018.047	$ 230.852.248	$ 303.388.347	$ 380.613.722	$ 464.114.942	$ 552.933.066	$ 648.843.966	$ 717.700.056	$ 790.711.859	$ 867.162.352	$ 948.232.848	$ 1.032.886.331
	Total Equity	**$ 141.300.000**	**$ 183.462.695**	**$ 229.561.583**	**$ 278.948.637**	**$ 332.782.838**	**$ 405.318.938**	**$ 482.544.313**	**$ 566.045.533**	**$ 654.863.657**	**$ 750.774.557**	**$ 819.630.647**	**$ 892.642.450**	**$ 969.092.943**	**$ 1.050.163.438**	**$ 1.134.816.921**
	Total Liab	**$ 284.602.**	**$ 316.212.**	**$ 350.702.**	**$ 387.321.**	**$ 427.109.**	**$ 484.195.**	**$ 544.424.**	**$ 609.231.**	**$ 677.484.**	**$ 750.774.**	**$ 819.630.**	**$ 892.642.**	**$ 969.092.**	**$ 1.050.163**	**$ 1.134.816**

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No	Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
	ilities And Equity	**373**	**204**	**941**	**030**	**369**	**021**	**903**	**081**	**658**	**557**	**647**	**450**	**943**	**.438**	**.921**

The table shows Payback Period, which is a method that calculates how quickly an investment can be returned. Therefore, the result is expressed in units of time, such as years or months.

Table 10. Payback Period

Year	Outflow	Inflow		Net Cash Flow	Cumulative Net Cash Flow
		Net Profit	Depreciation		
0	$ 254.826.476,20		$ -	-Rp 254.826.476	-Rp 254.826.476
1	$ 10.164.751,63	$ 35.210.641,25	$ 4.623.371	Rp 29.669.261	-Rp 225.157.215
2	$ 11.384.521,82	$ 38.181.012,00	$ 4.623.371	Rp 31.419.862	-Rp 193.737.354
3	$ 12.750.664,44	$ 42.328.586,52	$ 4.623.371	Rp 34.201.293	-Rp 159.536.060
4	$ 14.280.744,17	$ 45.867.853,53	$ 4.623.371	Rp 36.210.481	-Rp 123.325.579
5	$ 15.994.433,47	$ 50.612.019,11	$ 4.623.371	Rp 39.240.957	-Rp 84.084.622
6	$ 17.913.765,49	$ 69.663.945,03	$ 4.623.371	Rp 56.373.551	-Rp 27.711.071
7	$ 20.063.417,35	$ 74.764.352,85	$ 4.623.371	Rp 59.324.307	Rp 31.613.236
8	$ 22.471.027,43	$ 81.521.679,46	$ 4.623.371	Rp 63.674.023	Rp 95.287.259
9	$ 25.167.550,72	$ 87.400.956,09	$ 4.623.371	Rp 66.856.777	Rp 162.144.036
10	$ 28.187.656,81	$ 95.149.015,46	$ 4.623.371	Rp 71.584.730	Rp 233.728.766
11		$ 68.856.089,97	$ 4.623.371	Rp 73.479.461	Rp 307.208.227
12		$ 73.011.802,95	$ 4.623.371	Rp 77.635.174	Rp 384.843.402
13		$ 76.450.493,15	$ 4.623.371	Rp 81.073.865	Rp 465.917.266
14		$ 81.070.495,18	$ 4.623.371	Rp 85.693.867	Rp 551.611.133
15		$ 84.653.482,98	$ 4.623.371	Rp 89.276.854	Rp 640.887.987

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Payback Periode	
Year	Days
5,53	197

In the Payback Period table, the results indicate a payback period of approximately 5 years and 197 days, meaning that the investment will be returned within 5 years and 197 days from the time the project or business is initiated. The value of 5.53 years indicates that all initial capital will be covered by cash inflow (profit) by the 6th year, although not entirely for a full year from that point onwards. The assumption is that investors can start to make net profits after this point is reached.

Table 11. Net Present Value

Year	Ouflow	Inflow		Net Cash Flow	Discounted Cash Flow		NPV
		Net Profit	Depreciation		15%	20%	18%
0	$ 254.826.476,20			$ -254.826.476,20	$ -254.826.476,20	$ -254.826.476,20	$ -254.826.476,20
1	$ 10.164.751,63	$ 35.210.641,25	$ 4.623.371,42	$ 29.669.261,05	$ 25.799.357,43	$ 24.724.384,21	$ 21.176.005,23
2	$ 11.384.521,82	$ 38.181.012,00	$ 4.623.371,42	$ 31.419.861,61	$ 23.757.929,38	$ 21.819.348,34	$ 18.945.681,26
3	$ 12.750.664,44	$ 42.328.586,52	$ 4.623.371,42	$ 34.201.293,50	$ 22.487.905,65	$ 19.792.415,22	$ 17.422.767,58
4	$ 14.280.744,17	$ 45.867.853,53	$ 4.623.371,42	$ 36.210.480,78	$ 20.703.459,91	$ 17.462.616,12	$ 15.583.950,35
5	$ 15.994.433,47	$ 50.612.019,11	$ 4.623.371,42	$ 39.240.957,06	$ 19.509.690,92	$ 15.770.060,55	$ 14.267.619,17
6	$ 17.913.765,49	$ 69.663.945,03	$ 4.623.371,42	$ 56.373.550,96	$ 24.371.841,76	$ 18.879.388,15	$ 17.316.334,34
7	$ 20.063.417,35	$ 74.764.352,85	$ 4.623.371,42	$ 59.324.306,92	$ 22.302.204,34	$ 16.556.325,30	$ 15.395.078,11
8	$ 22.471.027,43	$ 81.521.679,46	$ 4.623.371,42	$ 63.674.023,45	$ 20.815.151,21	$ 14.808.542,79	$ 13.959.831,28
9	$ 25.167.550,72	$ 87.400.956,09	$ 4.623.371,42	$ 66.856.776,79	$ 19.004.868,63	$ 12.957.291,25	$ 12.383.173,69

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10	$ 28.187.656,81	$ 95.149.015,46	$ 4.623.371,42	$ 71.584.730,07	$ 17.694.650,47	$ 11.561.333,56	$ 11.201.484,29
11	$ -	$ 68.856.089,97	$ 4.623.371,42	$ 73.479.461,39	$ 15.793.912,24	$ 9.889.452,70	$ 9.713.814,36
12	$ -	$ 73.011.802,95	$ 4.623.371,42	$ 77.635.174,38	$ 14.510.569,20	$ 8.707.301,45	$ 8.670.637,33
13	$ -	$ 76.450.493,15	$ 4.623.371,42	$ 81.073.864,58	$ 13.176.769,55	$ 7.577.477,87	$ 7.649.657,95
14	$ -	$ 81.070.495,18	$ 4.623.371,42	$ 85.693.866,60	$ 12.110.999,16	$ 6.674.400,98	$ 6.830.925,25
15	$ -	$ 84.653.482,98	$ 4.623.371,42	$ 89.276.854,40	$ 10.971.633,06	$ 5.794.556,33	$ 89.276.854,40
				Total	**$ 28.184.466,72**	**$ - 41.851.581,39**	**$ 534.620.290,80**

The company uses discount rates of 15% and 20% in its required NPV analysis. The discount rate is the minimum rate of return that investors expect, or the project's cost of capital. The NPV at a 15% discount rate totals $28,201,559.32, meaning the project provides a positive added value of $28.2 million. The NPV at a 20% discount rate is $41,845,104.18, indicating that the project generates a loss at a 20% discount rate and is therefore not feasible if the company requires a 20% rate of return.

CONCLUSION

Based on the result of the analysis that has been carried out in the feasibility study for the construction of the PT.X poultry feed factory in Gresik Regency, East Java, the following conclusions can be drawn in terms of financial feasibility, this project is declared feasible for implementation. This is indicated by a positive Net Present Value (NPV) of 15%, an Internal Rate of Return (IRR) that exceeds the minimum rate of Return (MARR) of 18% > 15%, and an investment payback period (payback period) that is shorter than the project life of 5 years and 197 days. Thus, the construction of this factory is expected to generate a profitable net cash flow in the long term.

From a macroeconomic perspective, the factory will significantly contribute to supporting the downstreaming of agricultural commodities, particularly corn, the primary ingredient in poultry feed. This project has the potential to create added value for local commodities, improve farmer welfare, and strengthen national food security. Furthermore, the factory's construction will have a multiplier effect on the regional economy, creating new jobs and expanding business opportunities in the agribusiness sector. From a market and marketing perspective, projections indicate that demand for poultry feed, both domestically and for export, continues to increase in line with the growth of the poultry population and Indonesian consumption of animal protein. Therefore, PT. X has a significant opportunity to capture this broad demand. Overall, the PT.X poultry feed factory construction project, considering all its aspects, can be declared feasible for realization.

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