Dairy Development in Thailand

Dairy Production Sub-system

Backward linkages

Dairy Technology, Inputs & Services Sub-system

Forward linkages

Dairy Processing, Distribution & Marketing Sub-system

Complexity of the socio-economic, historical, institutional and political environments

Dairy Farmers
- marginal and small farmers,
- Commercial dairy farms,
- Other milk producers

Dairy R&D
- Universities, Private sector, NGOs, etc.

Dairy Support Infrastructure
- Government, NGOs, rural roads, electricity, Private Sector, etc.

Dairy Input
- Veterinary services, animal breeding services, animal feed, dairy farm machinery & equipments, etc.

Dairy Services
- rural financial institutions, livestock insurance companies, NGOs, etc.

Cooperatives/NGOs
- Milk collection centres, chilling centres, milk processing plants, etc.

Organized Private Sector
- Milk collection centres (own and contracted), dairy processing plants, cold storages, etc.

Traditional Sector
- Small and large milk collectors, creameries, sweet and tea shops, etc.

Importers, Wholesalers, Retailers, Supermarkets, etc.

Domestic & Export Markets

Source: Smallholder Dairy Development Program in Thailand, Myanmar and Bangladesh

Thailand Dairy Industry Structure
Area: 513,115 km²
- 47% Agriculture
- 33% Forest
Population: 66.7 million
Temperature: 18 – 34 °C
Season - Summer: Feb. to Apr.
  - Rainy: May to Oct.
  - Winter: Nov. to Mar.
Rainfall: 1,500 mm.

Dairy Production in Thailand

Dairy Development in Thailand

- **1910**: Dairy farming introduced
- **1960**: Royal visit of H.M. the King to Denmark
- **1961**: Technical cooperation between Denmark and Thailand signed
- **1962**: Inauguration of Thai-Danish farm in Saraburi
- **1992**: School milk programme launched
- **Present**: Continuing support of the Government (DLD and DPO) and Public-private partnership

Dairy Production in Thailand

Zoning for dairy production in Thailand

- Existing 35
- Suitable 14
- 16 UHT 68 PASTEURIZED
### Number of dairy cows in Thailand

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cows</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>408,350</td>
</tr>
<tr>
<td>2005</td>
<td>478,836</td>
</tr>
<tr>
<td>2006</td>
<td>410,986</td>
</tr>
<tr>
<td>2007</td>
<td>489,593</td>
</tr>
<tr>
<td>2008</td>
<td>469,937</td>
</tr>
<tr>
<td>2009</td>
<td>529,572</td>
</tr>
<tr>
<td>2010</td>
<td>560,659</td>
</tr>
<tr>
<td>2011</td>
<td>577,841</td>
</tr>
<tr>
<td>2012</td>
<td>512,283</td>
</tr>
<tr>
<td>2013</td>
<td>508,548</td>
</tr>
<tr>
<td>2014</td>
<td>hectares</td>
</tr>
</tbody>
</table>

- Number of dairy farmers: 16,634 (31 cows/farm)
- Number of cows in milk: 236,865

### Raw milk in Thailand: Ton/Day

<table>
<thead>
<tr>
<th>Year</th>
<th>Raw Milk (Ton/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2,314.32</td>
</tr>
<tr>
<td>2009</td>
<td>2,650.53</td>
</tr>
<tr>
<td>2010</td>
<td>2,315.62</td>
</tr>
<tr>
<td>2011</td>
<td>2,922.07</td>
</tr>
<tr>
<td>2012</td>
<td>3,189.91</td>
</tr>
<tr>
<td>2013</td>
<td>3,019.93</td>
</tr>
</tbody>
</table>

Average 2008-2013: 2,751 +12.3%

2013 Milk yield = 12.3 liter/cow/day

### Dairy Farm Management

#### 1. Genetic Improvement

- Use upgrading native cows
- Produced crossbreed Tropical HF contain 82.5-93.75 % HF
- Use A.I. ~100 %
2. Feed Management

Roughage
- Mainly: natural grass, rice straw, corn stem from sweet corn industry, corn husk
- Insufficient and low quality (protein content) especially in dry season

Concentrate
- According to low quality of roughage, farmers use high amount of concentrate
- Mostly use commercial feed and supplement raw materials from factories e.g. beer residue, rice bran, cassava byproduct and palm cake
Many medium and large scale farms use TMR feed

**Milk quality control**

- Co-op or Farmer group set up milk collection center with basic lab.
- Collect fresh milk from members: morning & afternoon
- Sampling every churn for release
- Quality check for payment 2/month
- Chilled (PHE) & stored in tank (<4°C)
- Antibiotic check before loading
- Transported by milk truck (<5°C)

**Quality control at farm**

- Ensure good hygiene on farm
- Good milking practice
- Milking machine check & maintenance
- Milking bucket enough to milking cow
- Avoid Antibiotics and contaminants in milk
- Send fresh milk to Milk collecting center as fast as possible
Quality control at milk collection center

Quality for release
- Appearance
- Alcohol test 75%
- Density

Quality for payment
- Total Solid
- TPC, MBRT
- Somatic cell

Antibiotic
- Test kit
- Delvo test (before loading)

Quality control at milk factory

Sampling of raw milk
- Stir milk 25 times using Plunger (each compartment)
- Take sample from each compartment after finished stirring

Food safety management in dairy industry
Dairy marketing in Thailand

Dairy products reach to consumers through retail market or food services

Ratio of fresh milk usage 2013/2014

- 60% to Retail market
  - Tradition trade i.e. wet market, grocery stores
  - Modern trade i.e. supermarkets, convenience stores, cash & carry stores and department stores
- 40% to school milk program
Milk Board
Established since 2008, consisting of 25 members;
- Government Body (14)
- State Enterprise (1)
- Farmer Rep. (5)
- Business Rep. (5)
Sub-Committee under Milk Board
1. Milk Standard
2. Milk Price
3. Milk Campaign
4. School Milk
5. Milk Management
6. Skim Milk Powder Quota

Fresh milk requirement 2013/2014
Total fresh milk in country = 3,102 tons/day

Exports of Thai livestock products by types, 2013

School Milk Programme in Thailand
**School Milk Programme - Today**

- **Products**: Fresh and white milk only (liquid milk)  
  - Local raw milk
- **Distribution**: 50% PPP (actual ~60%)  
  - 50% UHT carton (actual ~40%)

**Pasteurized**
- 72 manufacturers
  - Chilled
  - 16% lower price
  - Empower MPOs / cooperatives

**UHT**
- 11 manufacturers
  - Convenience
  - Long-shelf life
  - Food safety
  - Lower logistic cost

**School Milk Programme - Today**

- **Budget**: ~500 million USD/year  
  (100% government support)
- **Students**: ~8 million students  
  - Pre-school, Kindergarten 1 – Grade 6
  - Government and private schools nationwide
- **Raw milk**: 1,267 tons/day used (out of 3,102 tons)
- **Improvement**:
  - Malnutrition dropped to less than 5% in 2006
  - Height increased at 5 cm. a year compared to 2-3 cm at the 1st year

**Dairy Farming Promotion Organization of Thailand (D.P.O.)**

**Dairy products in Thailand**

[Images of dairy products]
Chiangmai Freshmilk Co., Ltd.
E-mail: chiangmaifreshmilk@yahoo.com

Dutch Mill Co., Ltd
www.dutchmill.co.th

Pasteurized Yoghurt Drink “Dutch Mill”
Pasteurized Yoghurt Drink “Delight”
UHT Yoghurt Drink “Dutch Mill”

Dutch Mill Co., Ltd
www.dutchmill.co.th

Pasteurized Cup Yoghurt “BIO”
Pasteurized Cup Yoghurt “Dutchie”
Pasteurized Milk “Dutch Mill Selected”
Choco Malt Drink Chocolate Flavour “DMALT”

http://www.cpmeiji.com
Future of dairy sector in Thailand

- Optimize the cost-benefit of dairy farmer (reduce the cost of production)
- Improve a quality of milk at farm and milk collecting center (GAP, GMP)
- Increase the production of domestic dairy products (i.e. cheese)
- Increase the dairy market domestically and internationally
- Extend the South-South cooperation on dairy sector development in the Region
- Smart farmer and green farm

Thank you for your attention