

THE TECHNO-ECONOMY DYNAMIC SYSTEM ON BROILER FARMING INDUSTRIES IN WEST JAVA REGION

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Abstract

The basic research concept about positive feedback interaction between transformation process of technology and economy path was done with a study case approach on broiler farming industries in West Java Region. Technology path transformation as an internal aspect on micro level serves to promote the effectiveness optimality output toward, while economy path as an external aspect on the macro level serves functions to push efficiency leading of production going to input and output price stability. The aim of the research is to seek a systematic and holistic interpretation in determining problem solving model through mechanism of dynamics method system. Furthermore, this information can be used by the decision makers to formulate with appropriate strategies in facing changes of internal and external aspects. The research conclusions: Firstly, for knowledge contribution; the combination of technology and economy concept with regard to the positive interaction feedback is a contribution concept of techno economy knowledge. The mutual interaction is an issue that should be internalized in policy making process. Secondly, for policy contribution; i). in internal aspect, profile improvement of production resources competency among stakeholders need to be a part of policy on micro level, especially technology factor, ii). in external aspect, the price components of chicken meat as an output value, then raw materials and chicken feed as an input value, are macro level policy in economy factor on broiler farming industries determining.

Key words: techno-ekonomi, broiler farming, West Java Region, dynamic system

INTRODUCTION

The basic concept of this research is the positive feedback interaction between transformation process of technological path and economy, with a study case approach in broiler farming industries in West Java Region. Technological transformation as an internal aspect on the micro level serves to promote effectiveness toward output optimality, while economy as an external aspect on the macro level functions to push production efficiency leading to the stability of input and output price. The interaction of both factors can reflected maximal profit, in the (Fig 1, 2 and 3). (1,2)

Generally, the system dynamics of industries is determined by the interaction between internal and external factors.

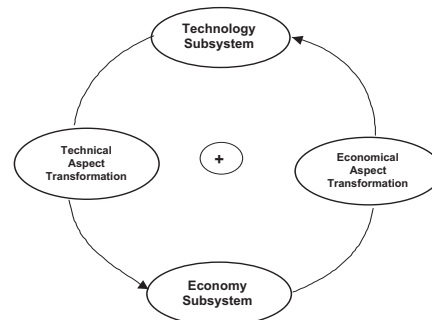


Fig. 1. Techno-Economy System

The internal factors of broiler farming are factors directly generated within the industrial system and controllable by the businessmen using technological approach, such as the process of chicken rearing, prevention of chicken mortality, and supply of chicken meat. (4,5)

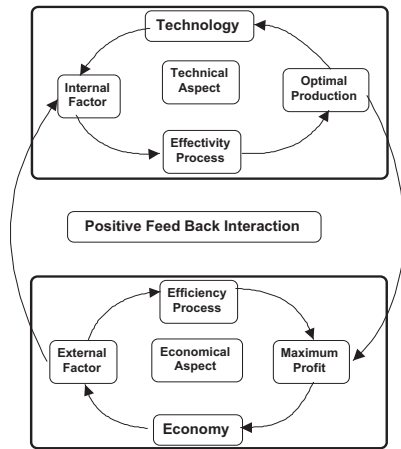


Fig. 2. Techno-Economy Transformation

The external factors consist of factors which are directly uncontrollable by mechanism within business units, but they directly affected performance of business units, were included the demand of chicken meat, substitution goods, population, income, chicken meat price, Day Old Chick price, feed price, corn price, soybean meal price, and fish meal price. (3,4)

THE RESULT OF RESEARCH

The increasing of chicken meat demand in West Java region was potential for dealing on broiler chicks, development, even for smallholder, medium or large farmer, as look as on these (Graphics 1,2,3 and Table 1). (6,7)

THE OBJECTIVE OF RESEARCH

This research aims to seek a systematical and holistic interpretation in determining problem solving model through system dynamics method. Further, the information can be used by decision makers to formulate appropriate strategies in facing changes of internal and external aspects.

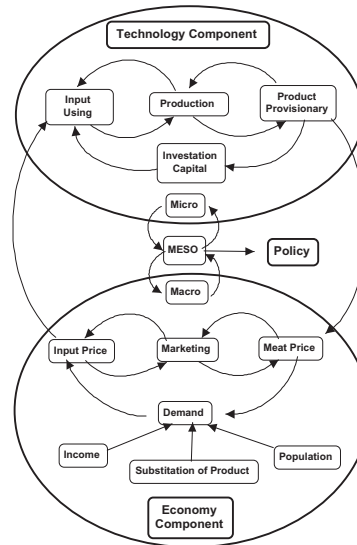
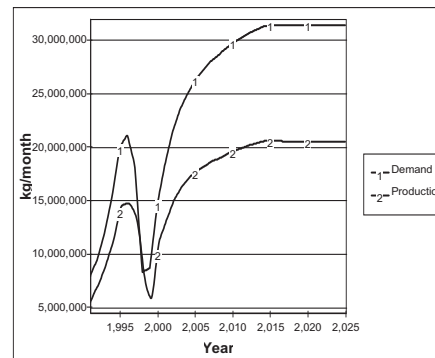
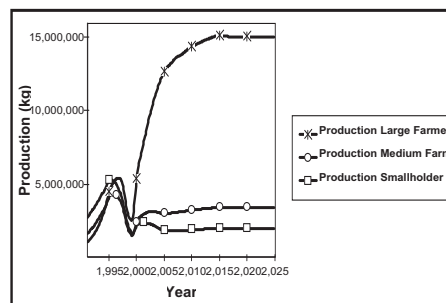


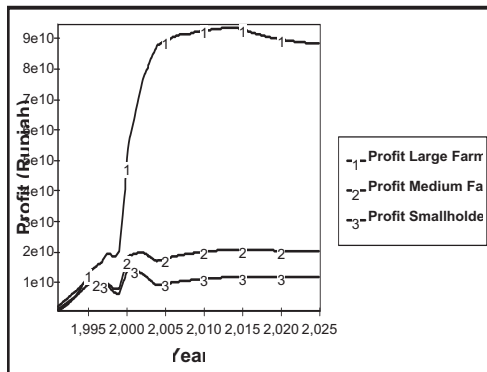
Fig. 3. Diagram of Techno-Economy Sympal Causal



Graphic 1. Simulation Product of Basic Model



Graphic 2. Broiler Meat Production



Graphic 3. The Profit of Broiler Farming Industries in West Java Region

Table 1. The Analysis of Broiler Meat Demand

Year Phase	1990-1996	1997 – 1999	2000–2003	2004-2025
Demand	Medium Increasing (8-20) jt kg	Decreasing (16-10) jt kg	Slowly Increasing (14-24) jt kg	Medium Increasing (25-31)jt kg
Production	(5-15) jt kg	(14-6) jt kg	(10-16) jt kg	(17-21) jt kg
	RP	RP	RP	RP
Chicken price	(1700-3050)	(3400-7850)	(9300-8425)	(8200-8175)
Ration price	(300-750)	(900-2150)	(2275-2100)	(2050-1975)
DOC price	(500-750)	(1000-2300)	(2200-1775)	(1775-1900)

CONCLUSION AND IMPLICATIONS

The results of this research come to conclusions as follow:

Firstly, the contribution to knowledge.

The combination of path of technological concept and economy with regard to positive feedback interaction is a contribution to concept of knowledge techno-economy of Economy as well as Technology i.e. the mutual interaction between both of them. The mutual interaction is an issue that should be internalized in the process of policy making.

Secondly, the contribution to policy i.e.:

- i) From internal aspect, improvement in profile of production resources competencies among stakeholders need to be a part of policies on the micro level, especially technological factors,

- ii) From external aspect, the components of price of chicken meat as an output value as well as raw materials and feed as input values are macro level policies of economy which are determinant of success in broiler farming industries.

Thirdly, the contributions to operations are:

- a. Within the domain of knowledge, the development of the model of positive feedback with system dynamics method based on the concept of technology and economy approach is possible to be applied in industrial business,
- b. The profile of production resources competency in broiler farming industries needs to be improved through a training system using Training Centre and Teaching Farm method,
- c. Production process agricultural industry that serves as the supplier of chicken meat according to consumers preferences is able to be a standard of price control, and
- d. Stability of raw material price needs to be controlled by the government through efforts to boost domestic commodity in order to reduce import dependency. Therefore, the boiler farming industries should be local resource-based industries in the long run.

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