



Bogor Agricultural University (IPB)

# IndoDairy Project

*Searching & Serving the Best*

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## Value Chain Report: North Sumatera

Bogor, October 9<sup>th</sup> 2018

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Australian Government  
Australian Centre for  
International Agricultural Research

**Australian  
Aid** 

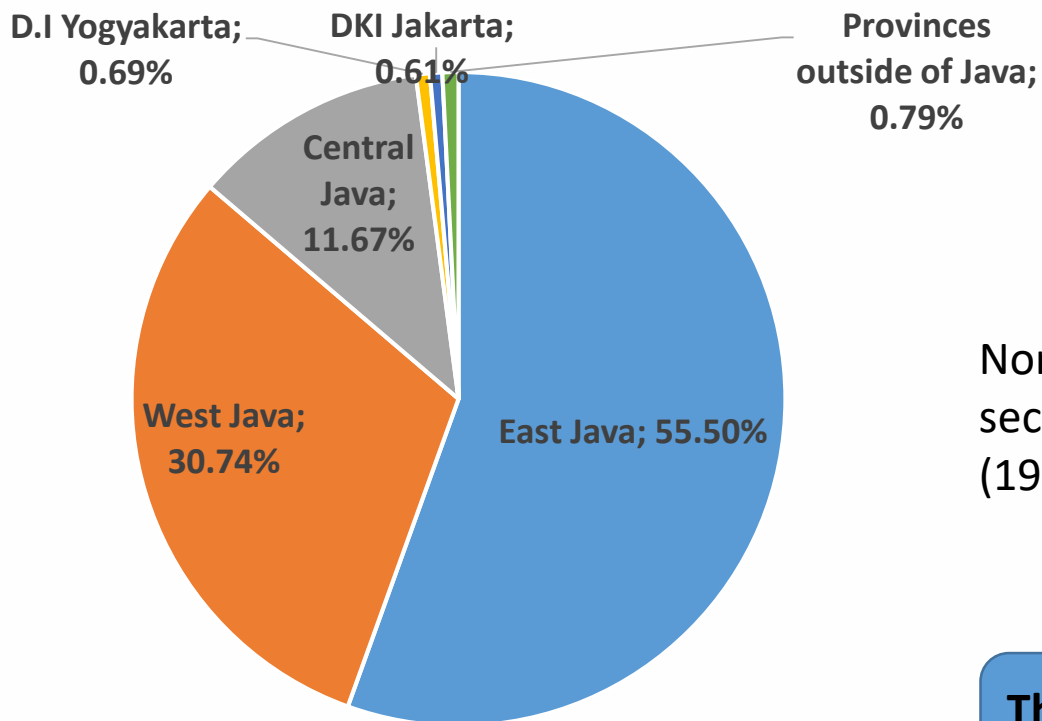


# NORTH SUMATERA

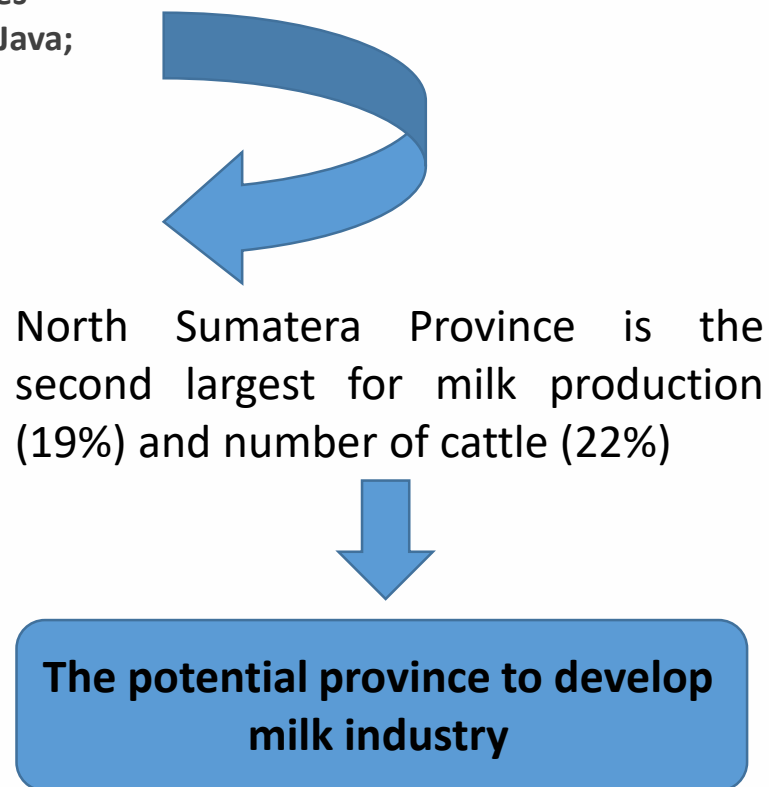




# Overview



Indonesian Milk Production  
2012- 2016





# Overview

Table 1. Milk Production in Outside Java Island 2012-2016

No	Province	Production (ton)					Average (ton)	Percentage (%)
		2012	2013	2014	2015	2016 <sup>a)</sup>		
1	South Sulawesi	3,000	1,671	2,635	2,727	2,795	2,566	39
2	North Sumatera	988	1,685	1,032	1,299	1,363	1,273	19
3	West Sumatera	761	1,369	783	776	837	905	14
4	Other Provinces	2,258	2,329	1,492	1,676	1,798	1,911	28
Outside Java		7,007	7,054	5,942	6,478	6,793	6,655	100

Directorate General Livestock and Animal Health, Ministry of Agriculture (2016)

a) Initial estimates value



# Overview

Table 2. Number of Cattle in Outside Java Island 2012-2016

No	Province	Number of Cattle (head)					Average (head)	Percentage (%)
		2012	2013	2014	2015	2016 <sup>a)</sup>		
1	South Sulawesi	1,961	1,410	1,464	1,515	1,553	1,581	28
2	North Sumatera	1,057	1,901	1,088	1,078	1,163	1,257	22
3	West Sumatera	646	1,101	674	849	891	832	15
4	Other Provinces	2,230	2,275	1,674	1,693	1,937	1,962	35
Outside Java Island		5,894	6,687	4,900	5,135	5,544	5,632	100

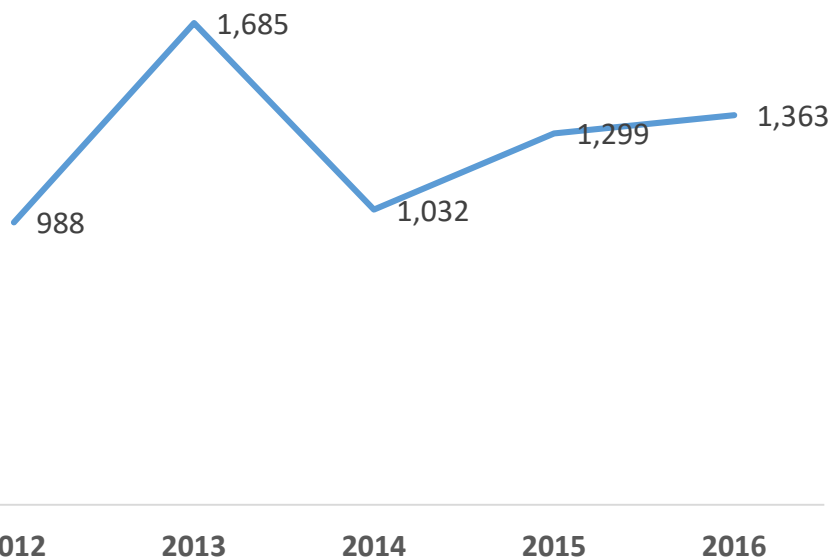
Directorate General Livestock and Animal Health, Ministry of Agriculture (2016)

a) Initial estimates value

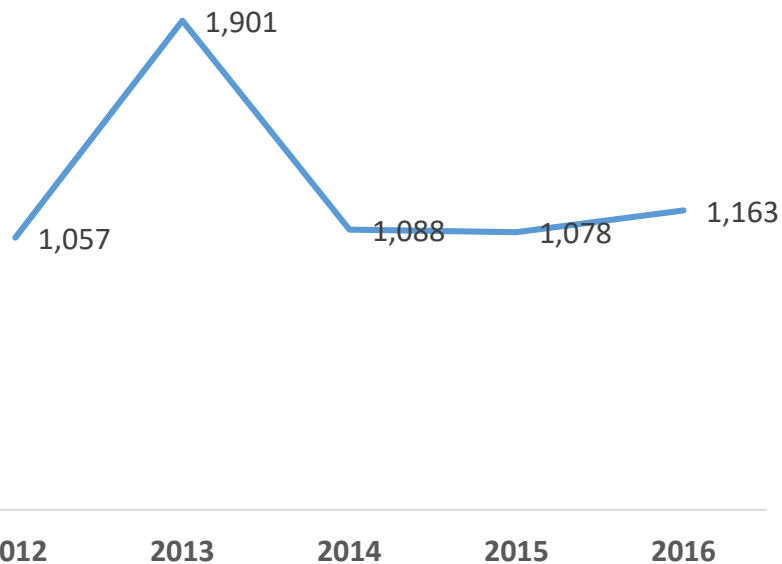


# Overview

### Milk production (ton)



### Number of Cattle (Head)



The average growth was 11 %



# Location of Survey

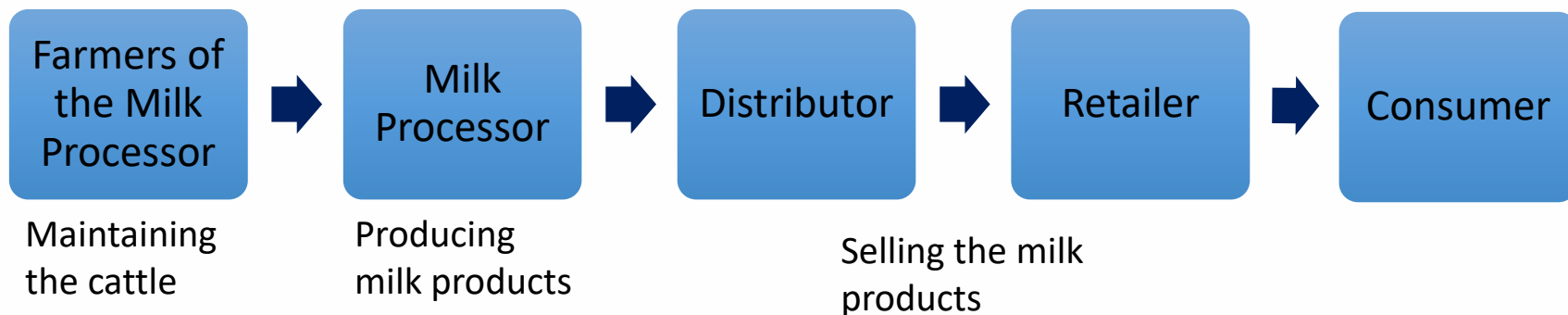
- Binjai
- Karo
- Medan
- Deli Serdang



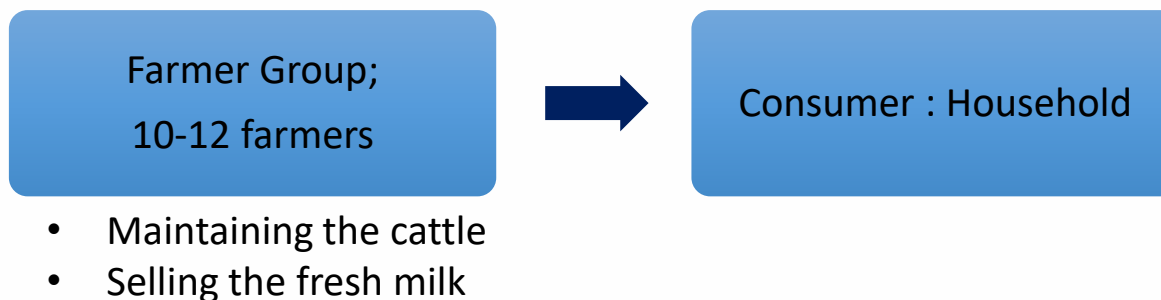


# The Dairy Value Chain in North Sumatera

## Type 1. Vertical Integration



## Type 2. Farmer Group: Communal Farming





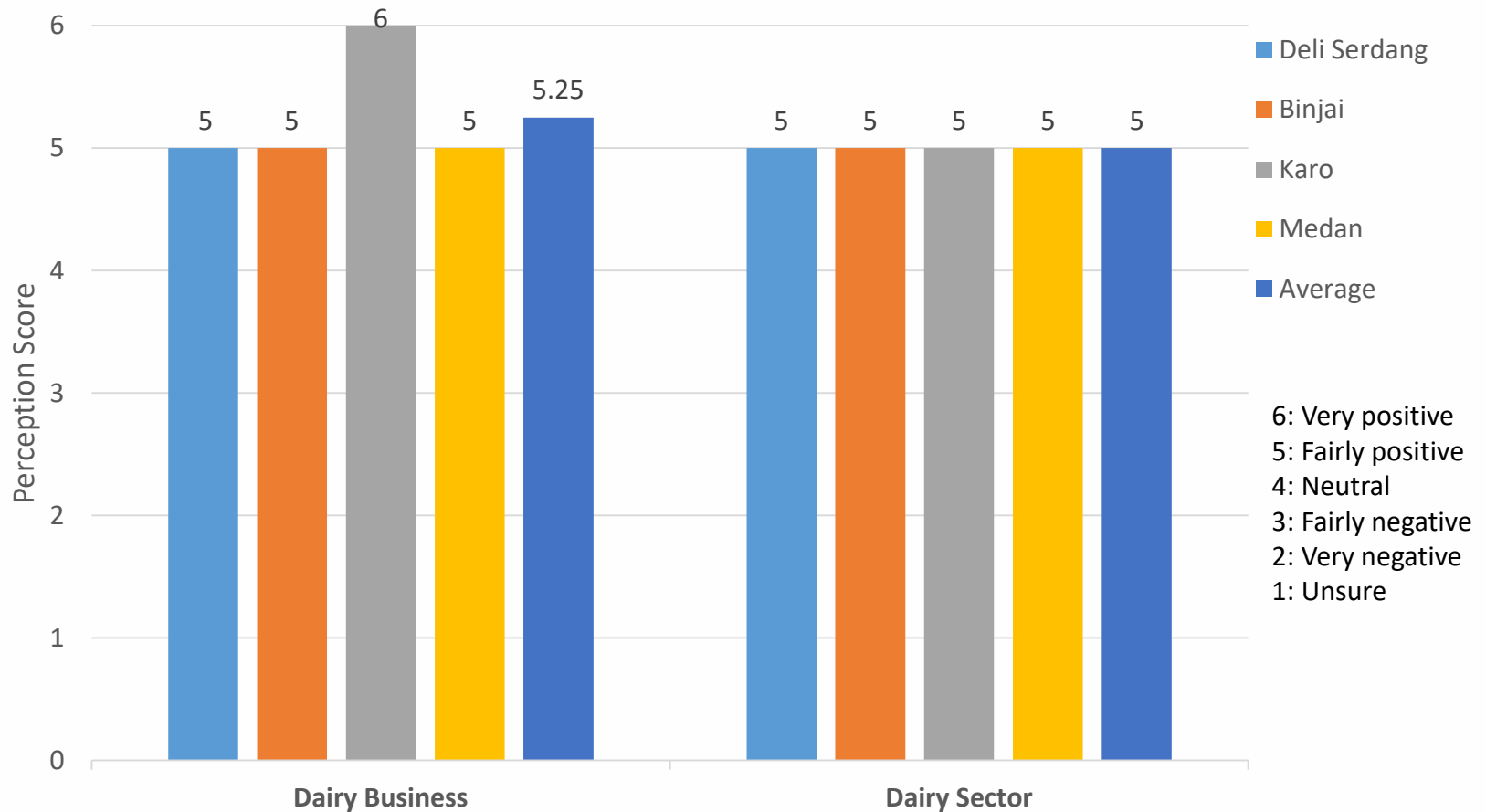


# Milk Price & Production in February 2018

Farmers	Category	Lowest	Average	Highest
<b>Binjai</b>	Price (Rp/L)/ (US\$/L)	15,000 /(1.1)	-	20,000/ (1.5)
	Production (L/Cow/Day)	5	-	15
<b>Karo</b>	Price (Rp/L) / (US\$/L)	-	14,000/ (1)	-
	Production (L/Cow/Day)	5	7	15
<b>Medan</b>	Price (Rp/L) / (US\$/L)	10,000/ (0.7)	15,000/ (1.1)	25,000 /(1.9)
	Production (L/Cow/Day)	-	5	-
<b>Deli Serdang</b>	Price (Rp/L) / (US\$/L)	-	15,000 /(1.1)	-
	Production (L/Cow/Day)	5	9	13

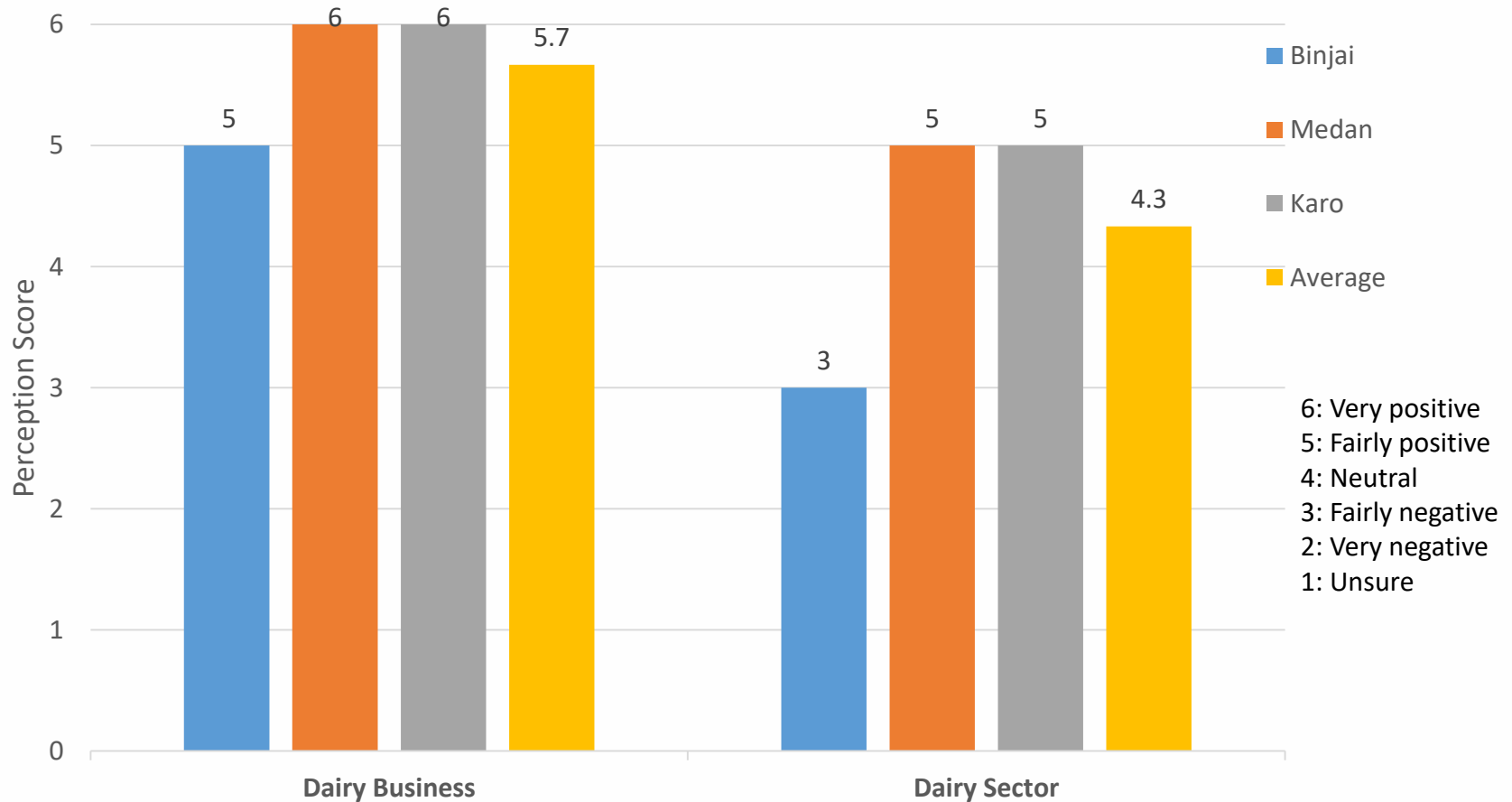


# Farmer group's perception on the future of the local dairy business & the national dairy sector



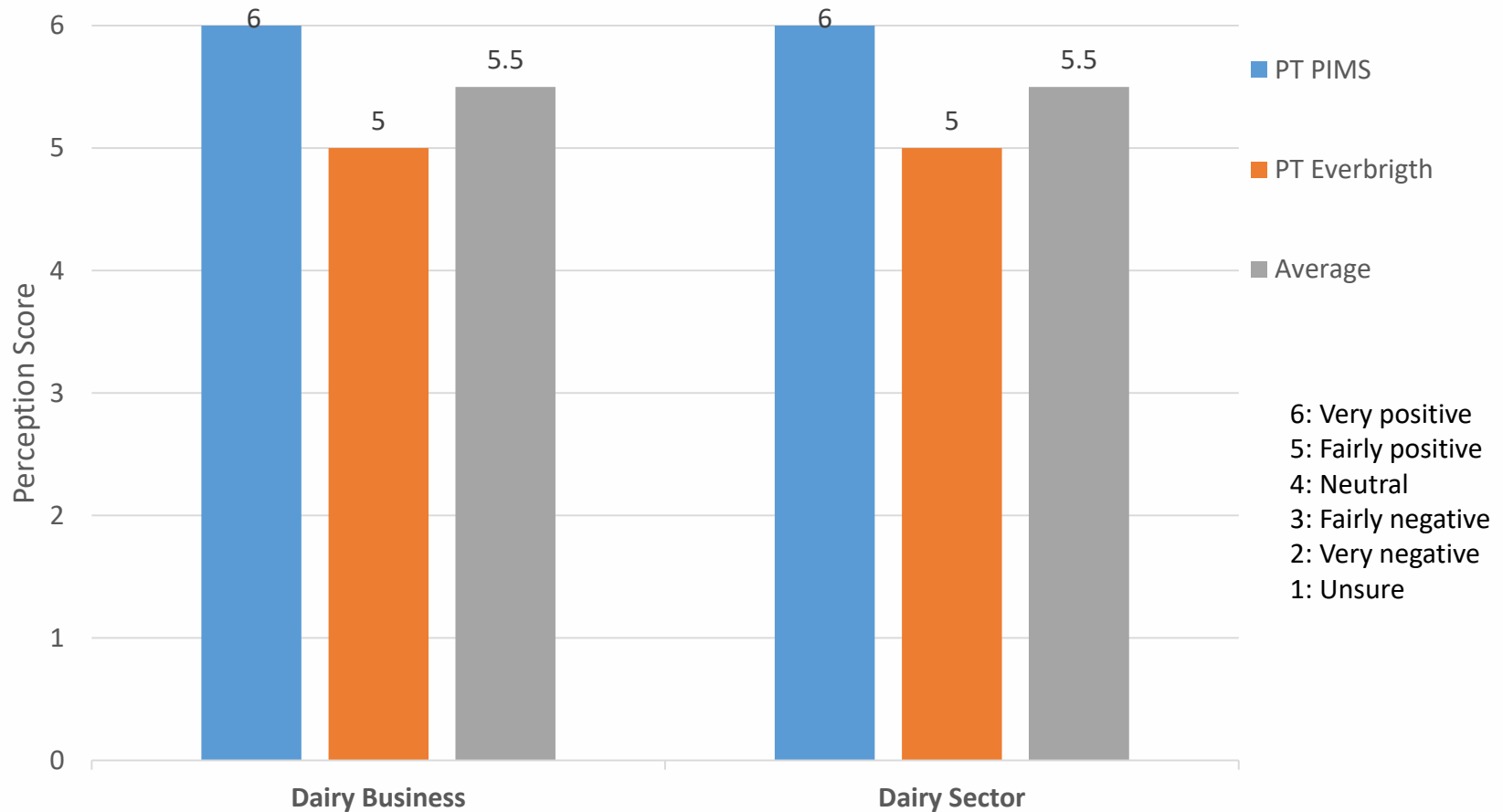


# Local Government's perception on the future of the local dairy business & the national dairy sector





# MPI's & Importer's perception on the future of the local dairy business & the national dairy sector





# Opportunities

Actors	Opportunities
Farmers	Local government has provided many supports for farmer groups: internship and training in Java, providing milking tools & milk processing tools, establishing coop, water place
Cooperatives	The cooperatives currently does not exist. But, farmers realize to build a cooperative to improve farmers productivity
Milk Processors	Dairy industry in North Sumatera also still wide open because there has been only one milk processing company (PT PIMS)
Retailers	Demand of milk products in retail store is quite high There are milk product brands

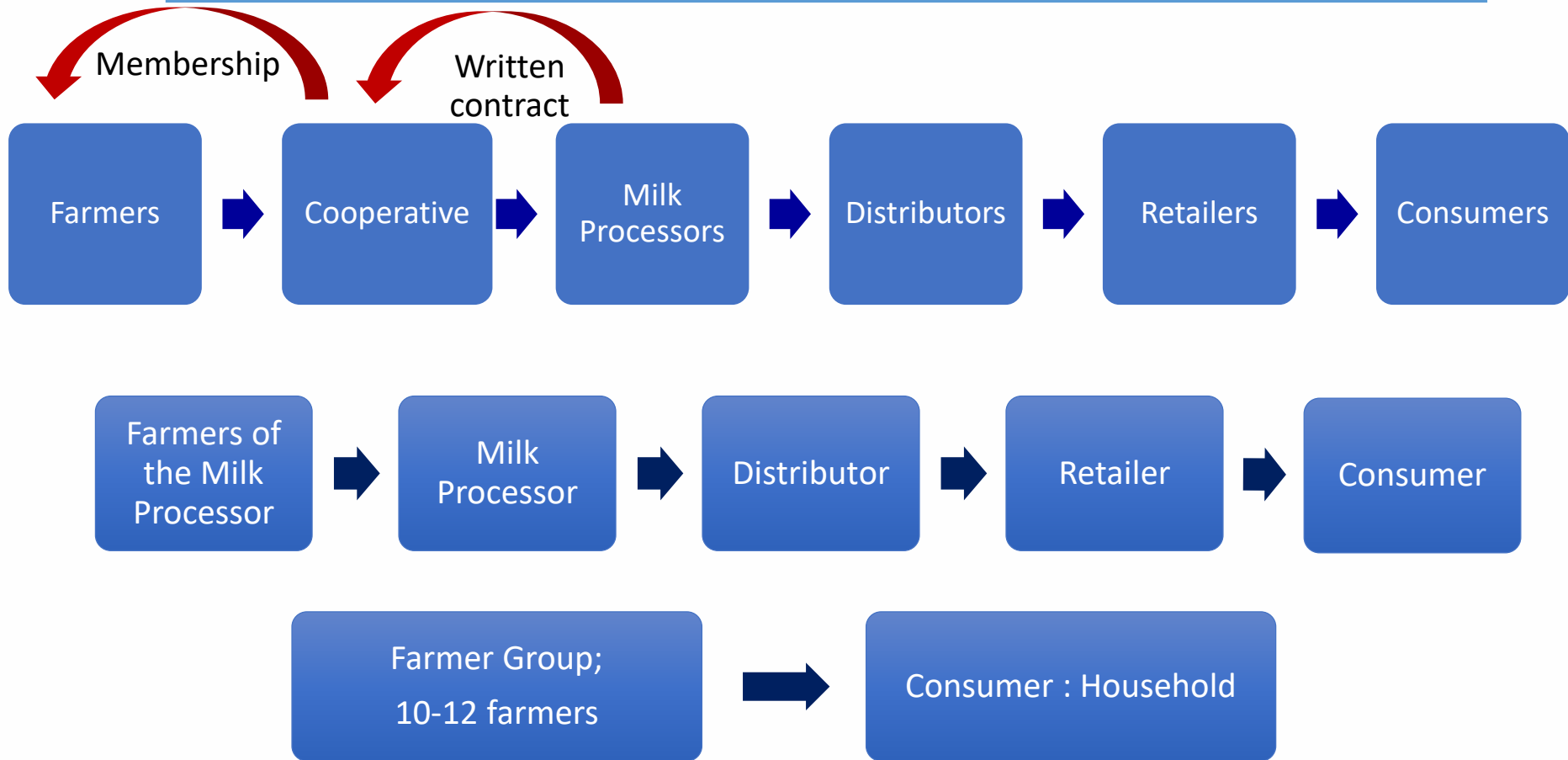


# Challenges

Actors	Challenges
Farm Input Suppliers	<ul style="list-style-type: none"><li>• Lack of cheap heifers, facilities, and farming tools.</li><li>• It is hard to obtain pollard</li></ul>
Farmers	<ul style="list-style-type: none"><li>• Farmers prefer to do beef cattle farming than dairy farming → They do not want to do complex management due to their perception</li><li>• Farmers do not have initial capital</li><li>• Low risk taker</li></ul>
Milk Processors	There has been only one milk processor in North Sumatera (PT. PIMS) with low capacity
Retailers	<ul style="list-style-type: none"><li>• There has not been any local fresh milk products marketed in retailers.</li><li>• Local fresh milk from farmer groups are sold to consumers directly without good processing and packaging</li></ul>



# The general type of Dairy Value Chain: West Java and North Sumatera



Which type is more sustainable ?



# Value Chain Priorities and Recommended Actions

Actors	Recommended actions
Farm Input Suppliers	<ul style="list-style-type: none"><li>• Improve assistance on heifer and grass seed, assistance on tools, facilities, and increase training on good cow management practices.</li></ul>
Farmers	<ul style="list-style-type: none"><li>• Develop demonstration plot which is managed with focus and intensively. The good result will then be shared so that farmers will be interested in doing dairy farming as suggested/guided.</li><li>• Farmers need assistance on financing the feeds until the cows can produce milk.</li></ul>
Cooperatives	<ul style="list-style-type: none"><li>• Along with the development of dairy farming, a cooperatives should be established to support the dairy farming development.</li><li>• Provide assistance for the groups/cooperatives.</li></ul>
Milk Processors	<ul style="list-style-type: none"><li>• Partnership is the most important thing to develop dairy farming/business.</li><li>• Milk processors should add some products diversification and improve dairy product quality.</li></ul>
Retailers	<ul style="list-style-type: none"><li>• Develop partnerships with milk processors and farmer groups.</li><li>• Conduct market survey.</li></ul>
Government	<ul style="list-style-type: none"><li>• Build more processing industry to collect milk from farmers.</li><li>• Government policies should be synergized with the relevant stakeholders.</li></ul>





# Key Success Factors

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- Shared-vision of a supply chain
- Long-term collaboration
- Mutual trust
- Mutually exclusive cooperation
- Commitment from relevant stakeholders
- Updated technologies and innovations
- Women inclusion
- Guaranteed production and prices
- Economies of scale → reduction in transaction costs
- Risk sharing
- Credit and financial intermediaries
- Provision of inputs, extension services and technology
- Timely inputs and payment
- Good communication, supervision and monitoring
- Incentives for quality, price and efficiency



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# Thank you

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# Standard requirement of fresh milk (SNI)

No.	Characteristics	Unit	Requirement
A	Density (at temperature 27.5°C), minimum	g/ml	1.0270
B	Fat level, minimum	%	3.0
C	Dry matter without fat, minimum	%	7.8
D	Protein level, minimum	%	2.8
E	Color, smell, taste, viscosity	-	No change
F	Acid level	-	6.0-7.5
G	pH	-	6.3-6.8
H	Alcohol (70%), v/v		Negative
I	Microbial contamination:		1x10 <sup>8</sup>
	1. Total Plate Count	CFU/ml	1x10 <sup>2</sup>
	2. Staphylococcus aureus	CFU/ml	1x10 <sup>3</sup>
	3. Enterobacteriaceae	CFU/ml	
J	Maximum	cell/ml	4x10 <sup>8</sup>
K	Antibiotics residue (Group of penicillin, Tetracycline, Aminoglycoside, Macrolide)	-	Negative
L	Falsification test	-	Negative
M	Freezing point	°C	-0.520 – 0.560
N	Peroxide test	-	Positive
	Contamination of heavy metal:		
	1. Lead (Pb)	µg/ml	0.02
	2. Mercury (Hg)	µg/ml	0.03
	3. Arsenic (As)	µg/ml	0.1

Source: National Standardization Agency: SNI 3141.1-2011 (2011)