Integration of livestock supply chain strategy as part of the creative economy and creative industry in Indonesia: literature review

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Abstract. Low production capacity and the traditional farming method that is practiced in Indonesia have resulted in Indonesia dependent on imports to fulfil the demand. Meat, milk, eggs, even skins still can not be fully supplied from national production. Livestock supply chain strategies such as the application of the creative economy and creative industries are needed to overcome the dependency gap on imported raw materials. The challenge in Indonesia is lack of technology & knowledge. This study aimed to determine the role of the creative economy and the creative industry in improving the livestock supply chain in Indonesia. This study used a conceptual method from a literature study. Currently, the creative economy and creative industries are still relatively at the level of SMEs. The recurring problem shows the weak management of technology and knowledge. Based on the literature study result, the creative economy and creative industries can increase the supply of livestock in Indonesia. Hopefully the research on creative economy strategies and creative industries will not only become a trend but also sustainable in the future.

1. Introduction

Indonesian livestock products are still unable to meet domestic needs, most of them still depend on imports. It is undeniable that currently the livestock business in Indonesia is still dominated by smallholder/traditional livestock with low production capacity. Low production capacity is also influenced by traditional farming methods [1,2]. Based on livestock production in Indonesia, growth is focused on the food industry, leather processing industry, and feed support. The growing food industries are meat processing and milk processing. The downstream food industry that uses dairy products and eggs is also growing rapidly, for instance, the biscuit industry. The leather industry has developed and started to develop well. Meanwhile, the domestic feed industry, which is mostly driven by multinational companies, continues to grow in Indonesia.

Beef cattle is one of the potential agricultural sectors in Indonesia, but not many people have been involved in the business sector [3]. Therefore, many development programs are launched by the Aceh Government, including fostering, monitoring, and evaluating the breeding system and trading models that have an impact on increasing the profits of the cattle business. Currently, the beef cattle population in Indonesia from 2014 to 2020 shows a graph that tends to stagnate. In 2014 the beef cattle population in Indonesia was 14.7 million heads and continued to grow positively to reach 17.1 million heads in
2019, but is predicted to decline by 1.76 percent in 2020 [4]. In addition, the beef cattle farming system in Indonesia is still traditional and resulting in low economic income for farmers.

The livestock product supply chain technically includes farmers, marketers who supply products to food processors/producers, wholesalers, retailers, and consumers [5]. However, the right supply chain path to creating a livestock product depends on the product characteristics, size, and market power of the supply chain members [6]. Most livestock product industries that participate in the livestock supply chain consist of small and medium enterprises (SMEs) [7]. The role of SMEs can provide job opportunities but needs to ensure regional balance by taking industrialization to rural and underdeveloped areas. The problem that occurs in the field is that SMEs are still practicing traditional methods in terms of production, marketing, and distribution. Digital literacy is needed to help SMEs' problems by improving digital technology and designing/restructuring. It is necessary to implement the right strategy to maximize the performance of SMEs in increasing their production.

The creative economy and creative industries are a livestock supply chain strategy to overcome the dependency on imported raw materials by developing knowledge and technology. The purpose of this activity was to provide information that can be implemented by livestock-based industry players, livestock business actors, and industrial and livestock policymakers.

2. Literature review
The creative economy has the potential to recognize the relevance of human capital in integrating socio-economic goals and opportunities based on creative entrepreneurship [8]. The creative sector supports the presence of technology in companies by developing creative inputs in areas that invest in research and development [9]. The creative economy is integrated across all industries rather than a separated sector. It is not limited to the core creative industries and drives innovation-driven growth, but creative workers are embedded in all sectors of the economy and responsible for the creation and adoption of new products. While many people are core or creative specialists that work in positions in administrative, support or managerial positions in the creative industries, others work in creative positions embedded in the non-creative sector. [10] argue that professionals and the creative sector contribute to the manufacturing and livestock industries, for example, with creative thinking, innovation, new solutions, instruments for networking, interdisciplinary research, alternative perspectives, work methods, and new insights.

Fleischman et al [11] shows that creative industries drive economic growth with their innovation methodology, co-creation based on active involvement, in value creation systems will benefit from products, services, or processes and design thinking, which focuses on building empathy, rapid learning, rapid prototyping, and iteration of solutions through user feedback. Creation and design thinking have
approached innovation from a human-centered perspective, spawned disruptive and profitable business models, and filtered their ideas in other sectors in urban and rural areas.

3. Research methods
This study used a supply chain model and literature review with a SWOT analysis approach. Literature search was done by browsing with a search engine (google). The topics sought were related to the creative economy, supply chain, SMEs and parties related to empowering creative industries. Supply chain analysis was used to identify the interrelationships of all parties involved in input, process, implementation, marketing and other mechanisms of the livestock industry in Indonesia. In addition, the SWOT analysis compared the external factors (opportunities and threats) and internal factors (strengths and weaknesses) that affect the Indonesian livestock industry.

4. Results and discussion

4.1. Creative economy strategy for improving the livestock supply chain
According to Jesus [9], in the industry 4.0 and the new era of globalization, consumers are increasingly informed about the food system and interested in sustainable production, animal welfare, climate change, food waste, and lifestyle related to increasing health knowledge and nutrition education. This emerging trend in livestock systems is related to the transition to a post-industrial creative economy, where an understanding of livestock technology, knowledge of livestock industry workers and creativity-based creativity, and flexibility of production processes are fundamental [12]. The development of Information Technology has drastically changed the business environment. The use of the internet for both product marketing and network development in recent decades is beyond the classical economic concept which states that ownership of factors of production is the key to business success [13].

The i-Ternak program also involves several government programs such as a guarantee program, through insurance, which aims to facilitate supervision. Cattle must pass the SKKH test, therefore the cowshed is standardized by the livestock service and has more Islamic nuances that are more directed to the sharing economy, namely the attitude of participation in economic activities that create value, independence and prosperity. Capital saved in the form of raw funds can be collected and used for beef cattle development so as to increase people's income and improve welfare. I-Ternak, provider of peer to peer lending (Information Technology-Based Money Lending Services). The advantages of raising livestock through i-Ternak are that farmers become more experienced (certified), distribution network becomes more integrated, livestock is healthier and more beneficial: Risk Control Profit Sharing Pattern (Animal Insurance). Business management is carried out by PT MEK as the party that uses the money to buy cattle (cows), administers SKKH tests, pays insurance premiums and buys feed concentrates with investment from investors.

4.2. Creative industry strategy to improve livestock supply chain
Subandi et al. [1] stated that in the analysis of the Livestock Processing Industry Tree, the main livestock products in the world are produced from two groups of livestock, namely Ruminants and Poultry. The industrial tree built from these two groups of animals has been able to represent the livestock industry in general, where its derivative products include food, beverages, clothing, handicrafts, functional food, and other products. Figure 3 shows a large ruminant livestock industry tree, namely cattle. The upstream livestock industry is a slaughterhouse, while the upstream dairy industry is pasteurized. However, in practice, many upstream industries are integrated with their processing industries. The main commercial industrial products of large ruminant traded cattle are meat, milk and leather.
The world population is increasing, and production of livestock products should grow 60-70% over the next few years. However, countries with more relevant livestock sectors have not yet developed their innovation potential expressively. In the transition to the digitization of livestock, the workforce must be characterized by high enough mobility, flexibility and digital competence, which are creative professional competencies. Information has an important impact on the distribution, exchange and consumption of goods, as well as the emergence of partnerships and relationships among participants in economic relations [1]. The value of livestock can be increased by the integration of natural resources with innovative technologies that allow new products of high value and new markets to be sought and linkages between farmers and the processing, distribution and service industries. In order to increase the added value of livestock products, it is necessary to build a stable distribution base to provide products to consumers and create more jobs in the connection process between industries. Intelligent livestock integrated with advanced information and communication, biotechnology, environmental technology, and nanotechnology is turning into an integrated industry of high added value, because these technologies are important elements in the development of creative industries that contribute to precise production, efficient distribution, and management. fair. The integration of livestock with information and communication technology is very important to realize the creative economy as an alternative to overcome the problem of labor shortages related to aging, changing climatic conditions, more complex distribution structures, and rapidly changing consumer tastes [14].

4.3. Contribution of SMEs to improving livestock supply chain
According to [15], production process problems have an impact on the small turnover obtained. From the aspect of production and human resources, small-turned-business (UKM) tends to have more problems than large-turned-business (UB). For example, small-turned businesses do not have research
and development, business plans and business evaluations. Meanwhile, for large-scale businesses, the problem is only in the acquisition of raw materials and problems in manpower management. This is because the volume of production owned by large-turned businesses tends to be more so that it requires a larger quantity of production factors. Such conditions indicate the difficulty of SMEs to perform efficiency so that their businesses have low resistance. The scale of production itself, in essence, reflects the level of business efficiency. This means that the larger the business scale of an industry, the higher the level of business efficiency. SMEs need to synergize with each other to implement creative economy strategies and creative industries to encourage increased livestock supply chains in Indonesia.

The government can take part in encouraging livestock SMEs by implementing strategies in several ways, including: conducting massive skill development training for SMEs; conduct education related to the application of financing in microfinance institutions in cooperation with regional financial institutions; expand SME cooperation links by organizing mass SME exhibitions; conduct the formation of a livestock SME cluster by monitoring the development of the SME business; with the skills of SME players who are still minimal, the government can develop a website that functions to market all SME products in Indonesia.

4.4. SWOT analysis to analyze Indonesia’s livestock supply chain

Table 1. SWOT analysis strategy for improving Indonesia’s livestock supply chain

| SWOT Analysis | Strengths | Weaknesses |
|---------------|-----------|------------|
| Strengths     | 1. The experience of the breeder is quite good | 1. The scale of cattle farming is still low |
|               | 2. The breeder adequate education | 2. Labor is still limited |
|               | 3. Availability of land for livestock | 3. Livestock ownership is still low |
|               | 4. The location of the farm business is easy to reach | 4. Land use and production capacity are not optimal |
|               | 5. Abundant availability of livestock products | 5. Unstable price increase |

| Opportunities | Strategy (S-O) | Strategy (W-O) |
|---------------|---------------|---------------|
| 1. Increasing demand for beef | 1. Increasing the number of livestock in Indonesia | 1. Increase business scale by utilizing third party services |
| 2. Self-sufficiency program | 2. Maintain good relationship with third parties | 2. Farming community system training |
| 3. Use/utilization of technology | 3. Maximizing self-sufficiency program | |

| Threats        | Strategy (S-T) | Strategy (W-T) |
|----------------|---------------|---------------|
| 1. Feed price fluctuation | 1. Provide a new feed place in the warehouse | 1. Processing agricultural waste into highly nutritious animal feed |
| 2. Land use change | 2. Changing the treatment system from a traditional model to a modern one | 2. Maximizing the remaining land to be more productive |
| 3. No partnership effort | | |
| 4. Traditional care patterns | | |

Source: Mizan et al. [16]

5. Conclusion
Low production capacity coupled with traditional farming methods cause almost all major livestock commodities in Indonesia to cover their deficit through imports. Livestock supply chain strategies such as the application of the creative economy and creative industries are needed to overcome the gap in dependence on imported raw materials, the challenge facing Indonesia is the lack of technology & knowledge. Currently, the creative economy and creative industries are still relatively at the SMEs level. Based on the results of a literature study, it shows that the creative economy and creative industries can increase the supply of livestock in Indonesia. The use of the i-Ternak platform has proven to make it easier for farmers to improve the livestock supply chain. It is clear that the existing cattle industry supply
chain system in Indonesia needs to be strengthened to support the development of cattle production and population in the future.

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