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SEAWEED'S GLOBAL VALUE CHAIN AND LOCAL ECONOMIC EMPOWERMENT

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Abstract: The research analyzes the Seaweed's Global Value Chain in West Nusa Tenggara since it is treated as the main export commodity of the province. The research focused on first, the governance or institutional setting of seaweed production, the governance type of seaweed's trade plot which links the farmers, collective trader, and main trader and at last the global buyer. The research used descriptive qualitative approach and located in Central Lombok, West Nusa Tenggara. Data sources were gathered by observation in the field and in-depth interview with respondents. The research also used literature data to enrich and broaden the perspective. Miles and Huberman models were used as analysis technique during the field research. The model itself consisted of data reduction activity, data display and conclusion, and data drawing or data verification. The result of this research shows that the institutional setting of seaweed production has not been well managed yet, which is indicated by the overlapping of structure, function, and duties of several bureaucracy institutions. Second, the local competitiveness in seaweed trade is still weak. Third, the upgrading capacity to process and diversify the commodity remains low because the industrialization is merely reckoned on small-medium size industries. Fourth, government efforts in enhancing the upgrading capacity frequently are limited at the technique aspects. It means the institutional setting to enforce the synergy between actors are considered poor.

Introduction

West Nusa Tenggara is one of the potential seaweed production centers. NTB is set to become a minapolitan area of national seaweed cultivation in the national seaweed road map launched by the Ministry of Marine Affairs and Fisheries and the Coordinating Ministry of Economic Affairs in 2016. The urgency of either establishment, determination, or dissemination of seaweed production and cultivation centers road map is associated with the urgency of increasing national seaweed production to encourage global trade of Indonesia's seaweed.

Indonesia is a major both producer and exporter of world seaweed, which in 2010 reached 61 percent of the world's share market in the seaweed sector with total production reaching more than 3 million tons (Valderrama, Cai, Hishamunda, & Ridler, 2017).

In 2014, according to temporary data from the Ministry of Marine Affairs and Fisheries (KKP) (DJPB Direktorat Jendral Perikanan Budidaya, 2017), Indonesia's seaweed production reached 10.2 million tons. The distribution of Indonesia's seaweed production is started from Central Sulawesi, South Sulawesi, East Nusa Tenggara, East Java, and West Nusa Tenggara Provinces. In 2015, (NTT Produsen Rumput Laut Terbesar RI, Paling Banyak Diekspor ke China, 2017) East Nusa Tenggara became the largest producer of Indonesia's seaweed, which contributed almost 60% of the total national seaweed production. East Nusa Tenggara shifted the position of Central Sulawesi to become the largest producer of seaweed in 2010. Whereas, the main export market of Indonesia's seaweed is in China.

However, there are concerns about Indonesia's global trade position in the seaweed sector. The trend of global seaweed trade shows a positive trend. According to FAO (Richards & Rajadurai, 2017) quoted from official sources, for example, the demand for seaweed has increased by around 10 percent annually, and Indonesia's seaweed production is feared unable to fulfill the world's demand. Although statistically, the level of productivity of Indonesia's seaweed rises, the number of increases is considered not quite significant. In 2014, according to temporary data from the Ministry of Marine Affairs and Fisheries (KKP) (DJPB Direktorat Jendral Perikanan Budidaya, 2017) Indonesia's seaweed production reached 10.2 million wet tons, although in 2015 only reached around 10.3 million wet tons. Then, in 2016, the total production of Indonesia's seaweed reached around 11 million wet tons.

Not only issue about productivity levels, but also the economic spillover of seaweed commodities is also still low. Although this commodity is considered able to increase the economy of coastal communities, the national scale distribution is not good enough because the producers for export purposes are dominated by only a few regions. The main exporters of Indonesia are located in Java and Sulawesi regions, namely East Java, Central Java, and Central Sulawesi. Although in 2015, East Nusa Tenggara became the largest producer of Indonesia's seaweed, but that position is not yet succeeded in shifting the position of the main exporter regions.

The same thing happened in West Nusa Tenggara, which has been considered by the KKP as one of the minapolitan locations or national seaweed production centers. The minapolitan central area of NTB seaweed was built since 2010 spread from Lombok Island to Sumbawa Island. In Lombok Island, minapolitan areas are Pengantap Village, West Lombok Regency with a potential of 600 hectares and Gerupuk Bay, Central Lombok Regency with a potential of around 200 hectares. Whereas, in East Lombok Regency, the center of minapolitan are consisted by Ekas Bay with a potential of 400 hectares, Sereweh Bay with a potential of 800 hectares, and Awang Bay with a potential of 400 hectares. In Sumbawa Island, it spreads in Sumbawa Besar, Bima and Dompu Regencies.

Basically, NTB's seaweed production showed a fairly positive performance, as seen from increasing production number from year to year. For example, production in 2014 reached 770.374 tons, increasing to 1.080 tons in 2016 which exceeded the target of around 850 tons. Although, that amount is considered not enough or limited to fulfill the

export market opportunities. At present, NTB does export seaweed to major countries such as China and starts exploring other country markets such as Vietnam and Africa.

Even though it has considerable potential, seaweed is a quite fragile sector. Although seaweed cultivation is considered easy and inexpensive, seaweed farming is also considered to have a quite high vulnerability aspect both due to natural factors and market situations. First, from natural factors, for example the vulnerability comes from the threat of organic organisms in the waters, such as grass-eating fish (herbivorous fish) which are predators of seaweed, viruses, or other diseases. The climate and season are also one of the causes of the fluctuations in seaweed production. In Indonesia, the peak rainy season or monsoon is a critical phase of seaweed cultivation. As the result, seaweed is a seasonal commodity where the harvest is in a certain period. This seasonal character also causes fluctuations in seaweed prices.

Second, seaweed is a fairly competitive commodity. In preliminary data, it was stated that Indonesia was in the main position as the world's main exporter. From the level of volume, Indonesia can be said to be at the top position for supplying the needs of the world's seaweed, but in terms of export value is considered far behind. This is because the selling price of Indonesia's seaweed is still very low. It is also because the quality of Indonesia's seaweed is not good enough. The same thing happened in NTB where low seaweed prices made farmers not too enthusiastic for cultivating of seaweed. The cause of low selling prices is not only caused by agricultural processes, weather or climate, and post-harvest processes, but also NTB and Indonesia still rely on the sale of raw seaweed.

Third, the next threat comes from the world trade regime. Seaweed has been used as organic and environmentally friendly food. However, massive and expansive seaweed cultivation is now considered to trigger damage and pollution of the aquatic environment. The US FDA, for example, in 2016 delisted seaweed as organic material. This is certainly a precedent for the seaweed market. Besides, the world seaweed organization agreed on the existence of a rule regarding the seaweed standards, either as raw material or semi-processed products.

Fourth, the global economic situation is also quite volatile. The weakening of China's economy as the main market for Indonesia's seaweed exports, especially NTB, has caused a declining in demand levels which ultimately caused a sluggishness of seaweed cultivation sector in Indonesia. The dependence of seaweed commodities on the export market has caused this sector to be very sensitive to global changes which has implications for the structure of demand or the world market. To anticipate that, the government has begun to look at seaweed absorption in the domestic market.

The government then plans to abolish raw seaweed export quota by slowly reducing the export quota. According to the Indonesian Seaweed Association and other stakeholders in the seaweed sector, that policy is considered inappropriate because it will harm farmers who have relied on the absorption of the export market for their seaweed production. The government argues that it is to support the national seaweed industry and to encourage the export of processed seaweed or production. However, the problem is the

absorption of the domestic market for seaweed which is still very minimal and has not been able to replace the export market. If this case is not anticipated, it will cause over-supply and a decreasing of seaweed prices, which of course will cause sluggishness in this sector.

Based on those descriptions, a revamping the seaweed industry requires an appropriate strategy. In the opinion of researchers, closing quota exports is not appropriate if it is not accompanied by an increase in the seaweed processing industry. The low price of seaweed in the export market, especially NTB's seaweed can be caused by several things, such as the quality of seaweed or even the process of production chain governance which cause unbalance in the bargaining power of a group towards other groups. Those problems can cause low competitiveness of superior products of NTB. Therefore, this paper tries to analyze NTB's seaweed commodities using the GVC method.

Research Method

Simply, the GVC is understood as fragmentation of the production process through international supply chains. The urgency of the study of global value chains or the GVC was born from the transformation of global trade due to globalization (Gereffi, Global Value Chains in a post-Washington Consensus World, 2014). In the era of globalization, the market structure is very determined by the free flow of investment. Because of globalization, international companies have begun to abandon the fordism industrial production model which requires upstream-downstream coordination in one company. This production model is now being abandoned because it is considered inefficient and relatively expensive. While, the production in the post-fordism industry mode creates new dynamics in international trade. Globalization has made international companies to choose outsourcing as strategy toward the parts or several stages of their production in several countries. That problem occurred due to the decreasing in transportation and communication costs which also resulted in increasingly low coordination costs. This also resulted in the strengthening of regional and global production network formations. In this new formation, international trade is dominated by intermediate trade and upgraded goods which are seen as important components in the export industry's production.

The formation of global trade in the era of globalization which causes increasingly fragmented global production creates opportunities and challenges. Although for GVC analysts, if it overcomes new challenges, the global trade or globalization will be able to provide significant benefits for market players, especially the private sector. The fragmentation of international production can also provide opportunities for developing countries because it does not require competency in all aspects of production, but instead emphasizing the opportunity to concentrate on increasing competence in certain aspects that can be strengthened by their competitive advantage. This has resulted in opportunities to take advantage and compete in the global market which are opened to anyone including small and medium scale industry players (MSMEs). However, even if only to improve competency, there is one aspect or a certain stage of production that still requires a comprehensive carrying capacity, so that these industry players can upgrade

products optimally. Capacity building for upgrading not only requires the utilization of existing resources and opportunities but also must be supported by the right policy formulation. Therefore, GVC studies can help identify weak points, strengths, and industry opportunities. Then, of course, the GVC is considered to contribute to a strategic policy formulation to encourage the expansion of the impact of globalization on the local economy.

This study was conducted within the NTB Provincial Government and SKPD as well as in the NTB seaweed barn area especially in villages that are a commodity base for seaweed. This research was conducted for 8 months from March to November 2017. Data analysis was needed to make the research have the right objectivity weight. The development through data collection techniques and output data was obtained. According to Janice McDrury Collaborative Group Analysis of Data, 1999 in (Moleong L. J., 2008), the stages of qualitative data analysis were as follows: a). Read/study data, mark keywords and ideas in the data; b). Learning these keywords, trying to find themes that come from the data. c). Write down the model found; d). Coding that has been done (Moleong L. J., 2008)
Those data, by the researchers, were then processed according to the focus of the problem of the research topic by looking at the boundaries and choice of descriptions that were suitable especially on the indicators of research and problem formulation. Data analysis in this study seeks to describe the problem as well as a solution in terms of policy and strengthening processes of the intended research objectives.

Result and Discussion

In order to revitalize various economic potentials of the Province of West Nusa Tenggara (NTB), the NTB's provincial government made a breakthrough through excellent programs in order to make NTB province as a province that is able to revitalize agriculture well which is in line with national government programs. The vigorous revitalization conducting by the NTB government is in the agricultural sector and animal husbandry in the broad sense that includes three superior commodities, namely cattle, corn, and seaweed, known as the "PIJAR" program (Badan Pusat Statistik NTB, 2017). This program was conducted with the aims for increasing economic development, food security and reducing rates of unemployment and poverty. The existence of PIJAR program is expected to be able to encourage regional economic development and to reduce poverty.

In the theory of international trade, there is generally a kind of belief or assumption that an increase in a country's exports will improve the economy of a country. Since pre-globalization or even often referred to as globalization in the first phase, trade is the country's strategy to strengthen the economy. Therefore, countries are competing to extract their resources to strengthen their exports. However, in subsequent developments in the study of international political economy, the quantity of export in a country is not a guarantee to get the maximum profit of a country. Mercantilist economists such as Alexander Hamilton and the Friedrich List state that the best export in a country is the export of industrial goods rather than agriculture or raw materials

which have low terms of trade. The mercantilist view essentially stated that if a country is unable to industrialize, autarchic and isolationist policies are rational choices.

The study of globalization can actually be said to have no agreement on the impact of globalization on a country. The impact of globalization is often associated with the intensity or the depth of globalization of a country or how active a country is in the process of globalization. In addition, choices in globalization are also very dependent on the perspectives used. However, in general, the study of globalization, especially from a moderate perspective, stated that globalization does not always have a negative impact. Excess globalization in a country is not only influenced by the depth of globalization process but also from the aspect of state capacity.

The GVC perspective starts from the belief that globalization is not apolitical or neutral. The dominant position in a global market is related to the inherent power hierarchy between the actors of globalization. Market relations that connect between one actor or one firm with another firm is not merely a relation between producers-consumers or cooperation between producers and producers, but often the relationship between actors is intertwined in exploitative situations, for example between large firms and small firms that supply industrial needs of large global firms. This asymmetrical relationship of power can be caused by several things such as capacity hierarchy, differences in the ability to network or as mentioned, and differences in capital capacity. The asymmetrical relationship also causes weaker groups to be dependent on other actors.

In the view of GVC, according to (Kaplinsky & Morris, 2017) the issue of globalization is then not only about the extent of an actor is involved in it but also about the extent is sustainable income growth when actors are integrated into the global economy. Although globalization is considered bringing many benefits, globalization is also accompanied by its dark side. The extent of poverty and inequality is a fact of globalization that cannot be ignored. Strengthening the responsiveness to minimize the effects of globalization variables on actors is absolutely needed. GVC as an analytical study shows its usefulness in this aspect which seeks to answer the issues regarding the aspects of injustice and actor inequality through strengthening actor capabilities. GVC is an analytical tool to explain the advantages and disadvantages, and how the benefit distribution is integrated into the global economy with the choice of a sector. Through GVC, the question of globalization is no longer about whether globalization is good or bad for the perpetrators especially for vulnerable groups, but the GVC helps to understand the dynamics of globalization itself. Then, it can identify the right policies as an effective response to globalization itself.

Competitiveness Context

The competitiveness context in this study emphasizes in efforts or ways to develop comparative advantages regarding productivity, efficiency, and profitability in national and international contexts. In the context of local government, for example, Law No. 32 of 2004 on regional autonomy, it requires the government to build up regional productive capacity. One form of increasing the capacity of the region is to realize the competitiveness of regional products on the international market. Then, we can explain

that competitiveness in the context of the Global Value Chain (GVC) study can be explained from several things. First; the capacity and capability of production, second; innovation and third; governance which is defined as a form of priority agenda.

First, concerning capacity and capability in production. NTB as an area with great potential in seaweed production has been not optimal yet in seaweed production. According to BPS Report in 2014 showed that NTB's production capacity is still below Sulawesi, Maluku, and NTT as national seaweed commodity suppliers. Even Sulawesi has reached 63 percent of the total national seaweed. Certainly, one of the causes of the problem is the not yet optimal efforts related stakeholders to cultivate seaweed.

Production capacity that is still relatively low is due to the utilization of potential area owned by the producer is still 30 percent, even though the trend of production increases every year. The production capacity is also still based on the absorption of the domestic market and has a vulnerability to the international market. Based on BPS NTB Province's data on the distribution of seaweed in 2013 (Badan Pusat Statistik NTB, 2017), around 91.52 percent of seaweed farming businesses sell their yields to the traders. Traders here have a role to sell seaweed out of the region or abroad in the form of raw seaweed. Only around 1.58 percent of seaweed farming households sell to the exporters and 3.90 percent to the cooperatives. In addition, around 0.18 percent of seaweed farmers sell their products to the processing industry. From those data, it has been illustrated that NTB still relies on raw material because of only 0.18 percent for sale to the seaweed processing industry. If the absorption of seaweed sales is higher in the processing industry then the added value will be greater compared to the selling in primary form.

For NTB seaweed production according to BPS data (Badan Pusat Statistik NTB, 2017) which is continuing data from the NTB Marine Affairs and Fisheries Agency said that NTB's marine aquaculture production in 2013 was 817.693,83 tons including seaweed production as big as 756.700,23 tons (92.5 percent). This manufacture is produced from a number of seaweed farming centers such as West Lombok, Gerupuk Central Lombok, Serewe East Lombok, Kefasir West Sumbawa, Dompu and Bima District. From the amount of production which is quite big per year, it makes NTB included one of the top 5 regions as the biggest of seaweed producers in Indonesia. However, seaweed production cannot be utilized to the maximum because of the total area of potential new cultivation which is utilized only 30 percent. The government's role is extremely vital for providing facilities and easiness to expand the potential area of seaweed culture, considering that only 30 percent of the area has been cultivated. If the area of seaweed cultivation is more expanded, it will certainly have an impact on the amount of production.

According to field data from the results of interviews with the head of NTB Marine and Fisheries Agency (DKP), it is explained the amount of NTB seaweed production during the last three years, namely in 2015, 2016 had increased. The total production in 2015 was 337.462 tons and the total production for 2016 was 1.026.580,42 tons, produced by all districts in NTB. From those data, seeing the development of production that increase each year, it should be able to be utilized as big as possible by various parties involved in

the development of NTB's seaweed. However, the production results are still not fully maximized due to various obstacles in the field.

Second, it can be seen that the competitiveness of NTB's seaweed still constrained by innovation. Innovation related to this problem can be seen from 2 things. First thing is the lack of innovation in processing seaweed and still relies on strengthening MSMEs (Micro, Small and Medium Enterprises) as the absorption of the local market. NTB's seaweed farmers prefer to sell wet seaweed at a low price. This shows that as one of the NTB commodities, seaweed commodities do not have a driving industry among them, a competitive production model, the spread of extensive innovations, comparative advantages, as well as modern, medium and large-scale industries. Second, mastery and application of technology in the process of cultivation and post-harvest/processing. Technology is still a big problem in NTB seaweed management. Fluctuations in production levels and the lack of a driving industry can be a reference to the low-application of technology in seaweed management in NTB. The processing production model by MSMEs is also still hampered by the capacity and capability of machine technology. Currently, MSMEs adhere to labor-intensive models and rely little on machines/technology so that vulnerability to production numbers depends on certain conditions such as weather. This shows that the processing industry in NTB has not been well developed.

The fulcrum of post-harvest absorption for the domestic region, NTB's seaweed only relies on MSMEs (Micro, Small and Medium Enterprises) explained by the head of the Agro-Industry, Industry Agency of NTB that the reality of MSMEs growth rates has increased but has not been in large production capacities yet. The MSMEs sector only relies on markets that are multiplayer effects from the NTB tourism industry. Processed sales only rely on souvenir outlets that has not been large yet in quantity.

Third, in essence, seaweed as a superior commodity has been planned in the PIJAR program issued in 2009. This is in line with the principle of competitiveness to prioritize regional production capacity in the fields of cattle, corn, and seaweed. However, the data in the field show that the PIJAR program in the context of seaweed has not yet reaped to the maximum results. It is seen that there are production inequalities from the 3 leading commodities. Cattle and corn are quite successful but seaweed is still lagging. If it remains as a superior program in the NTB region, the PIJAR program has a problem that is quite important and urgent. The main obstacle of the PIJAR program, especially seaweed commodities, is the lack of structured agendas and seaweed management tools in the PIJAR program. There is no clear structure framework in the NTB government in the emergence of ego-sectorial management the centralized commodity in PIJAR that is only in the management of cattle and corn is the obstacle of that program.

Governance Context

Governance in the GVC study refers to the position of power of actors. Governance is generally understood as a model of the position of the actor or firm in a value chain and the type of governance that can change depending on the upgrading strategy. The focus of governance is the relation of power asymmetry between actors or firms in a value

chain. In simple terms, governance is described through the relationship between firms or inter-firms where one of the actors is the determinant or controller of the value chain in a production process. In the NTB seaweed production chain, there are several identifiable actors, namely bureaucracy, farmers, sellers, collectors and traders up to international buyers. The roles of the actors will be described as follows.

The presence of local institution will be easy in term of monitoring and continuous evaluation. In essence, this view assumes that it is not about the issue of how many institutions, but it is about the aspects of intertwining or connectedness between institutions or in other words aspects of bureaucratic synergy. Synergy efforts can be seen from the existence of planning and supervising the institutions such as Development Planning Agency in Sub-National level (BAPPEDA). BAPPEDA and SKPD have regular meeting schedules for policy synergies. However, it should be noted that this synergy is often bureaucratic where meetings between institutions are related only to routine meetings. However, Department of Commerce or Dinas Perdagangan (Disdag) had communication channels with the industry agency or even with other agency offices. It tends to be responded with different answers and duties so that communication between institutions seemed not needed. This gives the impression that the same work or task is carried out by several other agencies or institutions. This situation at the institutional level may not be a problem, but it can be a problem for service users. For example, there is a kind of confusion over matters such as export, standardization, and other permits. The least desirable thing that can arise in this situation is the existence of distrust of stakeholders who tend to have a negative perspective on the bureaucracy. In addition, several speakers, namely the head of the sector in a particular agency, complained about the imbalance of duties and budgets or the duties of other agencies which were actually the main tasks of that agency. In the end, the part of perspective of large company in Weberan's bureaucracy theory is difficult to create, even though in the study of GVC states that the presence of institutional arrangements can be a key factor in aspects of rent availability to strengthen the capacity of innovation and upgrading a region.

On the other hand, local governments have knowledge circulation devices through the presence of institutions or technical implementers such as seaweed development centers or UPTD. In this aspect, the governments are aware of the importance of knowledge rent to increase upgrading capacity in aspects of seaweed production.

The flow of seaweed trade can be said to be relatively long so that there is a price gap in some actors. Farmers usually sell dried seaweed yields to small collectors or villages and small collectors deposit to large collectors or sub-district collectors. Then, district collectors will sell it to parties processing plant or exporter. At the farmer's level, the price of dried seaweed ranges from 7.000 – 8.000 Rupiah. This price is also very dependent on the quality of seaweed and can even be lower. Farmers often sell seaweed that does not fulfill the standards or qualifications. The qualification or standard of seaweed is determined by large retailers or large traders, namely dried seaweed with a moisture content of less than 35 percent. If seaweed does not fulfill the qualifications, collectors and wholesalers need 3-4 days to get dry seaweed with the desired level of moisture and/or water content. This is the main reason why small collectors buy seaweed at the

farm level at a price that can be said to be low because collectors must do several more steps before seaweed meets the qualifications or exporter's standards (water content and cleanliness). From this flow, the lowest cash flow is seen as a group of farmers because prices are determined by large players and those prices are often fluctuating.

In terms of farmers, seaweed is often sold at low standards depending on price fluctuations. However, farmers often feel that quickly selling low quality-seaweed with low prices will save the cost of the drying process. In addition, because farmers often face capital problems, fast selling of the yields is an effort to repay loans used during the planting period.

Simply seen from the flow of seaweed trade, it can be said that the structure of seaweed trade governance is buyer driven. In the GVC study, it distinguished two forms of governance, namely buyer-driven and producer-driven (Gereffi, A commodity chains framework for analyzing global industries, 1994). The buyer-driven chain is a production relationship where the buyer becomes the lead actor who determines the standards of both product quality standards and production process standards. The buyer also often determines the price of the commodity. On the other hand, parties that are in the lower chain such as producers or suppliers only accept it or try to fulfill the specified qualifications. The relationship between producers and buyers are often arms-length relationships with low-trust chain structures.

The chain of relationships with the above characters is very often short-term and triggers one-party profit-taking behavior and relatively unequal distribution of profits. Arms-length relationships are like simple sellers and buyers. The absence of a price agreement makes buying and selling relations fluctuating and speculative. Buyers usually make a strategy of "buy a lot" to avoid high prices, while the seller also often rushes to sell because prices are considered better.

While, the low-trust chain refers to an understanding of the lack of depth or intensity of the trust level of buyers towards producers. In this situation, if the producer is considered unable to meet the quality, the buyer can terminate the contract as part of the sanction. Such a structure illustrates the weak bargaining position of local seaweed producers. In the ideal context, producer and buyer relations must at least describe a high trust relationship. This high level of trust is formed and based on an awareness of interdependence. If the buyer is worried about the capacity of the producer to fulfill the qualifications or product standards, the buyer will initiate assistance, such as training or technology transfer.

However, relations with high-trust chain characters are difficult to form in the trade chain which is too long, where buyers only communicate with local exporters. Whereas, a chain with a high level of trust requires the formation of a dense network so that communication between farmers, traders, and buyers can be well established. Thus, a very good networking capacity is needed from the producers and buyers. In fact, the capacity to access the market or networking is very difficult to reach even though it is an exporter group.

Upgrading Context

The NTB government has made upgrading efforts to increase the competitiveness of NTB seaweed commodities. Some forms of upgrading carried out by the NTB government have been quite good but still have not been able to improve competitiveness due to constraints on the capability of the regions. The slow upgrading also shows that the role of the government is considered still lacking in realizing seaweed development policies. The seaweed processing policy does not lead to the middle industry sector, and only a small percentage of the production has been successfully upgraded by the NTB government. The small number of seaweed upgrading products that are competitive in the outside of local market indicate the lack-collaboration between the government and the seaweed industry. It indicates uneven market access obtained by each seaweed processor. Some upgrading policies in seaweed management in NTB are policy for conserving processed seaweed products. Previously, processed seaweed products were only based on gelatin, but now processed seaweed products have diverse conservation. Ranging from snacks to drinks, heavily processed food products, even now it is towards non-food processing, such as cosmetics, soap, and others.

The conservation policy is quite successful, as seen in the increase of seaweed processing by MSMEs. However, the obstacle found in the field is the unbalance processing of seaweed with the creation of extensive market access. The present seaweed processing is only based on the local market, depending on the tourism industry. One of the informants from MSMEs actors explained that processed seaweed products are very dependent on the tourist season. If it is in the holiday season, processed seaweed products is crowded. Meanwhile, in the outside of the season, it tends to be sluggish and slack. Moreover, seaweed processing is based solely on strengthening labor-intensive production models which are increasingly burdensome to MSME actors. One of which is still relying on nature to assist the process of producing seaweed.

The economic added value obtained by NTB province is very small and is very dependent on market demand. For this reason, it is necessary to develop seaweed processing industry so that the added value obtained by NTB province is greater because it can be marketed and developed in the form of non-food processed products. The efforts to increase the value of seaweed commodity has been carried out by encouraging food processing businesses because processing seaweed into processed food is a strategic step in increasing added value. However, the amount of seaweed that can be absorbed by processed food houses is small. To increase the added value of the seaweed commodity, the strategy is by developing of seaweed processing business, not only based on processed foods but also developed it into non-food processing.

In connection with it, according to the data by the Marine and Fisheries Agency, on the 1st until May 2nd, 2017, FAO (Food and Agriculture Organization) sent two cultivation experts and processed seaweed industries, namely: Dr. Ir. Maskur Mahmud (Directorate General of KKP Aquaculture) and Dr. Ir. Taryono Kodiran (Lecturer of the Faculty of Fisheries and Marine Sciences of IPB) to survey the potential of seaweed cultivation and the prospect of developing its processed industries for consumption and non-

consumption needs, such as dodol, jelly, tortillas, soap, toothpaste, lotions, pharmaceutical products, and raw material industries such as carragenan flour. The visited locations are Serewe-East Lombok and Gerupuk-Central Lombok which are seaweed farming areas and seaweed processing SMEs such as "Gerupuk Mas" Central Lombok, "Jelly Joy", "Lombok Food" and "UD Sasak Maiq" in West Lombok (Dinas Kelautaan dan Perikanan Provinsi NTB, 2017). This activity was carried out in order to expand the processing of NTB seaweed commodities which can be processed not only into food products but also non-food products.

The policy to expand the segmentation of non-food seaweed processing in NTB has begun to be initiated. Cosmetic products made from seaweed raw materials have been built and developed in the Banyumulek area. As a new opportunity for seaweed cultivation, the marketing goal of non-food products is directed to the tourism sector in NTB Province, which incidentally is in desperate need of cosmetic and health products for tourists who stay in hotels or need beauty care at center treatments (salon and spa) (Dinas Kelautaan dan Perikanan Provinsi NTB, 2017). Products that will produce include soap, body lotion, shampoo, toothpaste, sunblock, scrub, facial wash, and other products.

For the capacity of cosmetics products that will be produced from non-food processing, it is estimated that there are 1 ton/month with carragenan needs as many as 300 kg or equivalent to wet seaweed raw materials as many as 10 tons/bul. With a large number of raw material needs, it is expected that the development of processing non-food products can help the absorption of seaweed production which will then increase the selling price in the market. In addition, it is expected to create marketing certainty and absorb seaweed yields in large quantities to local industrial houses.

Synergy Context

The form of synergy in processing seaweed commodities can be seen from various collaborations between various related parties. The government itself has provided convenience by facilitating seaweed businesses. As seen in the roadmap, as a short, medium, and long-term plan to continue improving sustainable seaweed productivity and to create a superior commodity in NTB Province. In terms of regulation, the production of seaweed commodities has become a major focus in regional government policies which are realized in the PIJAR program.

In order to support and assist the seaweed upgrading program, each relevant regional office continues to synergize, strive to facilitate, and provide various assistance to the community and business subject. The government has provided some assistance such as coaching and various socialization related to seaweed processing, even assisting to procure tools for processing seaweed food both to farmers and production houses. However, frequently, the tools provided are not in accordance with the needs of the production houses. Even, the tools provided are not capable of operating on a sufficiently large scale. The government already has a work program and certain assistance related to facilitation of seaweed processing through related agencies.

The assistance in terms of research for the development of seaweed is also one of the government's focuses so that it has opened the widest possible range of cooperation with relevant parties regarding research. For the business people themselves, seaweed is given convenience and assistance by the local government in its production efforts. Both the community and business people continue to collaborate in increasing the development of seaweed. In addition, the government continues to open the doors of good business for NGO's who are willing to work together with the government to develop NTB seaweed commodities.

The road map for seaweed processing has also been formed, especially the road map for marketing. The government also opens the widest opportunity for investors who are interested in investing in seaweed commodity processing business. Various related institutions have also been synergized to provide various facilities and assistance to seaweed businesses.

The form of synergy in the processing of seaweed in NTB can also be seen from the form of cooperation with political parties. The collaboration was also conducted with the Bandung Institute of Technology (ITB) in order to develop non-food seaweed. This step is very appropriate to develop the value chain of NTB seaweed commodities.

Conclusion

After conducting the research process and analyzing some field data, the researchers can draw conclusions from the discussion in the previous chapter. First, the governance of NTB seaweed commodity has complex problems even now. Some of them are structures that have not been built in seaweed management, an ego-sectorial owned by each department/stakeholder still exists and there is no management flow synergized by the government in terms of seaweed management. Second, the competitiveness of NTB seaweed commodities is at the middle level. This is indicated by the lack-competitiveness of seaweed production at both national and international levels. The failure of innovation in seaweed products is large and massive. The absence of a driving industry is growing in the NTB region. Third, major problems exist in the upgrading policies carried out by the NTB government in seaweed management. Some of them are product conserved that has been successful, but remains segmented on the local market and depend on the tourism industry. Fourth, certifications and standardization are in upgrading policies which are also still in constrained and limited to the budget. Also, there are many products that do not have certification and standardization yet.

The last, synergy intended in seaweed management does not only involve government and business members but also the community. The community component needs to be intensively included, especially the epistemic community, such as researchers, universities, and others. The greater synergy that was built involved full farmers as producers/spearheads of seaweed management. In addition, the synergy that is built certainly involves many sectors, namely the seaweed management sector with sectors

which are able to support processing such as the tourism sector and the financial support sector.

References

Badan Pusat Statistik NTB. (2017). *Analisis Rumah Tangga Komoditas Unggulan Daerah Nusa Tenggara Barat, Hasil Sensus Pertanian 2013.* Retrieved from: http://ntb.bps.go.id/webs/pdf_publikasi/Analisis-Rumah-Tangga-Komoditas-Unggulan-Daerah-Nusa-Tenggara-Barat-Hasil-Sensus-Pertanian-2013.pdf

Brennan, L., & Rakhmatullin, R. (2015). *Examining the role of Global Value Chains in the context of smart specialisation strategies (S3).* Conference EDUCON. https://doi.org/10.1109/picmet.2016.7806552

Dinas Kelautan dan Perikanan Provinsi NTB. (2017). *Kosmetik Dari Rumput Laut.* Retrieved from: https://dislutkan.ntbprov.go.id

DJPB Direktorat Jendral Perikanan Budidaya. (2017). Retrieved from: http://www.djpb.kkp.go.id/arsip/c/221/KOMODITAS-RUMPUT-LAUT-KIAN-STRATEGIS/?category_id=8,%20akses%20Maret,%202017

Gereffi, G. (1994). Capitalism, Development and Global Commodity Chains. *Book Chapter Published in Capitalism and Development.* https://doi.org/10.4324/9780203201961

Gereffi, G. (2014). Global Value Chains in a post-Washington Consensus World. *Review of international political economy*, *21*(1), 9-37. https://doi.org/10.1080/09692290.2012.756414

Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The Governance of Global Value Chains. *Review of International Political Economy*, *12*(1), 78-104. https://doi.org/10.1080/09692290500049805

Kaplinsky, R., & Morris, M. (2017). *A Handbook for Value Chain Research.* Retrieved from: http://www.fao.org/fileadmin/user_upload/fisheries/docs/Value_Chain_Handbool.pdf

Moleong, L. J. (2008). *Metodologi penelitian kualitatif.* Bandung: PT. Remaja Rosdakarya.

NTT Produsen Rumput Laut Terbesar RI, Paling Banyak Diekspor ke China. (2017). Retrieved from: https://finance.detik.com/industri/d-3144702/ntt-produsen-rumput-laut-terbesar-ri-paling-banyak-diekspor-ke-china

Panlibuton, H., & Meyer, M. (2004). *Value Chain Assesment: Indonesia Cocoa.* Washington DC: Accelerated Microenterprise Advancement Project .

Produksi Rumput Laut Melimpah, ARLI Tolak Pembatasan Ekspor. (2017). Retrieved from: https://www.beritasatu.com/industri-perdagangan/349938-produksi-rumput-laut-melimpah-arli-tolak-pembatasan-ekspor.html

Richards, N., & Rajadurai. (2017). *Production, Marketing and Trade Of Seaweeds.* Retrieved from: http://www.fao.org/3/AB728E/AB728E12.htm

Valderrama, D., Cai, J., Hishamunda, N., & Ridler, N. (2017). *Social and economic dimensions of carrageenan seaweed farmin.* Retrieved from: http://www.fao.org/3/a-i3344e.pdf