Final Report

VALUE CHAIN ANALYSIS

(cattle, maize, coffee, chinese cabbage, and cashew nut)

Damianus Ador, Maria Bano, I Wayan Nampa, I Wayan Mudita, Sri Widinugraheni, Maria Lobo and Yunita Remy Bani Bili

LMSINDO *Project*

Link and Match SMK in Indonesia

NUSA CENDANA UNIVERSITY
NOVEMBER 2021

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Colaboration Project Between Nusa Cendana University, Polbangtan Bogor and Mastrict School Of Management

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EXECUTIVE SUMMARY

In East Nusa Tenggara (NTT-Nusa Tenggara Timur), the hardest case on creating value of agricultural commodities are the low productivity and the minimal development of end-product in industrial sector. The fact that productivity on the agricultural sector reaches only 30% of the potentials, and the low creativity in value adding, which dominated mostly by small scale home industry worsen the situations.

Kumar and Rajeev (2016) revealed value chain concept is originated from supply chain but it elucidates the value that is created at each stage of the chain which has vital role to satisfying consumers. In line with the Kumar and Rajev, Zamora (2016) define of value chain analysis is an effective way to examine the interaction among different players in a given industry. Although all business firms are part of the value-creating network, some firms have greater influence than others. The questions is, who's creating the value and receiving benefits?

In five commodities that is reported in these studies, *i.e.* value chain analysis of cashew, coffee, cattle, Chinese cabbage and maize, those above cases are elaborated. In cashew, for example as is reported by Listyati dan Sudjarmoko (2011), stated that as Indonesian cashew is exported in logs, cashew has lost its value added potentials to 1.8 – 2.9 trillions rupiahs per year. Our study is emphasizing on that loss as well, in which the value of cashew can't be improved since there is no development of processing industries in addition to the limited availability of the big processing companies. In cashew chain, today the industry line is dominated by small scale home industry only. Of the cashew total production yearly, only 5% of cashew in NTT are being proceed before selling to the market. Similar situations happen to coffee commodity in which, based on the chain structure, the primary chain which is the farmer, can only be rewarded as 1% of the values as to the total value added to the coffee industry. In contrast, the secondary and tertiary chain level, which are the retailer shop or modern café, gained the values up to 97% out of the total existing 100% values. This gap of unfairness is worsen in the exporting line, to where most of the profit is obtained by the middle traders, exporters and the processors. The oligopsony practices has worsen this situation, and even it tended to end to monopsony practices at the level of inter-island traders and exporters. There are very limited players in NTT of those commodities, We reporting one in Timor, one in Sumba and other two players are in Flores to where all the exporters are not specializing in the agricultural commodities. These creating more problems, where less competition on the market is happened and, there's no

good handling practices on exporting agricultural commodities, for example they traded of mix product, base on availability of un- and half- processed product.

There is no different situation in cattle value chain in NTT. Although NTT province takes the 11th ranks in Indonesians' cattle populations, but more than 90% of those commodity is marketed outside the region as living cattle, which makes the differences on marketing conditions of the commercial product. Cattles in NTT are being sold in fulfilling the demand of local and domestic market, such as in Jakarta, Banjarmasin and Balikpapan, three of the highest province demanding of cow-meat. Other traditional crop commodities such as maize and cabbage don't have that exporting values as the cattle, since only about 5% are marketed inter-island in the province. This however, emphasizing that if there is further processing to the agricultural commodities, the values can be improved. More collaborative works are needed between all the stakeholders in the chains, and therefore improvement in education and skills on agricultural sector are urgently required. The more skilled people, the more values can be created to the agricultural products, and this will lead to the development of agriculture-based creative economy eventually.

Based on the above mentioned description, the development of curriculum in the agricultural sector should be empowered. Human resources on the agricultural sector should be aware of the technology-based production on farm by practicing GAP (Good Agricultural Practicing), grading and standardization, distribution, digital logistic and marketing, collaborative work and entrepreneurial mindset should also be elevated. Human resource development and capacity building should be supported to the agricultural-based economic transformation, for the ultimate goals as high income creative economic productivity, and best human capacity and character buildings including 6Cs (Creativity, Critical thinking, Computational thinking, Communication, Collaboration, and Compassion). To conclude, there are still more work to do to improve the human resource on their knowledge and skill and, to gain access to the financial resources for better improvement of the agricultural product and eventually the farmers' prosperity and well-being.

Sperately, based on the survey that has been done in Timor and Sumba, there are some points of conclusion as follows of five commodities on Agricultural product i.e. Maize, Cattle, Cashew, Chinese Cabbage, and Coffee is.

1. NTT is one, out of ten, of maize production center in Indonesia. In this region,

maize is grown mainly (90%) in rainfed and dryland areas. The highest production areas of maize in NTT are located in Timor Island with Timor Tengah Selatan district is the highest (22%), followed by Kupang District (14 %), Malaka District (10%) and Belu District (8%). While Sumba Timur and Sumba Barat Daya are center of maize production in Sumba island. The average maize productivity in NTT is about 2.6 ton per Ha with the productivity of each district follows the same pattern as for the harvested area.

2. Maize farming in NTT, mainly purposed for daily consumption with only 30 % of total production for cash. Even though it was already market orientation, the farming remained using simple technology with minimum advance farming input.
3. Maize is available in town, village and sub-district markets in NTT. Generally, farmers sell maize at traditional weekly markets in sub-district center. During harvesting time in April, may and June, maize is available in all types of markets with lower price than no harvesting seasons. There are two kinds of maize marketed and most probably consumed in Timor based on kernel collors i.e. yellow and white maize. Yellow maize is more preferred than white maize as the price of white maize is higher than that of yellow one.
4. Market participants in NTT are input suppliers, producers (farmers), collectors, retailers and inter-island traders. Collectors or inter-island traders in Timor do not receive maize from Flores, Alor or Sumba islands, due to high transportation costs. However, some good quality of maize from Java and Makasar enter Timor and Sumba markets, through inter-island traders with closely to the same price with local maize (Rp. 3200 per kg).
5. Most of local farmers (78%) sold their crops to collector, 12% to local consumer and other 10% to local retailer. Only 10% maize from farmer sold to inter sub-district or district or island markets through collector. And most of the collector (90%) sold the maize to local trader (retailers) in sub-district markets or to city markets (Kupang in Timor and Waingapu in Sumba island).
6. The most efficient channel in marketing of maize is channel III where farmers or farmer groups sell directly maize in the market to consumers. This channel has higher return to cost ratio and bigger profit than others.

7. The highest value added from maize in NTT is gained by traders that those dealing with end markets and based on proceesed maize products. While lower value gained by farmers are related to unprocessed products. Thus, the more activity and treatment put in maize produce, the more value added gained by value chain actors.
8. Maize value chain in NTT faced multifaced constraints, lies from input supply until end users, including supporting services, policy/regulation and famer institutions. All these constriants are needed a design of value chain development strategies/methods and providers, to foster growth and competitiveness of maize value chain in near future in NTT.
9. NTT is the province with the 11th highest cattle population in Indonesia.
10. The districts in West Timor are the areas with the highest cattle population, namely Kupang Regency, South Central Timor Regency, North Central Timor Regency. In addition, East Sumba district is also one of the districts with a high cattle population compared to other areas.
11. Cattle's marketing was highly dependent on village-level collectors. Village-level collectors play a role in marketing, both facilitating the trade of calves and adult cattle for inter-island trade and domestic markets. On the production input side, the calves marketing chain goes through two market chains, namely breeder-vilages collectors sub district collectors-retailer-consumers (farmers), and the second channel is breeder-vilages collectors-retailer-consumer (farmers). While the marketing channel for adult cattle (beef cattle), Farmers use two channels, namely selling to village collectors and also sub-district collectors. as for the marketing channels in the downstream sector, namely channel 1 farmers-collector of village level-collectors of sub-district level-inter island trades, marketing channel 2, farmers-collector of village level-inter island trades, and marketing channel 3 farmers-collectors of sub-district level-inter island trades.
12. Creating of added value is carried out by processing in the form of beef marketing and processing with processed products in the form of shredded and Se'i. In addition, added value by product is also created such as cowhide and bone. One of potential development product is developing meet ball. Until

conducting of the research, trade in of meet ball to Kupang in year 2020 (January to November) is 22,252 Kg. This is a potential market for beef meatball development in Kupang.

13. The highest value added from cattle in NTT is gained by traders that those dealing with end markets. While lower value gained by farmers. Thus, the more activity and treatment put in cattle produce, the more value added gained by value chain actors.
14. Cattle value chain in NTT faced multifaced constraints, lies from input supply until end users, including supporting services, policy/regulation and famer institutions. All these constriants are needed a design of value chain development strategies/methods and providers, to foster growth and competitiveness of cattle value chain in NTT.
15. In Cashew nut, the main finding is the low added value created from the potential added value that can be created. Cashew nuts production results are traded in the form of row material to inter-island trade. The potential for added value lost due to the absence of a processing industry reaches 94%. Therefore, building a processing industry climate is a strategic issue in agricultural development through cashews. In line with this, aspects of capital and marketing of processed products are obstacles faced by farmers.
16. Result showed that there is still huge potency and capacity of developing value adding to the commodity through improving value chain performances in NTT. It is shown that most of the cashew are still harvested in bulk, and that the transaction is done directly to the farmer who owned the cashew plantation by the second trader. The second trader is then selling the bulk to the inter-island trader, also in the form of bulk fresh product, mostly to Surabaya.
17. The limited financial access that the farmers had and the lack of skill to improve the products' value contributes to obstacle. However, some small home industry has been raised in the communities, to be able to improve the product value of cashew nut. To conclude, there are still more work to do to improve the human resource on their knowledge and skill and, to gain access to the financial resources for better improvement of the product and eventually the farmers' prosperity and well-being.

18. Domestic production of chinese cabbage has not been able to meet consumer needs throughout the year. There is a supply vacancy in certain months, so it must be filled from outside the island, such as the island of Lombok for the West Sumba and from Surabaya for the market in Kupang City, especially the modern market.
19. This study found three marketing channels. In the marketing process, marketing actors have not implemented good handling practices in the transportation, storage, or display in the market. Therefore, losing value due to damage is still very high in the marketing process. The creation of added value can be done on a farm, namely by producing gradually to meet the market throughout the year. The creation of added value in post-harvest is done by storing, packaging, transporting, and displaying with Good Handling Practices (GHP). The highest price can be obtained when the product is still fresh. Therefore, the increase in the value chain is done by keeping the product fresh for longer until it reaches the consumer.
20. Study of Chinese Cabbage concludes that farmers need to improve their productions from sessional productions to year-round productions. The supply of products throughout the year can increase the value of farmers' products because market demand is relatively stable throughout the year. The bargaining position of farmers in the marketing process is still low, which is reflected in the value of the farmer's share. In the marketing process, increasing added value can be pursued by implementing good product handling practices from harvesting, packing, transportation to display. The product's added value will be optimal when the consumer receives the product in a fresh state.
21. Coffee was cultivated in East Nusa Tenggara by smallholder farmers with less than 1 ha land use, with dryland characteristics and on landscape of slope is greater than 25%. Coffee grew well in some dryland areas in Flores, Timor and Sumba. Flores is the majority of plantations area in ENT. Economically, coffee farming in ENT procuce low productivity, and then, low income for farmers. Gross income at farm level is Rp. 25,937,550.0 per hectare. It is just 38% of its potential. The highest value added of coffee is gained by traders those dealing with end markets and based on proceesed coffee products. While lower value

gained by farmers are related to unprocessed products. Thus, the more activity and treatment put in coffee produce, the more value added gained by value chain actors. ENT coffee already have good quality image with its advantage, improvement on its productivity, cleanliness and marketing efficiency in value chain could improve farmer's net income.

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