



ASPECT AND IMPACT OF THE EXISTENCE OF BREEDING COMPANIES OF RACIAL CHICKEN IN THE NUSA TENGGARA TIMUR PROVINCE

Jefirstson Richset Riwukore¹, Fellyanus Habaora²

¹Lecturer of Management Graduate Program of Indo Global Mandiri University
Jenderal Sudirman Street, No.629 Palembang, Postal Code 30129

²Post Graduate Programe Animal Production and Technology, Faculty of Animal Sciences, Bogor Agricultural University.

ABSTRACT

The Nusa Tenggara Timur province is one of the province in Indonesia that has the potential of development the poultry industry so that it needs to be studied aspects and impacts of the existence of a breeds company of racial chicken to be established. Therefore a this study was used descriptive method, then analyzed qualitatively and quantitatively. The results showed that the Nusa Tenggara Timur province has the potential to be established breeding companies but needs to consider several aspects, namely: aspects of law politics, socio culture, economy, land available against the rate population growth, and market chains.

Keywords: companies, breeding, racial chicken.

INTRODUCTION

Racial chicken businesses in Indonesia have contributed significantly to the development of the livestock sector and have strategic value support towards animal protein intake and employment. But the poultry industry of racial chicken is still facing a global threat because it is weak in its readiness to supply feed raw materials which constitute 60-70% of production costs because it still depends on imports (Riwukore and Habaora, 2019), so that it is necessary to consider efficiency based on substitution of local feed ingredients but have outcomes that compete in the free market. Therefore the efforts that need to be done are substitution of feed ingredients, product quality improvement, increasing livestock productivity, fostering human resources and forming independent cooperatives (Fitrah 2013; Hani and Rokhmani, 2018). One poultry that has development prospects is racial chicken because the support of characteristics of product which can be accepted by all levels of society. But in establishing and developing racial chicken businesses in an area need to consider the aspects and impacts that affect it such as the aspect of political, socio-cultural, economic, population development related with need animal protein intake, and transportation.

The province of Nusa Tenggara Timur (NTT) is one of the province in Indonesia that has the potential to develop the industry of racial chicken because still have enough land for the development of an industry, and does not conflict with norms and rules. But before that it was necessary to study the aspects and impacts of establishing a chicken breeding company so that when implemented the model breeding company business of racial chicken in NTT already known the aspects and impacts of the business. Based on this, the research was conducted to know and understand the aspects that affect the establishment of breeders company of racial chicken in NTT, and able to estimate the impact that can be caused by the breeding companies of racial chicken if it is established in NTT.

Table 1. The racial chicken population in NTT province of the year 2013-2019.

District/City	Year						
	2013	2014	2015	2016	2017	2018**	2019**
0	1	2	3	4	5	6	7
Sumba Barat	18.362	-	-	-	-	-	-
Sumba Timur	-	18.546	18.733	18.922	19.032	19.088	19.145
Kupang	144.241	144.226	145.076	121.788	146.435	149.766	153.174
TTS	-	-	-	106.120	106.120	107.870	109.648
TTU	1.196	1.208	1.220	1.232	1.239	1.239	1.239
Belu	-	-	-	-	-	-	-
Alor	6.602	6.604	6.644	224.591	225.894	233.822	242.028
Lembata	-	7.832	7.911	7.991	130.167	132.799	135.485
FloTim	-	-	-	-	-	-	-
Sikka	-	51.400	51.866	346.000	348.006	366.821	386.654
Ende	-	96.567	97.507	193.898	200.000	206.214	212.622
Ngada	3.661	3.695	3.731	3.768	3.790	3.792	3.794
Manggarai	14.282	14.425	14.571	18.081	33.000	33.169	33.339
Rote Ndao	-	-	-	-	-	-	-
MaBar	-	-	-	-	112.000	113.949	115.932
SBD*	-	-	-	310.908	312.711	327.903	343.834
SumTeng*	-	-	-	23.900	24.039	24.129	24.219
Nagekeo*	-	-	-	-	660.202	727.918	802.580
MaTim	-	-	-	6.741	6.780	6.787	6.794
SaRai	8.809	8.897	8.987	9.078	8.497	8.508	8.519
Malaka	-	-	-	-	-	-	-
Kota Kupang	572.942	578.346	195.054	3.646.659	4.098.752	6.708.764	10.980.784
NTT	770.095	931.746	551.300	5.039.677	6.436.664	9.172.540	13.579.790

Source: processed from BPS data by year.

Information: * new district/city, ** estimate data

The Kota Kupang is the region with the highest distribution of racial chicken populations compared to other regions. This explains that Kota Kupang is the main base of racial chicken business in NTT (Figure 2). The basis of economic activity is influenced by the distribution of population, activities, and types of businesses themselves.

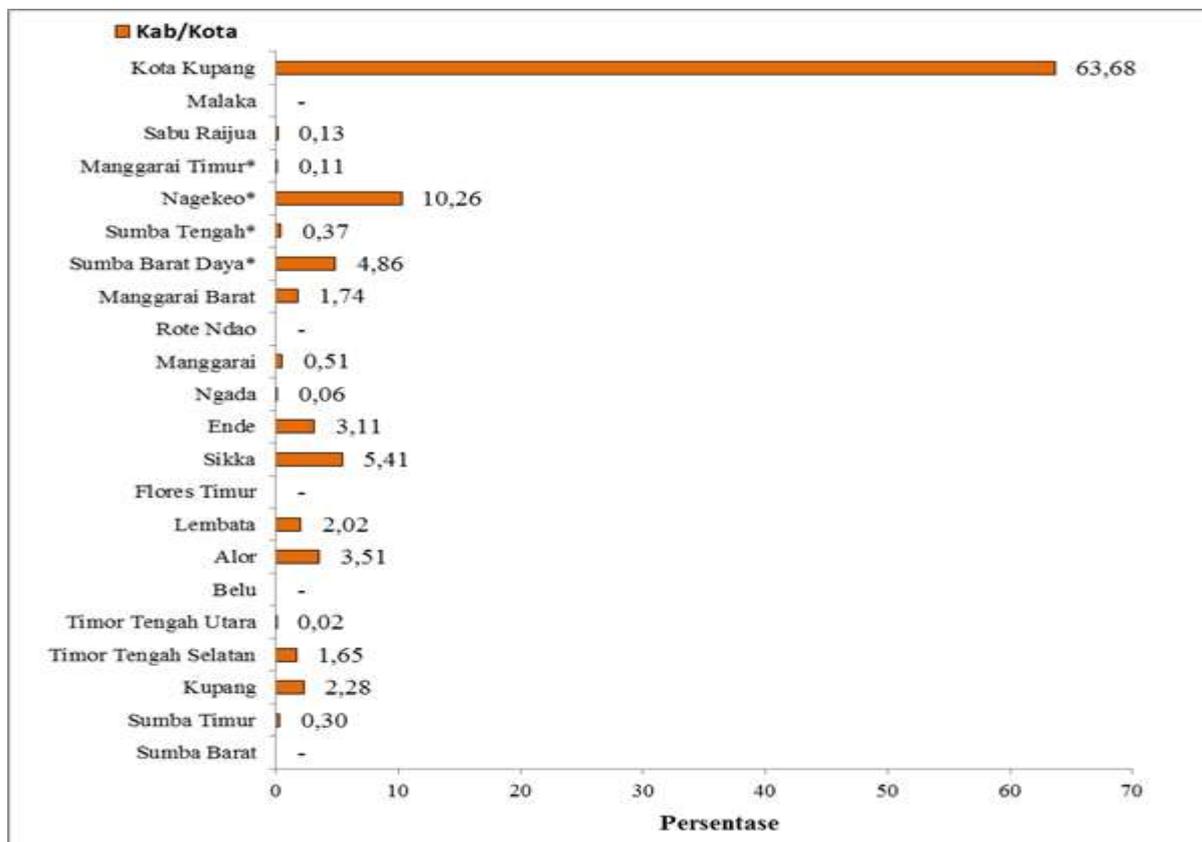


Figure 2. The spread percentage of racial chicken in NTT

Based on population data and the percentage of spread of racial chicken in NTT province then the Kota Kupang (63,68%) potentially as the central production of racial chicken breeding in the mainland of Timor Island and its surroundings. While on the mainland of Flores and Alor islands and surrounding areas, the district which has the potential to be the central production of racial chicken breeding is Nagekeo district. Meanwhile, on the Sumba island, Sumba Barat Daya district is a potential as a central production of racial chicken breeding with a percentage of 4,86%.

Racial chicken is one of the poultry that is easily farmed with a relatively short harvest period so that it has the potential as a productive economic business. Yemima (2014) reported that the advantages of racial chicken (broilers type) are short production cycles, which can be harvested in 4-6 weeks with a body weight of 1,5-1,56 kg/head. Fitrah (2013) states that racial chicken (broilers type) are meat-producing livestock that are relatively faster than other poultry. The more effective maintenance of racial chicken will increase the income of farmers from the business (Ratnasari et al., 2015). Whereas Daud et al. (2017) reported that the average body weight gain of racial chicken (laying chickens type) that could be harvested on 6 weeks old ranged from 178,1 to 190,1 grams/head/week with limited feed conditions. Then egg production >50 grams per egg per head (Habaora, 2015; Jaelani et al., 2016). While Margawati *op.cit.* Fahrudin et al. (2017) reported that the weight gain of an 8 weeks old native chicken (chicken is not a ras) which was traditionally and intensively maintained only reached 143,55 g. Thus the potential of racial chicken in livestock business is higher than the potential of native chicken. This difference is strongly influenced by genetics (strain), sex, environment, maintenance management, quality and quantity of feed consumed. Riwukore and Habaora (2019) state that the growth and development of livestock is largely determined by the interaction between genetic factors and environmental factors. Racial chicken are chickens that are fast growing and maintained in a fast time because after that they are no longer efficient as laying and producing meat, and if it is continued, the farmer can suffer losses due to increasing feed consumption.

Meanwhile that the advantages of the existence of racial chicken farms and central of breeding product in several districts/cities in NTT have the potential to increase local revenue, reduce unemployment because of existence employment opportunities, increase the productivity of the working age of the community, and the availability of cheap animal protein sources in the community. In addition, racial chicken waste can benefit economies such as feces as fertilizer and chicken feathers as handicraft materials.

3. Aspects of existence of racial chicken breeding companies

The definition of a livestock company is in accordance with Law On Livestock Business Number 16 of 1977, Article 1 Paragraph (3) is a business that is carried out regularly and continuously at a place and in a certain time for commercial purposes which includes activities to produce livestock (breed livestock or meat livestock), eggs, milk, or fattening a livestock, including collecting, distributing and marketing it, and each type of livestock cultivated exceeds the amount set for types on people's farms. Whereas the Law On Livestock and Veterinary Number 18 of 2009, Article 1 paragraph (5) states that a livestock company is an individual or corporation in the form of a legal entity or not a legal entity established and domiciled in the territory of the Unitary State of the Republic of Indonesia which manages livestock business with certain criteria and scale.

Based on the above, it can be concluded that the existence of racial chicken companies in the Nusa Tenggara Timur province very much depends on the political-law aspects (policies and regulations), social-culture, economic, land availability, total population, and distribution. Fadjarani (2008) states that community dynamics and conversion of agricultural land are influenced by population pressure on land, social status, economic status, lifestyle, space behavior, perceptions of land value, changes in land area, changes in land ownership status, change of land function, and environmental sustainability. Whereas Purwaningsih (2008) states that problems related to food security are the supply, distribution and consumption of food.

The political-law aspects. The existence of racial chicken breeding companies from the political aspect depends on the aspects of licensing regulated through the mechanism of policy and legislation in the form of Laws, Ministerial Regulations, Regional Regulations, or Regional Head Regulations. Livestock company permits can be given to individuals or legal entities (incorporated company or cooperatives, etc.) who are ready to carry out production activities, including importing livestock or livestock breeding.

Permit for racial chicken farms is given by the Director General of Livestock and Governor with the provision of a minimum of 10.000 hens for laying hens, and at least 65% for exports from Foreign Investment capital. Whereas for people's farms, they are not required to have a livestock company permit but only with the People's Livestock Registration Certificate from the local Animal Husbandry Office with provisions for cultivation under 10,000 hens.

Decree of the Agriculture Minister Number 362/Kpts/TN.120/5/1990 detailing the licensing procedures of livestock companies, as follows.

1. Livestock company before applying for a business license, need to makes a submit a request for approval of principle to authority according to each region, such as to Directorate General of Livestock and Veterinary, Agriculture Ministry of the Republic of Indonesia for national scale businesses, or to the Governor for the provincial business scale, and to the Mayor/Regent for the city/regency scale.
2. The approval of principle are determined no later than 20 working days to notify that the approval of principle from the livestock company is accepted or rejected. This approval of principle is valid for 1 year and can be extended once a year.
3. The livestock company then submits a business permit to the Directorate General of Livestock and Veterinary or the Governor/Major/Regent accompanied by a copy of the copy to Head of Local Animal Husbandry Office with attachments as follows: location permit, building permit (IMB), business permit (HGU), place of business permit (HO), foreign labor permit, permit to install the necessary equipment and installation, livestock entry permit for companies that will market livestock, environmental management efforts and environmental monitoring efforts (UKL-ULP).
4. At the latest 20 working days after receipt of a complete copy of request of the livestock company permit then the local Animal Husbandry Office checks the company's readiness for production in accordance with the technical guidelines of livestock company.
5. At the latest 5 working days after the inspection then the local Animal Husbandry Office reports the inspection results to the Directorate General of Livestock and Veterinary or the local of Governor/Major/Regent.
6. At the latest 20 working days after receiving the results of the inspection by the Directorate General of Livestock and Veterinary or the local of Governor/Major/Regent then a livestock company permit is published or postponed it.

Some legal political products about aspect of establishing a livestock company have the consequences of change when implemented by regions through Regional Regulations and/or Decrees of Regional Heads. For example, the Kota Kupang Regional Regulation Number 10 of 2003 about Regulations, Control and Livestock Maintenance Permits in Kota Kupang requires individuals and companies that have more than 201 hens for commercial purposes to must have the Mayor's permission. These provisions are regulated in Article 7 of the Kota Kupang Regional Regulation Number 10 of 2003, as follows.

1. Every person or business entity that carries out livestock maintenance must obtain the Mayor's permission.
2. To obtain the permit as referred to in paragraph (1) of this Article, the applicant must submit a written application to the Mayor.
3. The permit application referred to in paragraph (1) of this Article is completed with: Recommendation Letter from urban village, photocopy of Resident's Identity Card, Business Place License, Taxpayer Identification Number, Environmental Management Plan Document and Environmental Monitoring Plan.
4. If the applicant as referred to in paragraph (1) of this Article is rejected, the rejection must be notified in writing.
5. A livestock maintenance permit is given to the applicant after a field inspection that the intended permit does not pose a danger of interference or loss to the public interest.
6. Permit as referred to in paragraph (1) of this Article is given for a maximum period of 1 year.
7. The permit referred to in paragraph (6) of this Article which has expired can be extended / renewed after held a re-examination of the maintenance location.

Issuance of permits for livestock companies in addition based to the prevailing regulatory mechanism, is also influenced by business conditions in the local area. Subsector of poultry farm in NTT cannot be forced on areas that have a relatively small spread of distribution of racial chicken such as Sumba Barat (SumBar) districts and Belu districts (Table 1). Meanwhile, the permits of livestock companies are also influenced by the political policies of the local regional heads. Political policy Frans Leburaya Governor (2007-2018), livestock sub-sector has a dominant role to realize political ideals "NTT as a warehouse livestock". But it is different from the political policy of Governor Viktor Bungtilu Laiskodat (Period 2018-2023) who put down the forestry subsector "kelornisasi (*Moringa oleifera*)" to achieve political ideals "NTT achieves food security".

Social-culture. Hani and Rokhmani (2018) explain that the characteristic of entrepreneurship is offering something useful for others. The greater the needs of people for the products and services offered then the income earned is also greater. The existence of a racial chicken company is relatively not contrary to the socio-cultural conditions of the population because chicken livestock is almost maintained by all residents, and accepted by customs and religion. This has also been determined in Decree Agriculture Minister Number 35/Permentan/OT.140/8/2006, point (c), namely paying attention to and respecting the customs and culture of the local residents. But on a socio-cultural basis, the establishment of a livestock company needs to consider the location and place that does not interfere with community service activities, such as offices complex, health services, houses of worship, public education units (schools, colleges, and campuses), shops, airports, seaports, terminals, green open spaces, urban recreation, sports areas, urban forest borders, public cemeteries, densely populated settlements, and other public facilities that can cause accident disruption.

Law On Protection and Management of the Environment Number 32 of 2009, Article 1 Paragraph (15) is also regulates every effort made need to attention efforts to environmental management and efforts to environmental monitoring. This needs to be done so that decision making about the establishment of racial chicken breeding companies from the socio-cultural aspects does not conflict with the social culture of the local community and to preserve the environment. Therefore, every permit that will be issued only permits that have passed the Environmental Impact Analysis (EIA), namely an assessment report on the significant impacts of the company's business and/or activities on the environment, which is necessary for the process of the decision making regarding the running of the business and/or activities. The things studied in the EIA include: physical-chemical, ecological, socio-economic, socio-cultural, and public health (Masri 2016). Priyambodo and Kuspriyanto (2016) state that environmental analysis aims to maintain and improve environmental quality and reduce pollution so that the negative impact is small.

Ekapriyatna (2016) reports that racial chicken farms have been accused of participating in environmental pollution lately. This condition is due to the understanding of negative impacts is still lacking so that the public or company simply ignores the dangers of these negative impacts (Priyambodo dan Kuspriyanto, 2016). Riwukore et al.(2019) stated that the community complained that many farmers or companies ignored handling waste from their businesses. Livestock wastes such as feces, leftovers, and water from cleaning livestock and cages cause pollution of the environment around the location of the farm. The impact of environmental pollution is air pollution (odor), many flies arise, concerns about the spread of the alvian influenza virus, and so forth.

Air pollution from unpleasant odors is very disturbing to residents who live around the company or cage. This is due to a lack of management in the management of post-harvest waste and chicken traffic. This unpleasant odor comes from a high ammonia gas content because there is a buildup of feces that is still wet in an anaerobic condition. Riwukore and Habaora (2018) report that ammonia gas has a negative influence on humans and livestock (Table 2).

Table 2. Effect of ammonia gas on humans and livestock

No.	Ammonia level	Symptoms / effects caused
1.	5 ppm	The lowest level that smells
2.	6 ppm	Irritations begin to occur in the mucosa of the eye and respiratory system
3.	11 ppm	Decreased productivity in chickens
4.	25 ppm	The maximum level that can be tolerated for 8 hours
5.	35 ppm	The maximum level that can be tolerated for 10 hours
6.	40 ppm	Starting to cause headaches, nausea, loss of appetite in humans
7.	50 ppm	A drastic reduction chicken productivity and swelling of Fabricious

Socio-cultural conflict can occur because the many flies. Flies are a type of insect from the Cyclorapha subordo and Diptera ordo which acts as a mediator for the transfer of disease from sick chickens to healthy chickens, disrupting the activities of the cage worker, reduce chicken productivity, and melt chicken feces so that it increases ammonia levels in the cage (Radillah et al., 2017). There are many types of flies in Indonesia, but most harm humans is the type of house flies (*Musa domestika*), green flies (*Lucilia.Sp*), blue flies (*Calliphora vomituria*), and latrine flies (*Fannia cunicularis*). Flies are very disturbing to residents who are around the settlements so that they always cause protests and conflicts because besides disturbing the view, these flies become mediators of germs through their body feathers, legs and other body parts for dysentery, diarrhea, typhoid, and cholera (Priyambodo and Kuspriyanto, 2016). The spread of germs by flies is triggered when flies perch on garbage and human or animal feces, then fly and perch on human food and when consumed cause symptoms of illness such as stomach ache, intestinal disorders, high fever, headache and/or dysentery.

Psycho-effects of the spread of the avian influenza virus (H5N1). *Avian influeza* is a dangerous and deadly infectious disease (High Pathogenic Avian Influenza/HPAI) that caused by influenza type A virus (H₅N₁), including family *Orthomyxoviridae* of the influenza genus that generally infects poultry and humans. In general the symptoms of being infected with avian influenza in humans are high fever, respiratory and stomach complaints, muscle ache, sore throat, cough and shortness of breath. If in the last 7 days there has been contact with sick or dead poultry, then the body's condition dropped dramatically, immediately had to be helped because it could die effect complications (respiratory failure and other bodily function disorders) (Garjito 2013; Lu et al., 2019). The H5N1 virus was first identified as occurring in Italy around 100s years ago, then spread throughout the world. WHO noted the number of human cases infected with the H5N1 virus from the beginning of 2004 to December 31, 2013 reached 228 people and 181 people (79,39%) ended in death. The period of June 2007, from 310 cases of avian influenza identified according to WHO reports, Indonesia is the country with the highest percentage of spread (31.94%) with a death number of 79 people (79.80%), followed by Vietnam as many as 93 cases (30%) with dead numbers of 42 people (45.16%). Psikoefek the incidence of avian influenza causes licensing of chicken farms to get resistance from the community, and has an impact on decreasing consumption of animal protein from poultry sources. Farmers and the community need to be briefed on guidelines, prevention, control and eradication of avian influenza, and if symptoms of avian influenza are found, early action is taken immediately and reported to the authorized officer.

Economic aspects. The aspect of the establishment of a racial chicken breeding companies in the Nusa Tenggara Timur province theoretically has positive and negative impacts. Positive impacts such as shortening the distance of transportation in the procurement of seedlings of Day Old Chicken (DOC), opening new jobs so as to reduce unemployment, and bring income to the region.

The positive impact of racial chicken breedings companies in NTT province is that farmers no longer import DOC from outside NTT and reduce losses that have been experienced by racial chicken breeders, such as: DOC that dead, transportation that expensive, and prices that relatively expensive. The existence of racial chicken breeding companies that produce DOC according to regional needs caused the selling value of DOC in NTT is lower than the selling value DOC of the imported from Java so far, the difference in margin received by farmers is clearly cheaper from each DOC box, and ease the distribution of DOC to district/city areas in NTT, and simplify integrated health supervision of DOC distribution. Thus it will improve the economic and health quality of the people of NTT. The presence of racial chicken breeding companies in NTT is able to reduce most of the unemployment in NTT province which has reached 78.548 people from various levels of education. Even the absorption of labor can reduce the impact of other economic disparities such as poverty, crime, violence and horizontal conflict. Positive influence on the government and regional government is the presence of state and regional income increases from the results of taxes and / or levies from racial chicken breeding companies that have an impact on increasing the budget for people's welfare. The existence of new jobs in poultry companies is

expected to reduce the poverty rate in NTT which has reached 21.38% or as many as 1.13 million people with a poverty line of IDR 343,396 per capita per month (BPS 2018).

Meanwhile, the existence of racial chicken breeding companies in NTT province has the potential occur a monopoly on the price of DOC produced due to the central of economic power done by one business actor/seller that causes mastering of production and/or marketing certain services thus giving rise to unfair business competition and can harm the public interest. Likewise the efficiency in the distance of transportation between the stock area and the importer area does not guarantee good quality. The possibility of this happens casually in a pattern of distribution with poor management. The assumption of poor seed quality cannot be justified if the distribution management starts from the DOC go out from the factory to the breeder is good. This condition is to observe the assumption that DOC imported from outside NTT are bad because the prevalence of DOC deaths arriving at the airport is very high.

The aspect of availability of land against the rate of population growth. Growth in demand and needs of animal protein is influenced by the rate of increase in population, increase in income, and lifestyle. The population growth percentage of the Nusa Tenggara Timur province averaged 6,44% with a new household increase ratio of 1,96% (BPS 2019). An increase in the number of populations (residents and households) further narrows the available land. Narrowing of land will increase with the rapid development of infrastructure. The impact of land narrowing at a certain point will create conflict and business expansion competition between racial chicken breeding companies against the speed of infrastructure development and population settlement. Therefore, land regulation must start early with strict and strict rules.

Transportation and distribution. Transportation plays an important role in the distribution of a product commodity that will be offered in the trade of a company. For example, breeding breeding companies generally have a production capacity of at least 800 boxes of DOC (equivalent to 80 thousand DOC per week) to fulfill DOC needs in Kota Kupang 100,000 DOC per month, then the production of the company a month (± 4 weeks) is 320.000 DOC/month for needs 100.000 DOC at Kota Kupang. This means that there is excess stock that must be distributed to other districts outside the Kota Kupang. BPS (2019) reports that per capita income for each region varies with the level of consumption and the demand for meat that varies, which tends to be small. The creative business index in NTT is still low, so the opportunity to create new businesses as partner cattle from racial chicken breeding companies is relatively low. This condition could make it difficult for racial chicken breeding companies to channel excess production from the minimum capacity of DOC production.

Meanwhile, racial chicken breeding companies are still difficult to open distribution channels and deliver excess DOC production to potential areas such as Maluku, Papua and Nusa Tenggara Barat provinces. This is due to the flight transit center from NTT to 3 (three) provinces that have a more long trading chain again because domestic flight transit centers from NTT are Djuanda Airport (Surabaya) and Ngurah Rai Airport (Bali). While the distribution of excess stock to the district in NTT is still hampered by a one-day flight schedule with limited shipping capacity also on cargo aircraft according to technical guidelines in Airport Animal Quarantine Center. Delivery of excess DOC stock to regions use seaport lanes will increase the DOC mortality rate. Nevertheless, NTT has the potential to channel DOC with land lanes to Timor Leste. Improvement in management of transportation and distribution of livestock seeds needs to be improved. Consideration of the excess production of DOC towards an increase in the opening of new businesses for farmers around using the core-plasma principle can be considered.

Yulfita and Aini (2015) state that in the agricultural economy between the distance of business to the market, businesses that are closer to the market have higher value because of greater the economi productivity. Meanwhile, transportation and distribution costs depend on many factors, including the nature of materials (heavy and large), requiring caution and special treatment, and perishable or long-lasting materials (Riwukore and Habaora, 2018). Thus consideration of the distribution chain needs to be because the shorter the market chain, the greater the margin obtained, and the longer the distribution chain, the smaller the margin obtained.

Thus the establishment and development of racial chicken breeding companies have both positive and negative impacts according to the aspects that influence them, such as aspects of legal politics, socio-culture, economy, the influence of land on population growth and its dynamics, transportation and distribution. Consideration for carrying out an inventory and repair of negative impacts based on these aspects needs to be done early to achieve the ideals of prosperity and benefit together.

CONCLUSIONS AND RECOMMENDATIONS

The Nusa Tenggara province has the potential to establish a land-based racial chicken breeding company, namely: Kota Kupang and Kupang district for Timor island, Sumba Barat Daya district for Sumba island, and Nagekeo district for Flores Island. However, needs to consider several aspects, namely aspects of legal politics, socio-culture, economy, provision of land against the rate of residents growth, and market chains. The recommendation of this research is that a further detailed study and analysis is needed in the establishment of racial chicken breeding companies in NTT based on the aspects that influence it.

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