Partnering for Smallholder Inclusive Agricultural Development Models in Indonesia: Lessons from Dairy Industry Development Models in Indonesia

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Presentation Snapshot

- Overview of the Indonesian Dairy Sector
- Key Driving Forces in the Dairy Sector Transformation
- Understanding of Inclusive Business Model
- Dairy Inclusive Business Models
- Government Policies in Improving the Dairy Sector Transformation

Overview of the Indonesian Dairy Sector

Overview of the Indonesian Dairy Sector

- Indonesia's estimated per capita milk consumption is only 14.6 liters per annum which is significantly lower than 22 liters in the Philippines and 34 liters per capita in Thailand.
- Indonesia has approximately 500,000 dairy cattle which are mainly found in small numbers and tended to by individual farmers who are members of their local dairy cooperative (Koperasi Unit Desa, KUD).
- Indonesia's 2012 dairy cattle population was 611,939 head. However, with the high level of dairy cattle culling in 2012, in 2013 the Indonesian dairy cattle population declined to 444,266 head.
- In 2014 the dairy cattle increased to 502,516 head.

Overview of the Indonesian Dairy Sector (2)

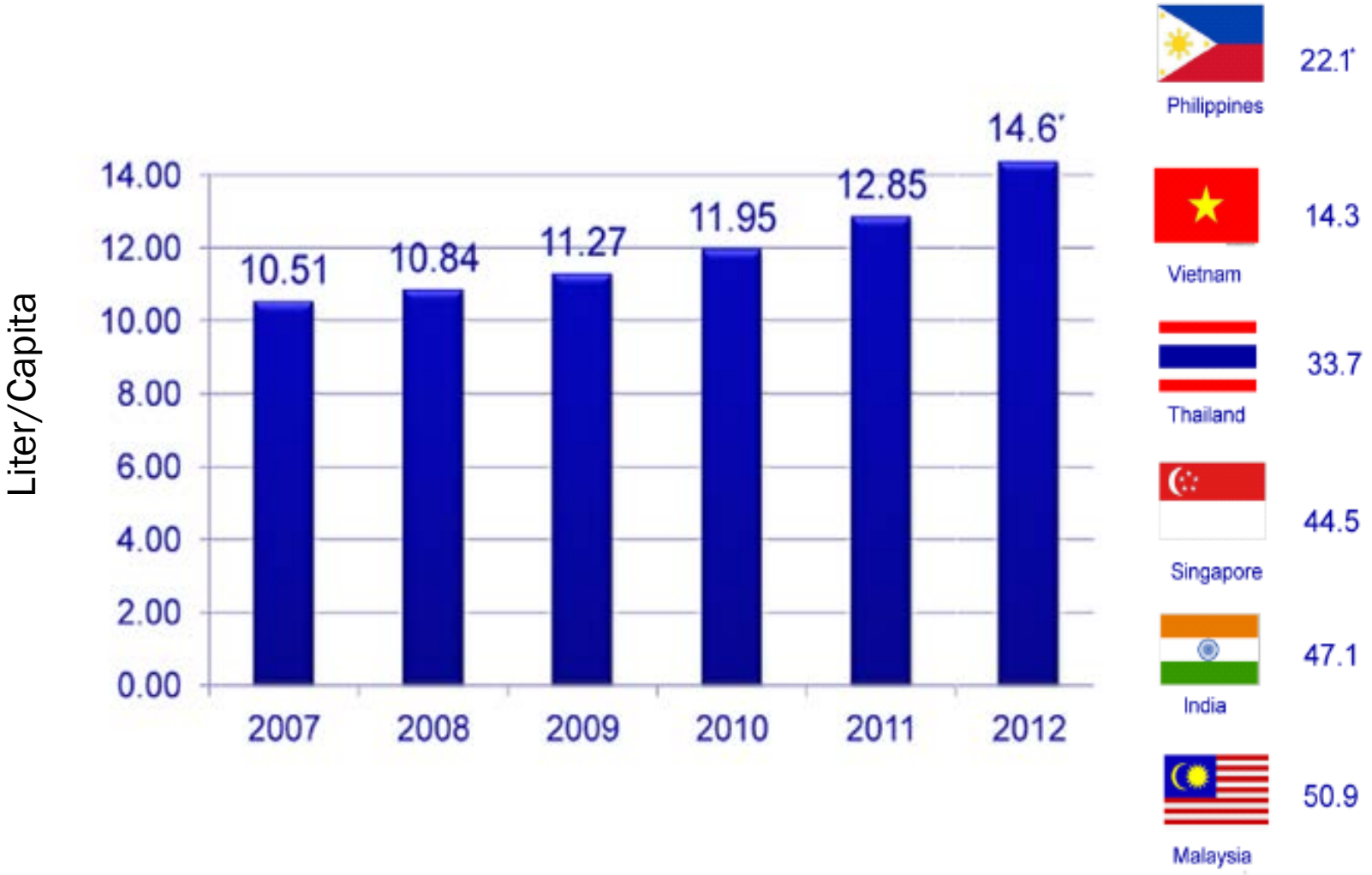
- Close to 90% of such farms are concentrated in West, Central and East Java with a small proportion of around 2% in Sumatra.
- East Java is Indonesia's largest dairy production base accounting for 57.09% of all milk production. West Java is second largest dairy producer accounting for 29.86%.
- The average productivity of cattle in Indonesia is nearly half of the international standard at 12-14 liters per day.
- Only 25% of the raw materials for milk supply are produced locally with 75% coming from foreign imports
- More than 90% of the dairy market is dominated by processed milk as opposed to fresh i.e. UHT milk and that in powdered or sterilized form.

Overview of the Indonesian Dairy Sector (3)

- There are 192,160 dairy farmers managing about 3 cows each on average.
- Most of these producers average 10-11 liters per cow per day.
- Small-holder farm yields remain limited as these farms do not benefit from scaling technologies.
- The majority of smallholder milk is marketed through local cooperatives.

Figure 1. Map of Republic of Indonesia

Figure 2. Indonesia's Milk Consumption



Source : Tetra Pak Compass Product and Packages (2011)
*DGLS, 2012

Table 1. Dairy Cows Population and Milk Output by Main Provinces, 2013

	Dairy Cows (Number)	Dairy Cows (Percent)	Milk Production (Tones)	Milk Production Percent
East Java	323.814	50,90	560.398	57,09
Central Java	154.398	24,27	107.982	11,00
West Java	143.382	22,54	293.107	29,86
Other	14.470	2.27	20.099	2,04
TOTAL	**636.064**	**100**	**981.586**	**100**

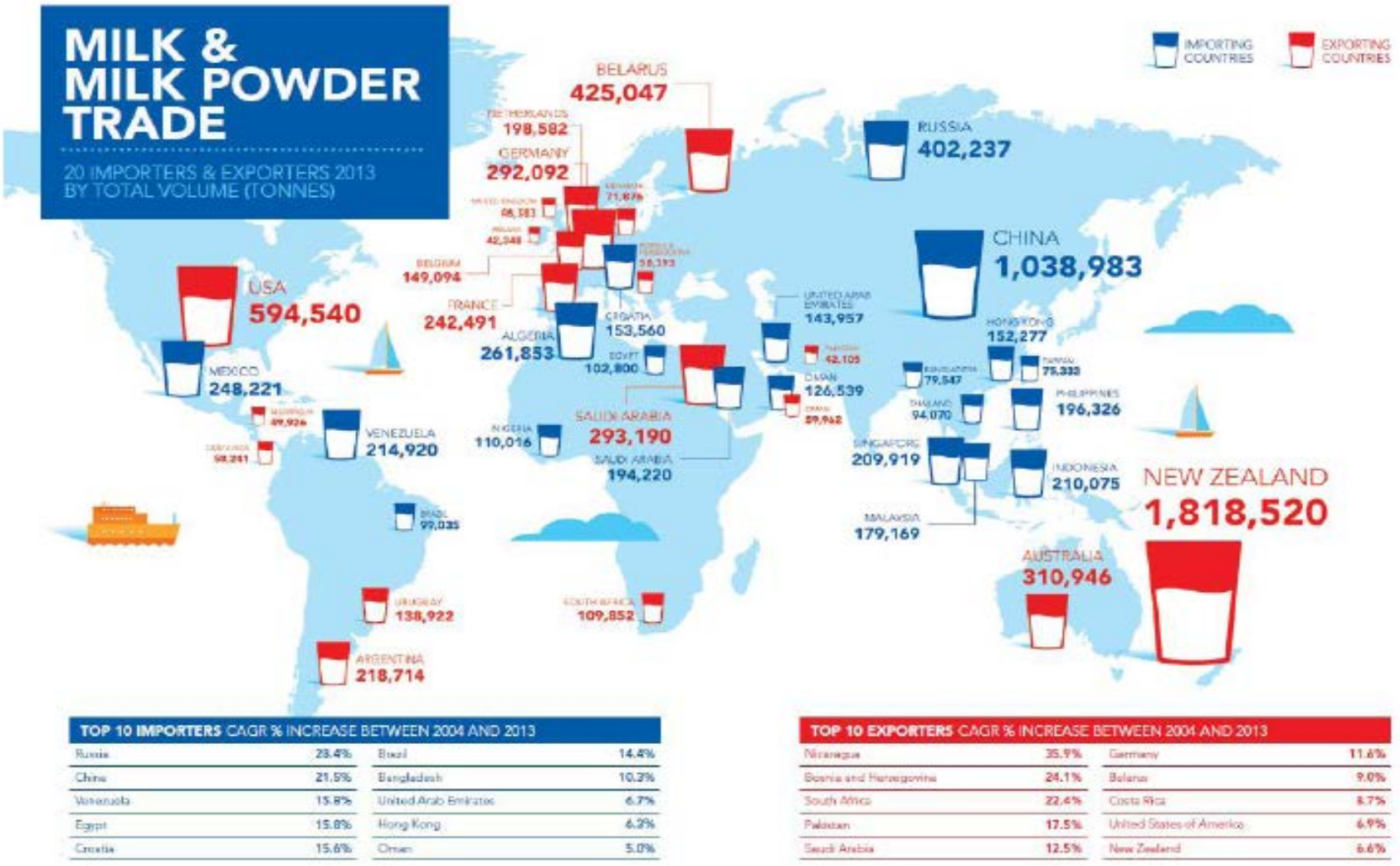
Source: Livestock Statistics, 2013

Table 2. Major Dairy Industries on Java and Their Main Products

Dairy Industry	Location	Products Manufactured
Frisian Flag Indonesia	West Java (Jakarta)	Liquid milk, Sweetened Condensed Milk (SCM), Milk powder
Indomilk	West Java (Jakarta)	Liquid milk, SCM, ice cream
Nestle	East Java (Pasuruan)	Condensed Milk, Milk powder
Ultra Jaya	West Java (Bandung)	Liquid milk, SCM, Milk powder
Sari Husada (Danone)	Central Java (Yogyakarta)	Liquid milk, yogurt, Milk powder
Greenfields	East Java (Malang)	Liquid milk
Garuda Food	West Java (Bogor)	Liquid milk
Cimory	West Java (Bogor)	Liquid milk, Yogurt
Diamond	West Java (Bekasi)	Liquid milk, Ice cream

Source : Dairy Industry Development in Indonesia, IFC, 2011

Figure 3. Milk Importing and Exporting Countries



TOP 10 IMPORTERS CAGR % INCREASE BETWEEN 2004 AND 2013

Russia	28.4%	Brazil	14.4%
China	21.5%	Bangladesh	10.3%
Venezuela	15.8%	United Arab Emirates	6.7%
Egypt	15.8%	Hong Kong	6.3%
Croatia	15.6%	Oman	5.0%

TOP 10 EXPORTERS CAGR % INCREASE BETWEEN 2004 AND 2013

Nicaragua	35.9%	Germany	11.6%
Bosnia and Herzegovina	24.1%	Belarus	9.0%
South Africa	22.4%	Costa Rica	8.7%
Pakistan	17.5%	United States of America	6.9%
Saudi Arabia	12.5%	New Zealand	6.6%

Source: Tetra Pak Dairy Index Issue 7, September (2014)

Key Driving Forces in the Dairy Sector Transformation

Figure 4. Key Driving Forces in Dairy Transformation : Demand Drivers (1)

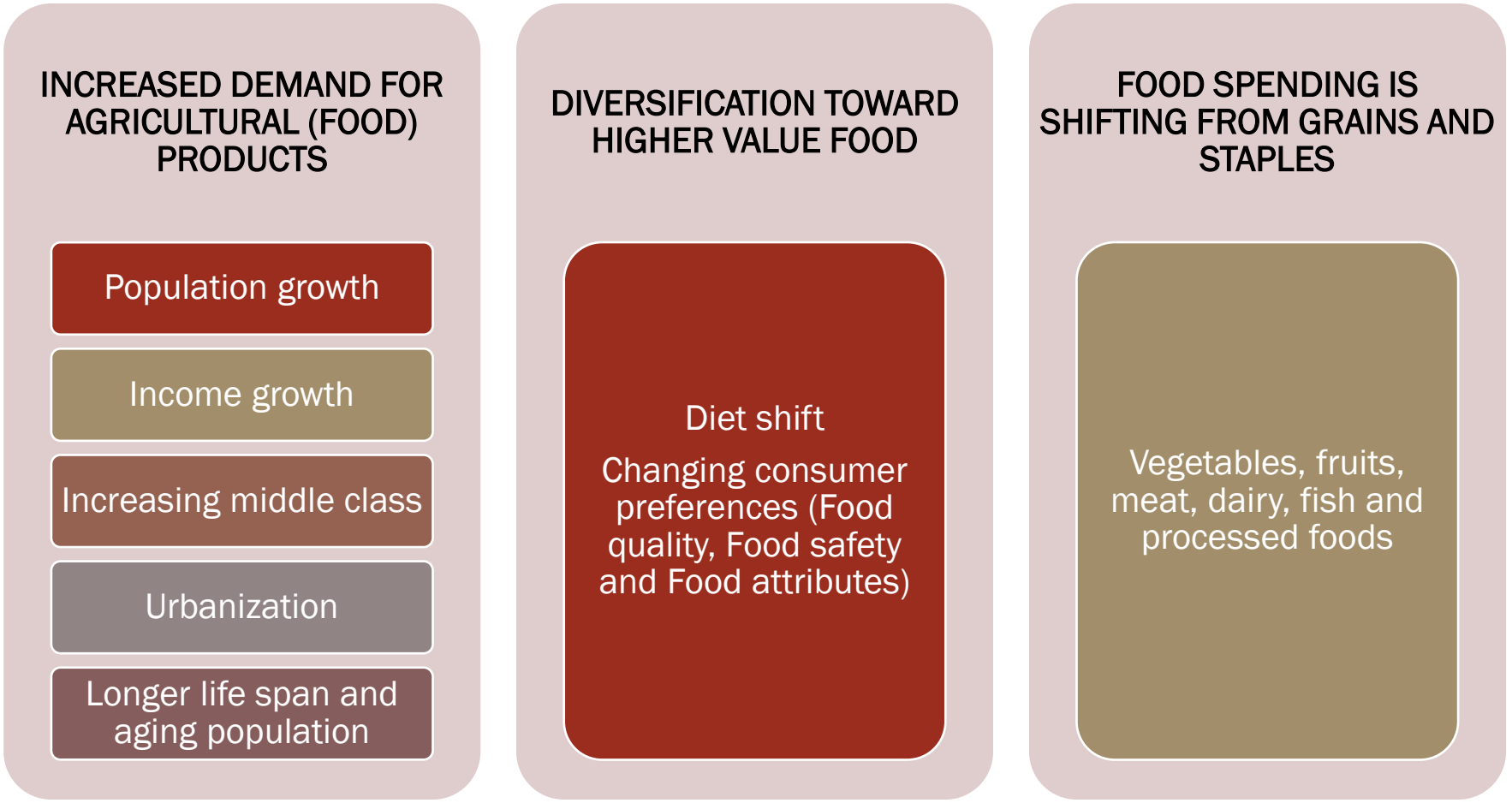


Figure 5. Key Driving Forces in Dairy Transformation: Demand Drivers (2)

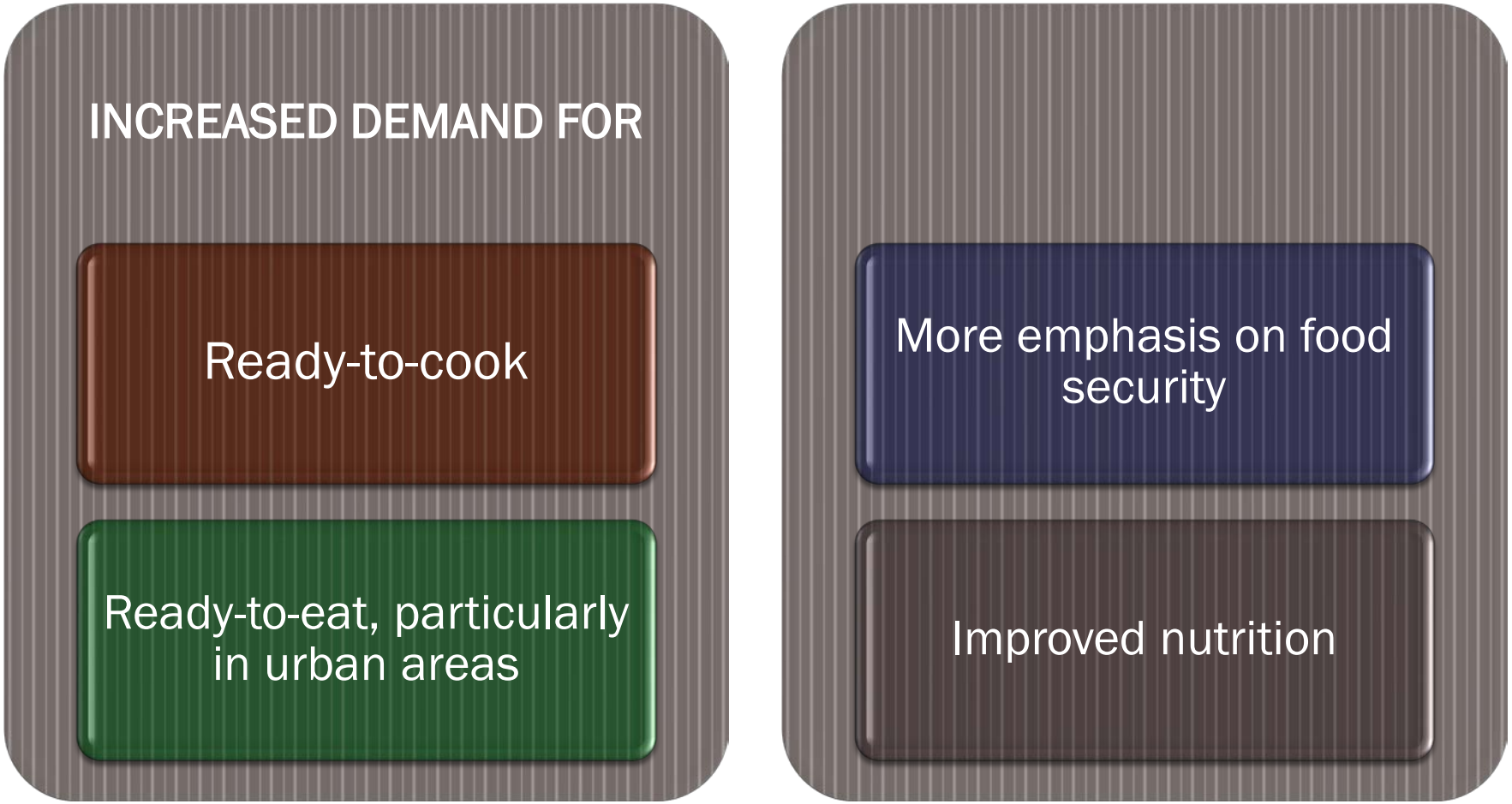
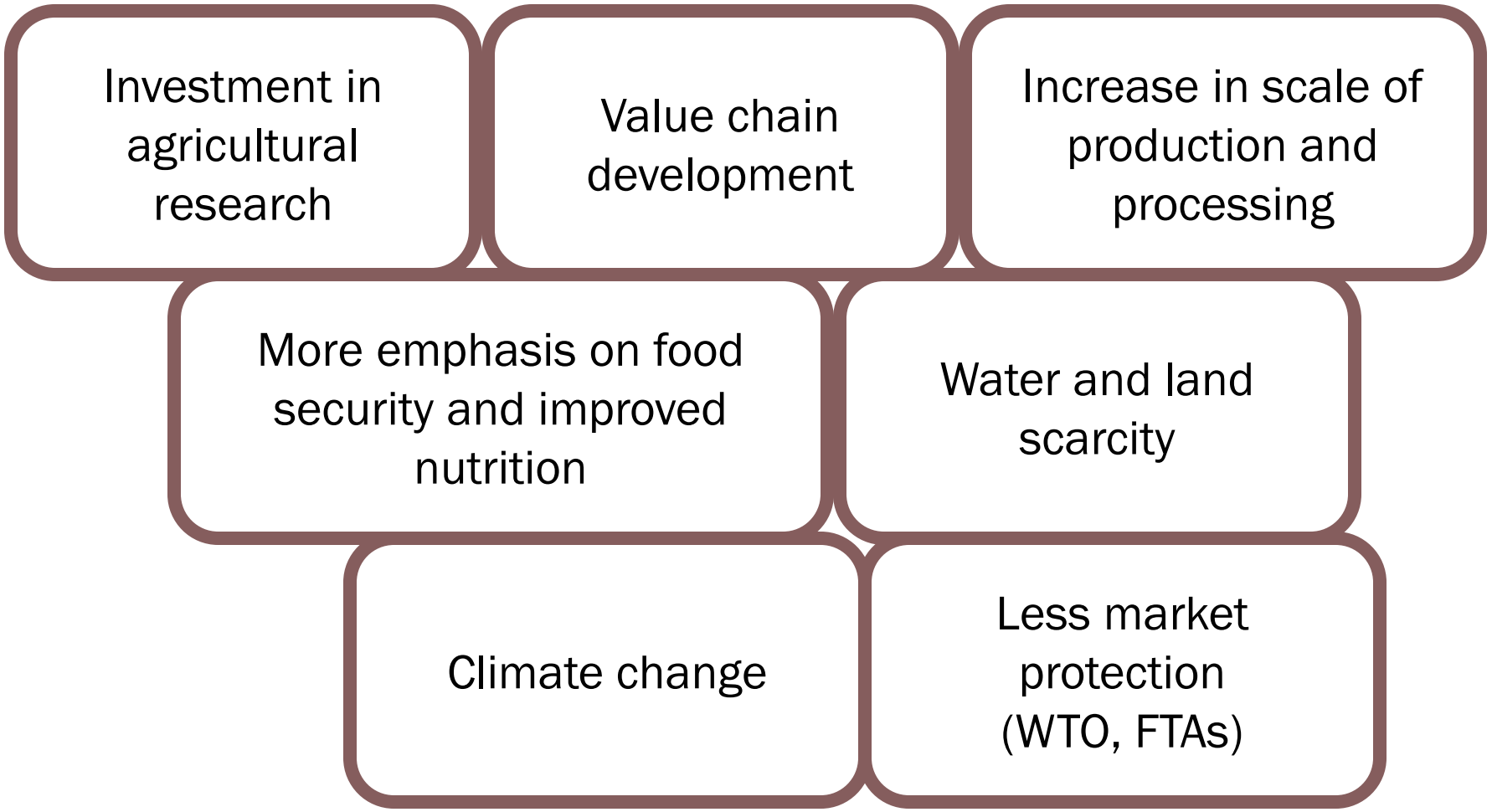


Figure 6. Key Driving Forces in Dairy Transformation : Supply Shifters

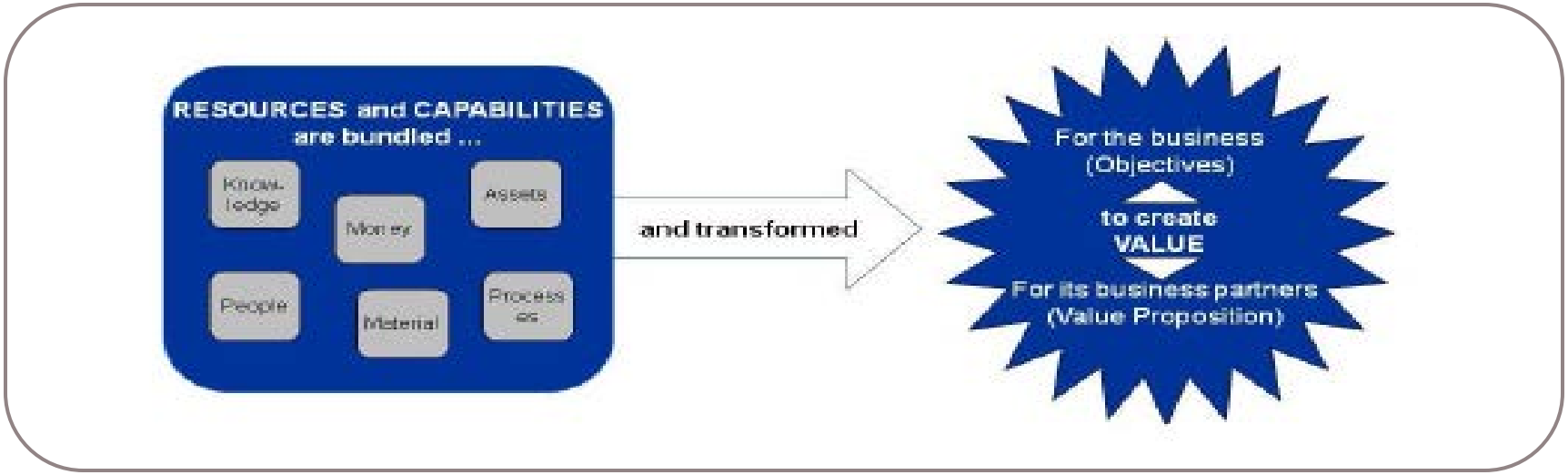


Understanding Inclusive Business Model

What are Business Models?

- FAO (2012) defines that the term “business model” as the rationale for how a company creates and structures its relationship to capture value.
- There are at least four categories of inclusive business models: management contracts (eg tenant farming, sharecropping, etc); joint venture, farmer-owned business and contract farming (eg the nucleus estate model, etc).

Figure 7. What are Business Models?



Value for business

- Winning new customers
- Expanding the workforce
- Strengthening supply and delivery chains

Value for people with low incomes

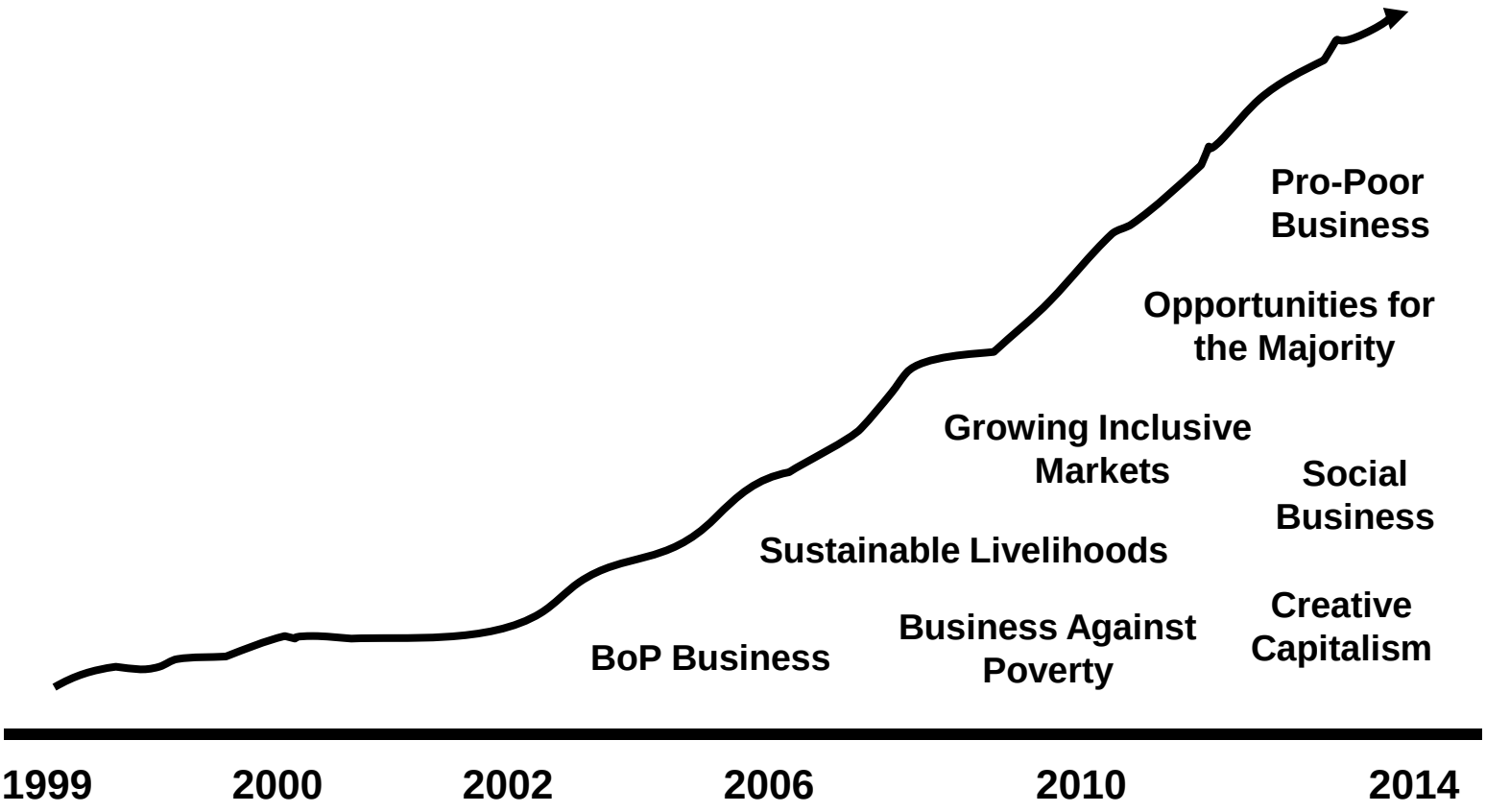
- Increasing incomes
- Meeting needs
- Increasing productivity

Source: UNDP 2010

Inclusive Business Models

- Inclusive business models have been defined by different scholars in different contexts.
- Business models are considered as more inclusive if they involve close working partnerships with local landholders and operators, and if they share value among the partners.
- An economically profitable, environmentally and socially responsible entrepreneurial initiative (WBCSD 2011)
- Inclusive Business Models include the poor on the demand side as clients and customers, on the supply side as employees, producers and business owners at various points in the value chain (UNDP 2008)

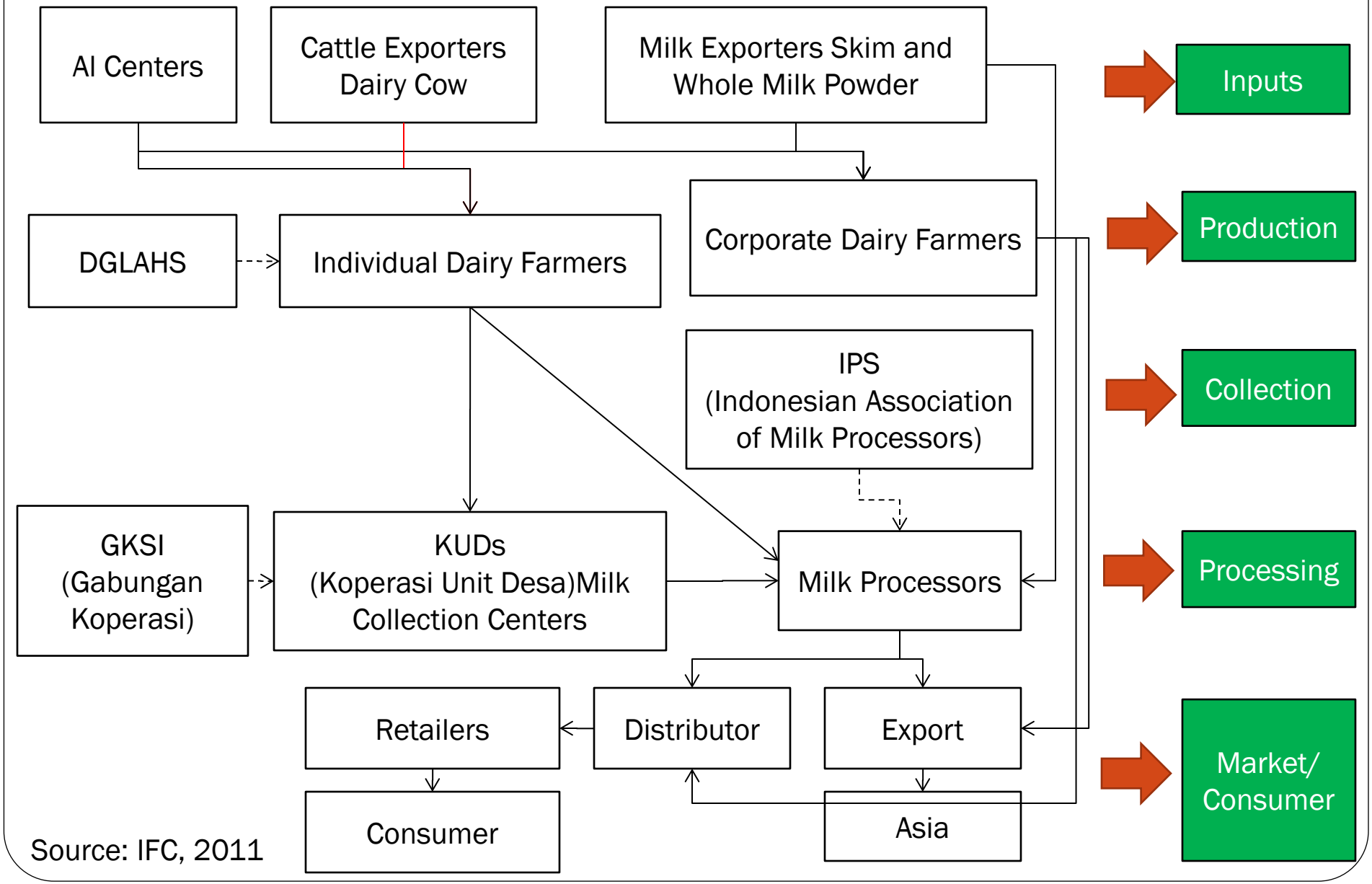
Figure 8. Development of Inclusive Business Models: Many terms – single objective



Source: van Duijn, 2014

Dairy Inclusive Business Models

Figure 9. Dairy Value Chain



Source: IFC, 2011

Figure 10. Key Sector Constraints Across the Value Chain

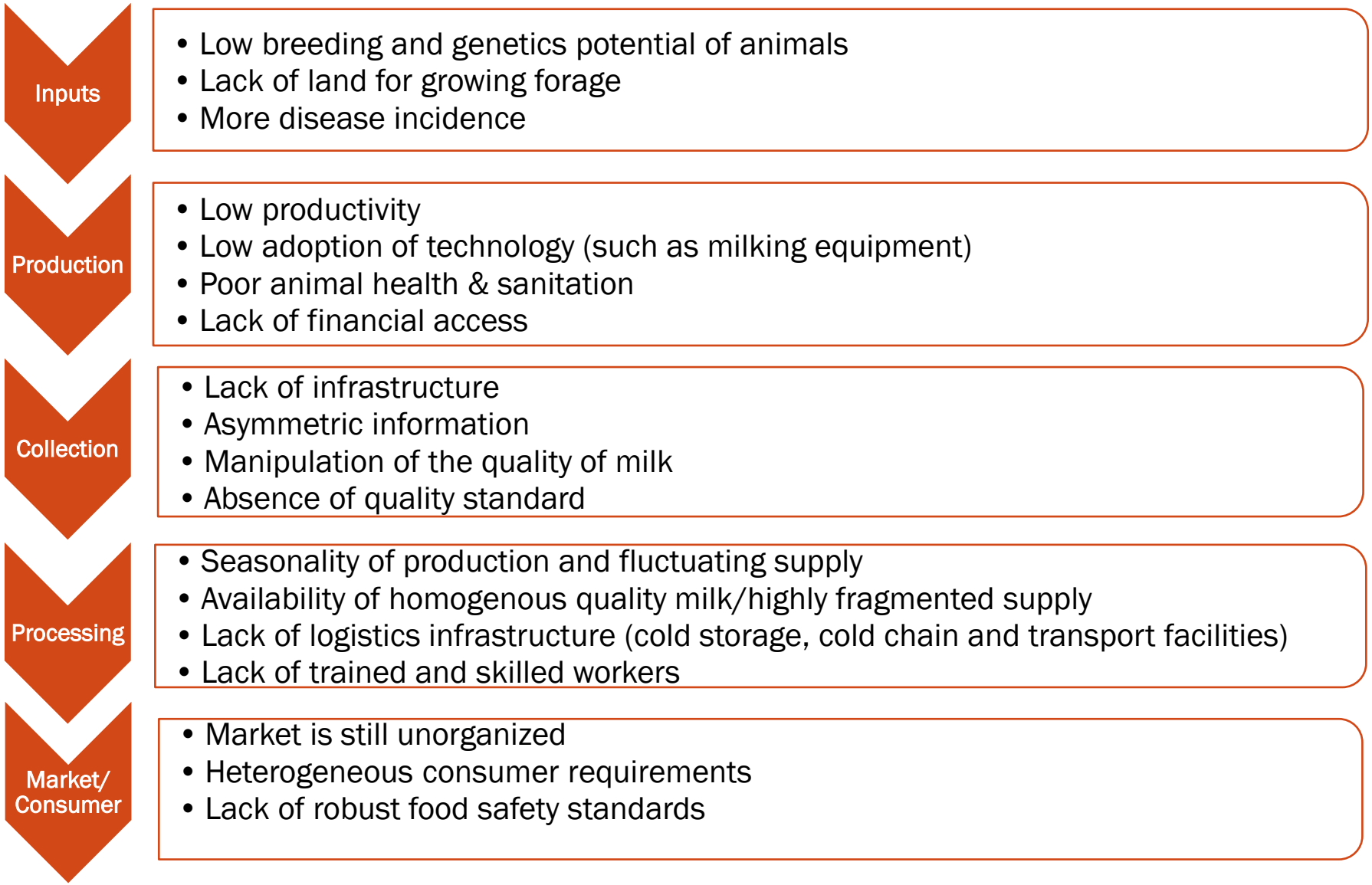


Table 3. Common Constraints and Opportunities in Dairy Sector Development

Constraints	Opportunities
Small farms and small volumes of raw milk supply	Strong market demand for milk: upscaling of farms
Underutilization of capacity of dairy plants	Start-up of professional processors
Inadequate transport facilities	Improve infrastructure: roads, transport and trade
Lack of testing facilities	Set up milk-testing laboratories
Insufficient cold-chain facilities	Investments in cold-chain equipment, storage and transport
Food safety and milk quality regulations absent or not enforced	Set up legislation and enforcement on food safety Quality assurance and quality-based payment systems
Weak cooperation within dairy chain	Set up institutions for collective improvement of quality and efficiency
Moderate technical and entrepreneurial skills	Training and education, Improve farmer entrepreneurship
Insufficient poor-quality fodder	Commercial feed and fodder supply with better inputs and services
Low reproduction rates	Improve young stock rearing Improve animal feed and supplements Improve animal health and veterinary services
Poor access to finance (& other services)	Improve finance facilities Improve regulations around collateral
Research and extension not tailored to needs of chain actors	Tailor-made practical training and extension Research and development, Training of trainers

Source: van der Lee and Westenbrink, 2014

Some Dairy Industry Inclusive Business Models

1. Cimory Model
2. Nestle Model
3. PisAgro Model
4. MAS Sukabumi Model
5. Gapoknak Sugih Mukti Mandiri Model

1. PT Cimory

- Development of local manufacturer of dairy products is a new feature of the industry. For example, the processor Cisarua Mountain Dairy or Cimory was established in 2006 as a subsidiary of Makro Group which aims to provide high quality dairy products using local content. Up until now, Cimory is still considered as a fully domestic dairy processor in Indonesia.
- The company has a specific focus to use domestic milk. They are able to process milk into Pasteurized Fresh Milk, Yoghurt Drink, Stirred Yoghurt, Set Yoghurt, Natural Cheese (Cheddar, Mozzarella), Processed Cheese, Fresh Cream and Butter products.
- However, the share of this manufacturer is relatively small at less than 1 per cent of production. Its share of the liquid milk market is 0.1 per cent (IFC, 2011).



Figure 11. Cimory Business Model

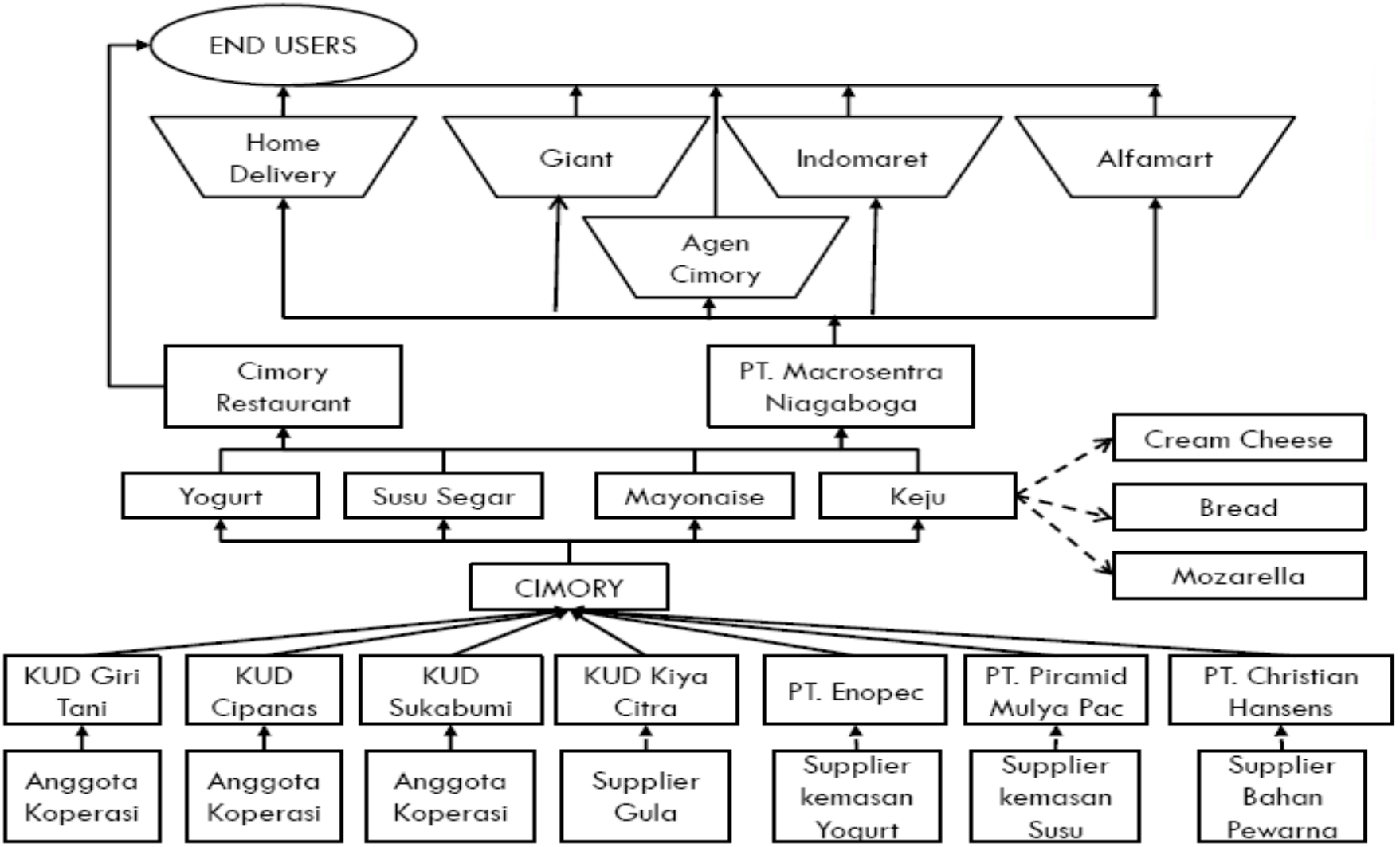
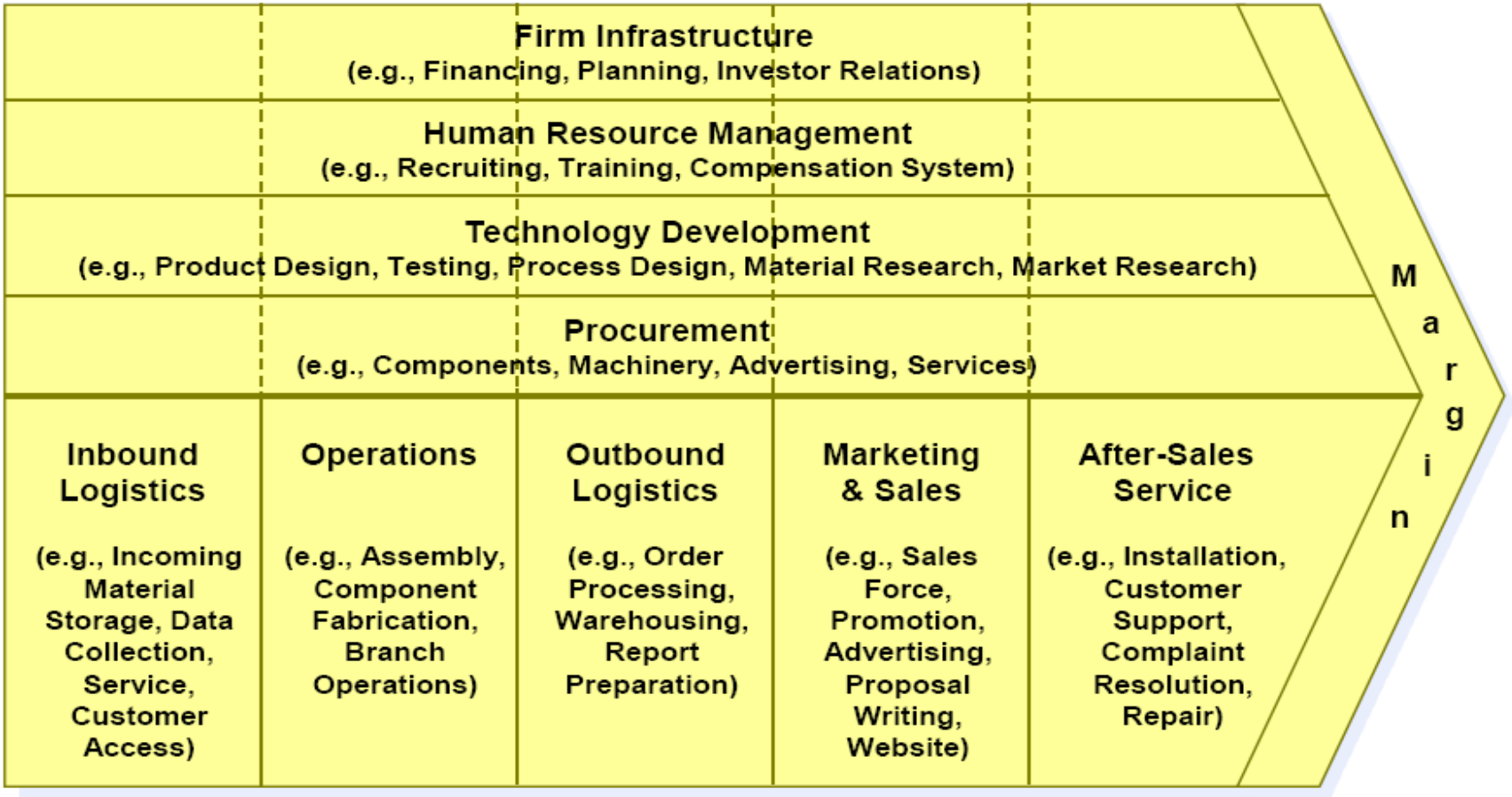


Figure 12. Creating Shared Value (CSV) Model

Source: Porter 2014

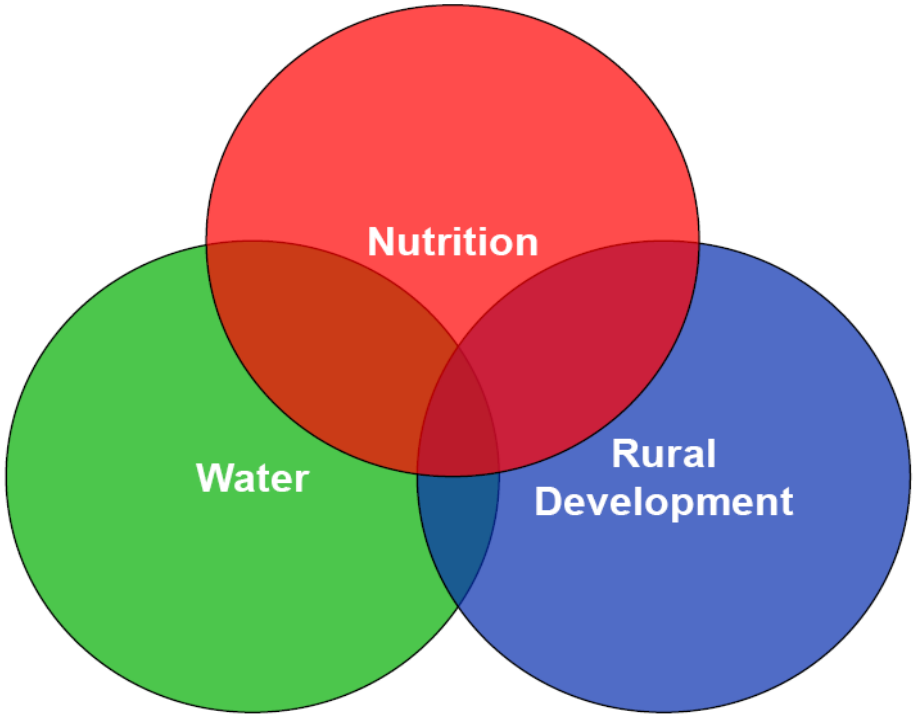
Figure 13. Creating Shared Value in the Value Chains



Source: Porter 2014

2. Nestle Model

Figure 14. CSV: Nestle



- Opportunities to create shared value are **inevitably tied closely** to a company's particular businesses

Source: Porter 2014

Figure 15. Collaboration Nestle with Dairy Cooperatives

Farmers organized in Dairy cooperatives.
Nestle support to Cooperatives through either technical of financial assistance

Support to improve the milk supply chain (milk collection and procurement activities), and to strengthen farmers viability (milk quality, feed & fodder, animal health, biogas)

Source : Nestle, 2013

Figure 16. Nestlé Milk Sourcing

Third Party fresh milk supply = Dairy farmers + Dairy cooperatives + Dairy factory

Dairy Cooperatives
Loans & Training & Control
Payroll
(Milk Procurement)

Dairy Farmers
Loans & Training
(Dairy Development)

- Cooperatives with >35K dairy farmers
- Commercial farms

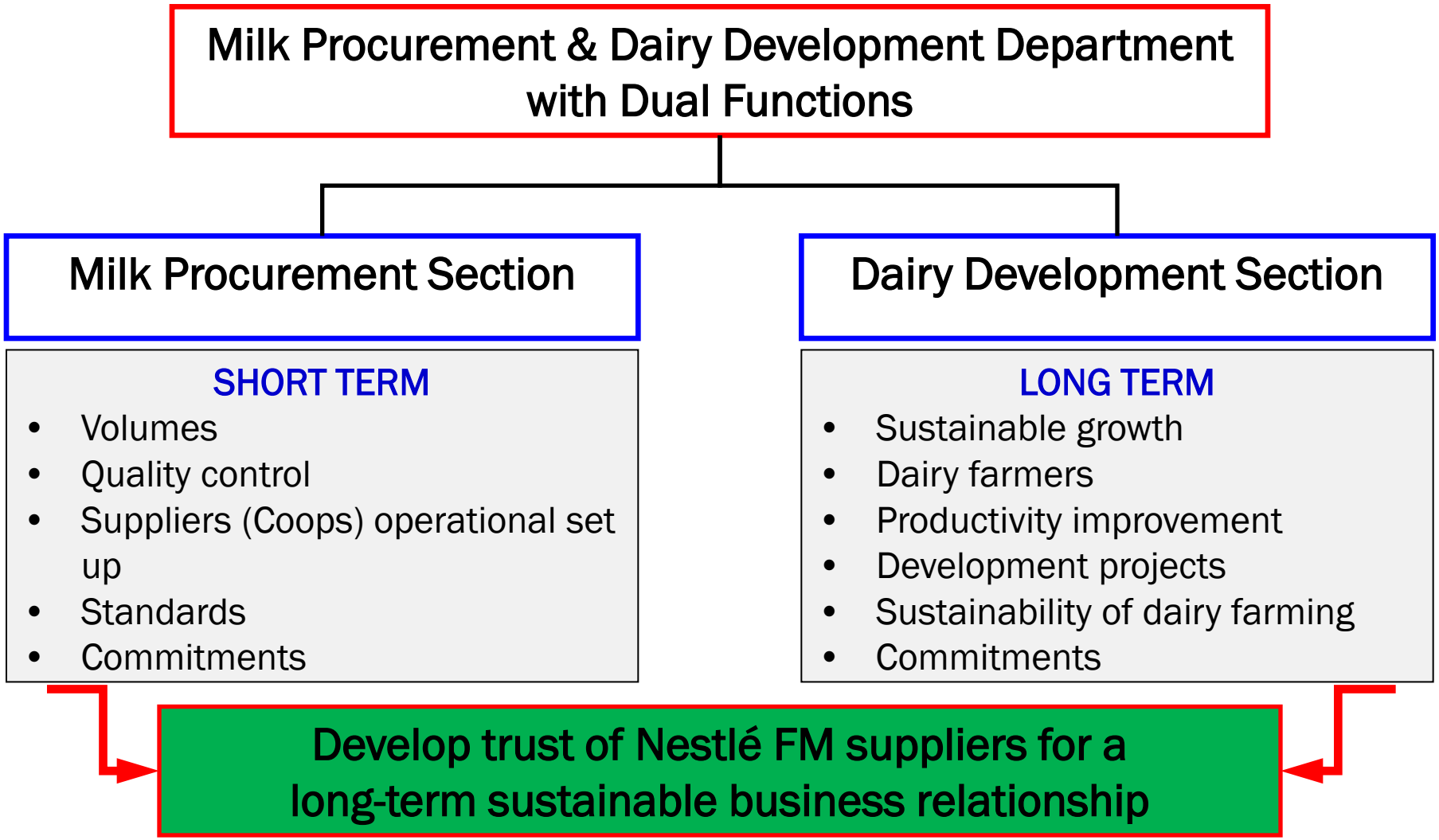
- >510 collection points
- >250 cooling centers
- >375 cooling units
- >85% direct cooling
- 2x collection/day

- Cooperatives owned
- 20-300 km distance to factory

- 24 hours fresh milk reception

Source : Nestle, 2014

Figure 17. Nestlé Milk Sourcing



Source : Nestle, 2014

Figure 18. Nestlé Milk Sourcing: CSV in Indonesia

3 major focus areas for long-term development

Technical support through a team of field professionals with relevant operational background: animal husbandry, veterinary sciences, agronomy

Variety of improvement programs aiming at increasing long-term sustainability performance of dairy Cooperatives & dairy farmers

MILK PROCUREMENT

➔ Focus: milk collection operational set-up

➔ Objective: fresh milk quality

- Improving **operational standards** (Nestlé standards, SOPs)
- Quality based payment system (**TPC base**)
- Investment programs (**credits**)
- Regular supplier operation audits (**compliance** with Nestlé standards & requirements)
- Facilitate import of critical equipment (**cooling tanks**)
- Suppliers yearly **competition**

DAIRY DEVELOPMENT

➔ Focus: sustainability of dairy farming

➔ Objective: cow productivity

- **Feed & fodder**: cultivation of improved fodder; silage; cattle feed formulation
- **Animal health**: mastitis prevention; deworming
- **Herd management**: recording (to keep track of performance of dairy cattle population); water availability
- **Competitiveness**: establish a network of dairy farmers for monitoring of cost of production (supporting pricing decision making process)

ENVIRONMENT

➔ Focus: water protection & renewable energy

➔ Objective: biogas

- Promotion of **biogas**
- Joint project with HIVOS, set-up of units in large scale
- Improvement of **cattle sheds**
- Investment programs

Source : Nestle, 2014

3. PisAgro (GrowAsia) WEF Model

- A national PPP platform (the government, global and local companies, farmers' organizations and civil society) established in June 2011.

- The partnership facilitates multi- stakeholder collaboration to enable sustainable and inclusive agricultural development in Indonesia focusing on the development of smallholder farmers and environmental sustainability of agriculture.

- Scale: farming and technical packages for 50,000 farmers to date.

- Impacts to date: 17-64% yield gain (dairy, corn and rice); adoption of sustainable farming; various pilot schemes of microfinance.

PisAgro (GrowAsia) Model

- **Rationales:**

75% of milk consumption in Indonesia is met by import. PISAgro's Dairy Working Group takes the initiative to double the fresh milk production through improving feeding ration by introducing corn silage as a better alternative forage. The group also promotes good farming practices and provides assistance to farmers in building and installing biogas system and thus bringing "green energy" into farmers' houses.

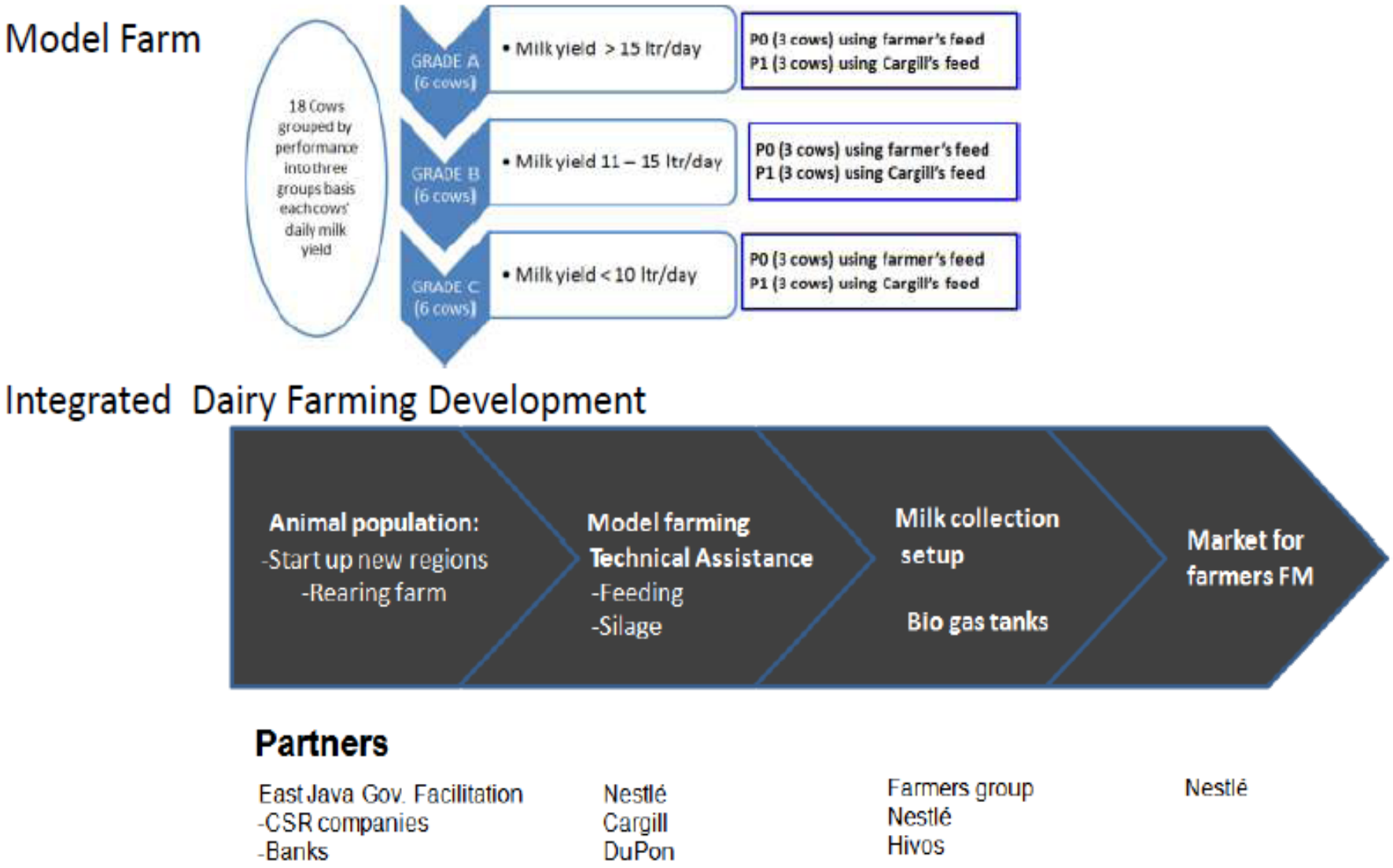
- **Goal**

In 2020, the group aims to work with 20,000 farmers, to increase their productivity by 79%, increase their income by 43% and reduce the GHG emission by 63,000tons/year.

- **Activities**

1,000 farmers have been trained in improved bovine nutrition. Result shows productivity improvement by 20%. The group has assisted 5,612 biogas system installment.

Figure 19. PisAgro Business Model



Source: WEF, 2014

4. Koperasi Mandiri Agro Satwa (MAS)

- The MAS inclusive business model is unique. The cooperative established in 2009.
- It has successfully upgraded its activities from traditional dairy farming to processing.
- The MAS members consist of 6 groups of farmers (117 local dairy farmers, 200 dairy cattle heads and 1 group of small processors with production of whole milk about 600 lt/day.
- Their products are yoghurt, pasteurized milk, *dodol* milk, milk candy, samosas, milk sticks and *bagelan.*

MAS Marketing Strategies

- *Gerimis Bagus Mandiri (Gerakan Minum Susus Bagi Anas usia Sekolah Secara Mandiri)* ➔ Self-funded Milk School Program
- *Gerimis Peri (Gerakan Minum Susu Pegawai Negeri)* ➔ Self-funded Milk Program for Local/District Public Employees
- Gerimis Pesta (Gerakan Minum Susu Pegawai Swasta) ➔ Milk Program for Private Employees
- Gerimis Kawin (Gerakan Minum Susu Bagi Karyawan Industri) ➔ Milk Program for Industrial Employee
- *Gerobak Susu/Tenda Susu*
- Regular Workshops of Dairy Development Program for Farmers

Figure 20. MAS Marketing Strategies

Figure 21. MAS Marketing Strategies

5. Gapoknak

Figure 22. Business Model Gapoknak Sugih Mukti Mandiri Subang Winner of 2014 Competitive Product Award in Livestock Products, Ministry of Agriculture 2014

Products : 1. Liquid Milk *(Pasteurisasi)*
2. Yogurt & Yogurt Sticks
3. *Kerupuk Susu*
4. *Puding*

Gapoknak is able to pay higher prices to dairy farmers as its business model is based on the production of higher value added dairy products

Government Policies in Improving the Indonesian Dairy Transformation

Government Policies in Improving the Dairy Transformation in Indonesia:

- Human resource and institutions development
- Increasing the number of population and productivity
- Quality and hygiene assurance
- Price and welfare of the farmers
- Increasing fresh milk consumption, and
- Improving the infrastructures

Figure 23. Generalized Theory of Change for Dairy Sector Development

Goal	Competitive and developed dairy sector			
Changes at impact level:	*Increased farmer income Growth in rural economy*	*Food security Nutrition security*	*Food safety Self-sufficiency*	*Reduced environmental impact*
Objectives	Competitive dairy production	Developed dairy chains	Developed knowledge base	Developed organization and representation of the dairy sector
Changes at performance level not specified				
	Improve / strengthen:			
Strategies	Access to finance for milk producers	Linking producers in rural areas with processing industry and markets	Research and innovation	Producers' organizations
	Public and private investments in physical infrastructure (water, roads, electricity)	Inclusion of small scale milk producers to formal dairy chains	Education	Dairy sector organizations
	Policies supporting competitive dairy production	Increase rural milk processing and marketing (informal)	Farm and industry advisory services	Chain actor representation and coordination
	Policies related to food safety and implementation of regulations	Improve dairy marketing and consumption in urban areas	Knowledge on dairy production in supporting institutions (finance, government etc)	Public-private partnerships
	Land reform	Improve input and service supply to dairy producers		
		Implementation of improved food safety and quality standards		
		Improve investment climate in dairy sector		
Example interventions	Fodder introduction	Develop collection grid and business cluster	Business development services for producers' organizations and SMEs	Crossbreeding program
	AI service	Develop B2B linkages	Farmer advisory service	Disease surveillance
	Dairy zone development	Investment fund	Innovation coaching and funding, co-innovation	Land titling
	Medium-sized farm development	Quality-based milk payment system	Dairy network development	Independent milk testing laboratory
	Soil fertility management management	Producers' organization capacity building	Business-linked vocational training	
	Training young-stock rearing			

Source: Van der Lee et. al, 2014

THANK YOU

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