
PERANCANGAN KEMBALI RANTAI PASOK KOMODITI CABAI DI KECAMATAN LIRUNG KABUPATEN TALAUD*THE SUPPLY CHAIN REDESIGN OF CHILI COMMODITY IN LIRUNG DISTRICT TALAUD REGENCY*

By:

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Abstrak: Cabai merupakan komoditi yang penting dan di idolakan oleh orang Indonesia, hampir setiap makanan di Indonesia di campur dengan cabai, tetapi cabai memiliki harga yang sangat mahal dikarenakan rantai pasok yang tidak baik. Penelitian ini dilaksanakan di kecamatan Lirung Kabupaten Kepulauan Talaud, dengan periode 2 bulan, mulai dari Maret hingga Mei 2017. Penelitian ini merupakan penelitian Kualitatif bersifat deskriptif. Data pokok di dapat melalui mewawancarai aktor dalam sistem rantai pasok dari hulu ke hilir, yang antara lain adalah: Petani, Pengumpul, Bandar, dan Pengencer. Penelitian ini menemukan bahwa rantai pasok dalam komoditi ini wajib untuk di rancang kembali berdasarkan situasi dan kondisi di lapangan dengan mengutamakan skenario Efisiensi waktu, skenario dengan efisiensi biaya, skenario dengan efisiensi biaya oleh pemerintah, dan skenario campuran, dengan menghilangkan aktor pengencer besar dan pengumpul. Aktor dalam rantai pasok wajib untuk saling menjalin hubungan yang baik dan menjaga keberlangsungan transaksi berulang kali dengan metode pembayaran yang profesional dan komunikasi yang baik, dengan tujuan tidak akan tercipta bullwhip effect dalam rantai pasok. Rantai pasok yang direkomendasikan adalah rantai pasok dengan skenario efisiensi biaya oleh pemerintah, di karenakan pemerintah memiliki sumberdaya dan kemampuan untuk ambil bagian dan tugas sebagai pengumpul, agar tercipta keterbukaan dan fleksibilitas dalam menjalin komunikasi dan membagi informasi tentang permintaan pasar dan harga.

Kata kunci: manajemen, logistik, rantai pasok, manajemen rantai pasok, komoditas cabai

Abstract: Chili is an important and favored commodity for Indonesian people, almost every Indonesian food have chili inside it, but the price is really high because of the poor supply chain system. This research conducted in Lirung District in Talaud Regency, with period of two months started from March – May 2017. This research is qualitative research with descriptive study. The primary data is from interviewing the actors involve in supply chain system from upstream into downstream which is: farmer, collector, croupier, big retailer and retailer. the research find that, the supply chain needed to be redesign based on the situation and condition on the field by focusing on Time Efficient scenario, Cost efficient scenario, and Mix scenario, by removing big retailer and Croupier actors. The actors should maintain a good relationship and conducting continues transaction of the material flow with a professional payment system and proper communication, so there will be no bullwhip effect on the supply chain. The supply chain that recommended is based on Cost efficient and the government is needed to take a part in the supply chain as the croupier because government has the resources and ability to conduct that task. So there will be a transparency and flexibility in sharing information of market demand and price.

Keywords: management, supply chain, logistic, supply chain management, chili commodity.

INTRODUCTION**Research Background**

Indonesia is 4th country with the biggest number of total population. The population also creating high demand that cause high price of food commodity, sometimes its creating the scarcity on the market. Chili is an important and favored commodity of Indonesian people, even some people cannot eat without it, and almost every Indonesian food have chili inside it. In north Sulawesi chili is becoming the most important commodity even though has become the basic needs of people, chili commodity is the is an expensive commodity even surpass the basic needs such as rice, chicken meat, and egg.

Chili price is becoming an important sector that Indonesian government should be focus on, because chili price can be lead an inflation of a country. There is a high demand of chili but the production inside province sometimes is not enough, in order to fulfil the demand sometimes it needed to add the stock from outside the province.

Indonesia is a country with more than 17.000 island and this provide a major challenge in distributing. North Sulawesi also have the same problem, north Sulawesi is s province with 15city and regency it divides into 4 major cities and 8 regencies in one Sulawesi island, and 3 regency separates in 3 group of islands which is Sitaro, Sangihe and Talaud regency where it is in the border between Indonesia and Philippines.

Talaud is a group of islands in north Sulawesi with 83.434 people, there are 2 type of mass transportation that go to Talaud, 1st is airplane, and 2nd is ship which is 3 times a week and was a majority transportation, there is 22 island in Talaud but there is only 1 airport, 6 seaport, and only 2 seaport that routine used which is Melonguane as the government center and Lirung as the trade center,

Talaud is a group of islands in north Sulawesi, Talaud people majority work as farmer, and fisherman but the changes in people mind set and social behaviour that creating social problem changing the traditional farming pattern that produce and faming horticulture such as chili, union, tomato, etc. Becoming passive and caused the decreasing number of horticulture farming area even in some place chili farming area does not exist, these changes makes Talaud regency can no longer fulfil their own demand, and almost all of the basic needs is imported from Manado, the limit in transportation and distance, cause difficulty in distributing that lead into increasing price, especially the price of chili which is really expensive.

Research Objective

1. To figure out the flow of current supply chain system and redesign the new supply chain system of chili commodity in Lirung district on Talaud regency.
2. To figure out the advantage and disadvantage of current supply chain and the new design of supply chain system.

LITERATURE REVIEW**Management**

Management is the organizational process that includes strategic planning, setting objectives, managing resources, deploying the human and financial assets needed to achieve objectives, and measuring results. Management also includes recording and storing facts and information for later use or for others within the organization. Management functions are not limited to managers and supervisors. Every member of the organization has some management and reporting functions as part of their job." (Stuhlman, 2009)

Logistics

Logistics is defined as the planning, organization, and control of all activities in the material flow, from raw material until final consumption and reverse flows of the manufactured product, with the aim of satisfying the customer's and other interest party's needs and wishes, to provide a good customer service, low cost, low tied-up capital and small environmental consequences (Jonsson and Mattsson, 2005).

Logistics is defined as those activities that relate to receiving the right product or service in the right quantity, in the right quality, in the right place, at the right time, delivering to the right customer, and doing this at the right cost (The seven R's) (Shapiro and Heskett, 1985).

Logistics systems encompass operative responsibilities, which include administration, operation and purchase and constructive duties as well as detailed design.

Supply Chain

Supply chain is a set of firms that pass materials forward. Normally, several independent firms are involved in manufacturing a product and placing it in the hands of the end user in a supply chain—raw material and component producers, product assemblers, wholesalers, retailer merchants and transportation companies are all members of a supply chain (La Londe and Masters, 1994).

Another definition notes a supply chain is the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services delivered to the ultimate consumer.

Supply Chain Management

Zee (2005: 66) that define SCM as the incorporation between planning, control, and coordination of all the logistic activities and process with the aim of providing the highest consumer value at less cost without compromising the requirements of the stakeholders within the supply chain.

Define SCM as the coordination of all the activities that include planning and managing supply and demand; warehousing; material sourcing; scheduling the product and/or service; manufacturing; inventory control and distribution; delivery and customer service, with the objective to serve the customers with reliable service of high quality products at less cost.

Zabīdī (2001) adds that the SCM is a modification of the traditional practice of logistics management is adversarial towards coordination and partnership between the parties involved in managing the flow of information and products.

Lee, Whang and Anathan (2008: 46) defines the SCM business from end users through suppliers who provide products, services, information, and even increase the value for customers and employees.

Previous Research

(Sidhu, Kumar, Vatta and Singh, 2010), Supply Chain Analysis of Onion and Cauliflower in Punjab, the profit of agriculture product is promising for farmers but the problem is on the sale pattern there are some actors in the supply chain that takes more profit which create the disadvantages for others. (Soni, 2013) Evaluation of marketing supply chain performance of fresh vegetables in Allahabad district, India. To provide higher net profit to producer and competitive price to consumer it is important to provide better facilities for storage, transportation and marketing of tomato, cabbage and cauliflower. (Saravanan, and Tamil. S. 2016) Supply Chain Management Practices in Organized Retailing: A Study in Trichy Region. There should be proper communication, payment system, and continues flow of the material from producer to retailer.

RESEARCH METHOD

Types of Research

This study uses descriptive analysis on the implementation model of supply chain management in order to identify issues that could potentially lead to product shortages. The study is a descriptive study conducted to determine the value of either one independent variable or more variables without making comparisons or connect with other variables. Where this research will investigate and redesign the supply chain of chili commodity in Lirung district Talaud regency

Place and Time of Research

This research will be conducted in Lirung District on Talaud Regency, the location is choosing on purpose (Purposive) with considering, Lirung district as the representation of Talaud regency, where Lirung district also is the trade center of Talaud regency.

Time of research conducted is on the period of two months started from March – May 2017.

Research Informant

In qualitative research does not use the term population, The sample in qualitative research is not called respondent, but informant, resource person, or participant, friend and teacher in research (Sugiyono, 2013).

Table 1 Research Informant

NAME	Job	Location
Mr. Masri	Retailer	Lirung (Talaud)
Mr. Aex	Big retailer	Manado (Bersihati)
Mr. Eda	Wholesaler	Manado (Bersihati)
Mr. Bambang	Collectors	Tumba
Mr. Burhanudin	Farmers	Tumba

Source: Primary Data 2017

Research Data Instrument

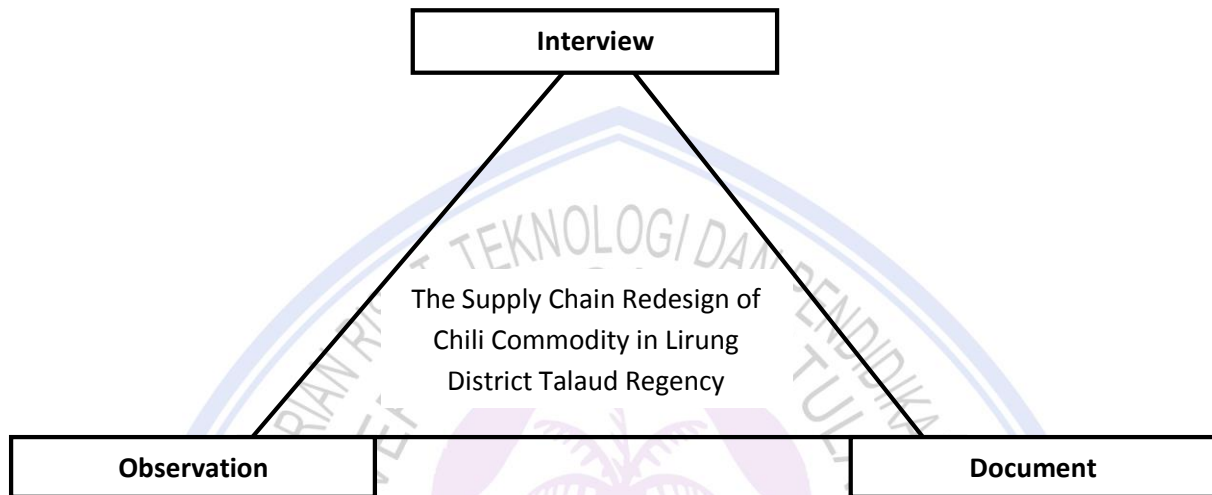


Figure 1 Methodological triangulation

Source: Denzin (1970)

This research will be conducted using methodological triangulation method. According to Denzim (1970) in Bryman, Methodological triangulation is a type of triangulation that in gathering data using more than one method. Further, this research will use within-method triangulation for qualitative research which is including observation, interview and document like in the Figure

Data Analysis Method

1. Data Collection

Data collection is the process of gathering and measuring information on variables of interest, in an Established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes.

2. Data Reduction

Coding the data can consist of interview transcripts, participant observation field notes, journals, Documents, literature, artifacts, photographs, video, websites, e-mail correspondence, and so on.

Categorization the categorization in this research is shown from the informant information that show on the paper.

3. Data Display

The reduced data are displayed in an organized and condensed manner. It also helps to discover patterns and relationship so the Conclusion is eventually facilitated. This research data display is shows from the figure of existing supply chain on the field.

4. Conclusion or Drawing

After doing data reduction and data display, then continue to the process of briefing the conclusions and verification. Based on the data that already been reduced, classified and displayed, further the findings will be description of certain objects

RESULT AND DISCUSSION**Research object Profile**

Talau Islands are the northernmost region of Eastern Indonesia, bordering Davao Region of the Philippines, Indonesian Kepulauan Talaud, also spelled Talaur or Talaut, island group of northern Indonesia, the islands were declared as a regency of North Sulawesi in 2000 stand as Sangihe-Talau region (SATAL) name and stand as a Talau region based on UU NO.8 in 2002, Talau consists of 20 island. Talau's capital is in Melonguane. Talau have small airstrips serviced by Airlines Company every day in a week start from Manado on 10.00 WITA and arrive on 11.00 WITA in Melonguane, and there is also ship's went to Talau with 3 times service a week (Monday, Wednesday, Friday) it start on 16.00 WITA from Manado and arrive on 06.00 WITA in Talau (14 hour) and it was a majority transportation for Talau people, there is 20 island in Talau but there is only 1 airport, 6 seaport, and only 2 seaport that routine used which is Melonguane as the government center and Lirung as the trade center, Talau people majority work as farmer, and fisherman. Talau island is a group of islands which is separated by sea so there is a lot of local transportation there such as: Perahu, spit bot (perahu cepat), bentor, etc. The population was 83,441 according to the 2010 census. Most of the population are involved in agriculture, which includes coconuts, vanilla, nutmeg, and cloves.

Result**Chili Commodity**

In north Sulawesi chili is becoming the most important commodity even though has become the basic needs of people. Based on data in 3/8/2015 that released by BPS (Badan Pusat Statistik) north Sulawesi produce 8.486 Ton of fresh chili. "The data recorded that there is 664 Ton chili that north Sulawesi people consume per month", Said the chief of BKP (Badan Ketahanan Pangan) north Sulawesi on (Beritasatu.com, 2015). There is a high demand of chili but sometimes the production inside province is not enough, in order to fulfill the demand it needed to add the stock from outside the province. Talau people majority work as farmer but the traditional farming pattern that produce and fanning horticulture such as chili, union, tomato, etc. has change and becoming passive it caused the decreasing number of horticulture farming area even in some place chili farming area does not exist, this changes makes Talau regency can no longer fulfil their own demand, Chili is a commodity with the price is always fluctuate some times the price is Rp.60.000, - and in Talau there is Rp.130.000, -.

The Supply Chain of Chili Commodity Description

Mr. Burhan as a farmer harvest chili in 3 hour start from 05.00 and finish 08.00 WITA with 5-6 worker, for 200-300 kg/3 days a week, he sell it to local retailer and collectors for Rp.35.000/kg. Mr. Bambang is a chili Collectors in Tumba village Gorontalo, he collecting chili from Farmer in Tumba, Mamalia, Mangadana, Lion, Bone pantai, and Marisa for 100-300 Kg/Farmer until 1000 Kg (1 TON) from 08.00 -17.00 WITA Routinely transaction with CROUPIER for Rp.55.000/kg and 1 Ton Quota /Day. Packing and loading in 2 hours and distributed to Manado in 9 hour, star from 06.00 and arrive on 03.00 WITA. Rp.1.000/Kg of distributing Cost to Manado & Rp.19.000/Kg of Profit Chili arrive from collectors on 03.00 WITA then loading out in 2 hours. Mr. Eda as a Croupier buy chili for Rp.55.000/kg and 1 Ton Quota /Day Store open in 5 hour, from 05.00 -10.00 WITA, Sell to retailer for Rp.70.000/kg and sometimes sell it to the other collectors in outside north Sulawesi the profit is Rp.15.000. Mr. Alex buy chili from Croupier for Rp.70.000 and sell it for 80.000 to consumer and retailer in Manado. Mr. Masri as a Lirung retailer buy chili from Big retailer in Bersihati (Bpk. Alex) for Rp.80.000 and packing then loading it in ship on seaport in order to distribute to Lirung (Talau), the distribution to Lirung is in 14. Hours start from 16.00 WITA and arrive on 06.00 WITA, the ship itself only went to Talau Island for period 3 Times/week (Monday, Wednesday, Friday). Mr. Masri store open in 11 hours from 07.00 - 18. .00 WITA and sell chili for Rp.90.000 with cost of Rp.2.000/Kg include loading and shipping cost and profit of Rp.8.000

Discussion

One of the reason that lead into increasing price of chili commodity in this supply chain is there are no need intermediaries in it, which is big retailer, by removing big retailer there will be a decreasing in cost and also the chili quality that sale into final customer will increase because directly buy from croupier. The croupier also need to be remove because it will be better if the chili is directly buy from collector to decrease the price

but considering that there is no actor that has the power of money to conduct that task, so it needed to be considered.

The Advantage & Disadvantage of existing supply chain

There is significant increasing of price of chili commodity, where the price of chili commodity from farmers is Rp.35.000- and customer in Manado for Rp.80.000- and in Talaud there is Rp.90.000. The other disadvantage is, the distributing cost of chili is not high (Rp.1.000,-/kg) from Gorontalo to Manado, but the seller is considering the big profit that they get. The problem also not only in the price of chili but also the quality of chili is influence by the duration of distributing time. The current supply chain is not effective and efficient, because the role of retailer is repeated there is also a collectors that act as a single buyer and seller in this chili commodity supply chain system, so he can control the stock of chili on the market. The only advantage of this supply chain system is that there is not too much actors in it, compare to another location such as java.

Redesign the new scenario of supply chain

1. Time efficient scenario

In this scenario farmer should farm the chili on the night in 3 hours start from 12.00-03.00, collectors collect the chili from farmer and, packing, loading in and bring it from Tumba village into Gorontalo Airport, start 04.00-05.00 arrive, then loading the chili into airplane. The airplane start from Gorontalo-Manado from 05.30 and arrive on 06.15. Loading out,Mr.Masri pick up the chili and then send on 10.00 in the airplane from manado to melonguane, on 11.00 the airplane arrive then the chili is needed to distributed to Mr.Masri store in Lirung District by boat from melonguane. And on 12.00 the fresh chili is ready on the store with 12 hour chili time before broken.

2. Cost efficient scenario

In this scenario, the Collectors buy chili from farmers in Tumba, Mamalia, Mangadana, Lion, Bone pantai, and Marisa for 100-300 Kg/Farmer until 1050Kg. From 08.00 -17.00 WITA. Routinely transaction with CROUPIER for Rp.55.000/kg and 1 Ton Quota /Day and 50 kg for Mr.Masri. Packing and loading in 2 hours and distributed to Manado in 9 hour, star from 06.00 and arrive on 03.00 WITA. Rp.1.000/Kg of distributing Cost to Manado & Rp.19.000/Kg of Profit Chili arrive from collectors on 03.00 WITA then loading out in 2 hours.Mr.Masri as a Lirung retailer order and buy chili from collectors for Rp.55.000/kg and packing then loading it in shipin seaport in order to distribute to Lirung (Talaud), the distribution to Lirung is in 14.Hours start from 16.00 WITA and arrive on 06.00 WITA, the ship itself only went to Talaud Island for period 3 Times/week (Monday, Wednesday, Friday). Mr. Masri store open in 11 hours from 07.00 - 18. .00 WITA and sell chili for Rp.65.000 with cost of Rp.2.000/Kg include loading and shipping cost and profit of Rp.8.000

3. Cost efficient scenario by government

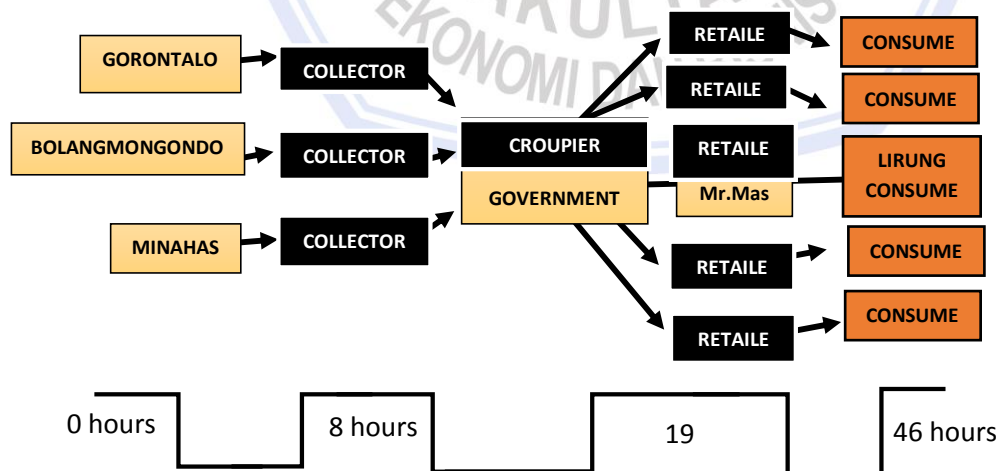


Figure 2 Supply Chain with Cost efficient scenario by

Source: Primary Data

Table 2 Profit Margin of Time efficient scenario by Government

Profit margin	Value (Rp/Kg)
Farmer	
Selling price	Rp.35.000,-
Collectors	
Buying price	Rp.35.000,-
Selling price	Rp.36.000,-
Cost	Rp.1.000,-
Profit	Rp.5.000,-
Croupier(government)	
Buying price	Rp.36.000,-
Selling price	Rp.40.000,-
Profit	Rp.4.000,-
Lirung Retailer	
Buying price	Rp.40.000,-
Selling price	Rp.47.000,-
Cost	Rp.2.000,-
Profit	Rp.5.000,-

Source: Primary Data 2017

4. Mix scenario

In this scenario collectors buy chili from farmers in Tumba, Mamalia, Mangadana, Lion, Bone pantai, and Marisa for 100-300 Kg/Farmer until 1050 Kg. From 08.00 -17.00 WITA. Routinely transaction with CROUPIER for Rp.55.000/kg and 1 Ton Quota /Day and 50kg for Mr.Masri. Packing and loading in 2 hours and distributed to Manado in 9 hour, star from 06.00 and arrive on 03.00 WITA. Rp.1.000/Kg of distributing Cost to Manado & Rp.19.000/Kg of Profit Chili arrive from collectors on 03.00 WITA then loading out in 2 hours.Mr.Masri prepare the chili from collectors in bersihati to bring into Sam Ratulangi airport to send on 10.00 in the airplane from manado to melonguane, in 11.00 the airplane arrive then the chili is needed to distributed into Mr.Masri store in Lirung District by boat from melonguane. And on 12.00 the chili is ready on the store with 28 hour chili time before broken.

The advantage and disadvantage of new design of supply chain system

A.Time efficiency

Time efficiency is a scenario that focusing on the time that spend in the supply chain flow and the quality of the chili, by changing the transportation tools, the advantage in this scenario is that the Time of chili before broken is increasing it means the fresh chili with a high quality is arrive sooner, from 48 hour in the existing supply chain system, becoming 12 hour.

The disadvantage is that the price is increasing because the cost of transportation, and also this scenario will be hard to realize, because the actors in this supply chain system is need to arrange an agreement that make, the increasing cost for them and decreasing profit, compared to the existing supply chain system.

B. Cost Efficiency

1. Cost Efficiency

The advantage of cost efficiency scenario is that the scenario is realistic and will be easy to execute, because it doesn't change the existing supply chain system to much, by eliminate the retailer in Bersihati traditional market and croupier in the existing supply chain system and recommend the lirung retailer to buy directly to collector to reduce the cost.

The disadvantage is that the time that spent is still same with the existing supply chain and it is effecting the chili commodity quality and durability and also this scenario only decreasing the price of chili in Lirung district Talaud regency, it is not affect in another place.

2. Cost Efficiency by Government

The advantage of this scenario is that the price of chili is significantly decreasing and affecting all of the supply chain system of chili commodity in north Sulawesi. The price of existing supply chain system of chili is Rp.90.000,-/kg and in this scenario it will be Rp.47.000,-/kg in Lirung district. This scenario almost the same as the previous research which is The Efficient and Effective Logistic System Development with Supply Chain Management Approach, where the research suggests that the institutional of Government has a large role and capabilities as a policy maker or as guarantor in getting price affordable.

The disadvantage is that the chili before broken time is still the same as the current supply chain which is 48 hour and this is affecting the quality of chili.

C. Mix Scenario

The advantage of this scenario is that the chili quality and time before broken is increasing and it doesn't change to much the existing supply chain system, the deferent is only in the transportation that use by Mr.Masri, from ship into airplane in order to increasing the life time before broken of chili.

The disadvantage is that this scenario is the increasing price of chili, because of the shipping cost of airplane from Manado-Melonguane which is Rp.35.000,-/kg and the total price is Rp.100.000,-/kg of chili.

CONCLUSION AND RECOMMENDATION

Conclusion

The chili commodity is an important commodity that cannot be separated from Indonesian people, no matter how much it cost, people will buy it. So it becoming homework where all the actors should be responsible to keep chili price affordable for people by finding the main problem and resolve it with right answer.

By conducting this research, researcher find the main problem that occurs which is the supply system of chili commodity. Even the production inside is surplus but the supply is not equal it caused the scarcity on the market that lead into increasing price. Research finds that the supply chain system of chili commodity in Lirung district Talaud regency is came from Gorontalo and Bolaangmongondow where the tiers are start from farmer, collectors, croupier, retailer in Bersihati traditional market and then Lirung district retailer (Mr.Masri). This supply chain is not effective and efficient. The price of chili commodity on the market is not equal with the cost that seller had spent, the seller only focusing to get a huge amount of profit without reconsider the buyer. And also there is no information sharing between the supply chain actors.

So it needed to be redesign based on the situation and condition on the field by focusing on Time Efficient scenario, Cost efficient scenario, and Mix scenario, and also removing the big retailer (Mr.Alex) in order to minimize the cost and decrease a double retailer on the chain and Croupier (Mr.Eda) to decrease the cost and remove the one who monopolize the chain and control the price. So there will be an effective and efficient supply chain. But other problem occurs when the croupier removed because he is the one that has the capital, and there is no one on the tiers that have the ability.

Recommendation

The recommendation of this research is:

1. The government should be socialize about the important of planting chili in every people house in order to increase the local chili stock and also fulfil own needs.
2. The government should motivate and assist local farmer to farming a chili commodity and make regulation about the standard price of local chili commodity on the market in order to control the stock and price.
3. The local retailer should change the supply chain system of chili commodity by negotiate, make an agreement and sharing information between supply chain actors (Farmer, collectors, retailer). And also by considering consumer benefit.
4. The the actors should maintain a good relationship and agreement by conducting continues transaction of the material flow with a professional payment system and a proper communication. In order to achieve win-win situation with an effective and efficient supply chain, so there will be no bullwhip effect on the supply chain

that create loss and miscommunication

5. The supply chain that recommended is based on Cost efficient and the government is needed to take a part in the supply chain as the croupier because government has the resources and ability to conduct that task. To there will be a transparency and flexibility in sharing information of market demand and price.

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