Competitive Dairy Value Chains in Southeast Asia

Dairy Expert Roundtable Meeting
December 8 & 9, 2010,
Muak Lek, Thailand

Editors:
Linda Haartsen
Jan van der Lee
Bram Wouters

Part II: PowerPoint Presentations
The Centre for Development Innovation (CDI) works on processes of innovation and change in the areas of secure and healthy food, adaptive agriculture, sustainable markets and ecosystem governance. It is an interdisciplinary and internationally focused unit of Wageningen University and Research Centre within the Social Sciences Group.

Through facilitating innovation, brokering knowledge and supporting capacity development, our group of 60 staff help to link Wageningen UR's expertise to the global challenges of sustainable and equitable development. CDI works to inspire new forms of learning and collaboration between citizens, governments, businesses, NGOs and the scientific community.

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The organization of the Dairy Expert Meeting was a joint effort. The following organizations worked together with Wageningen UR to make the meeting a success:

- Innovation & Change
- Ecosystem Governance
- Adaptive Agriculture
- Sustainable Markets
- Secure & Healthy Food

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Competitive Dairy Value Chains in Southeast Asia – Part II
Dairy Expert Roundtable Meeting, December 8 & 9, 2010, Muak Lek, Thailand

Editors:
Haartsen, L.
Lee van der, J.
Wouters, A.P.

January 2011
Centre for Development Innovation, Wageningen University & Research centre

The regional Dairy Expert Roundtable Meeting on “Competitive Dairy Value Chains in Southeast Asia” provided a forum for participants from six Southeast Asian countries to discuss how dairy value chains in this region can become more competitive and sustainable. The demand for dairy products in these countries is increasing steadily. Countries rely more and more on imports. Inefficiencies in the chain, low productivity, quality issues, as well as institutional obstacles make locally produced dairy products less competitive. International developments, national policies and experiences, lessons learned, and challenges in the value chain were presented and discussed during the meeting. Many countries in the region face similar challenges. Solutions depend much on the local context. Better exchange of experiences and knowledge among the Southeast Asian countries can contribute to more efficient local dairy value chains.

This document, Part II, contains the PowerPoint presentations from the workshop and is an annex to the main report of the meeting.

Projects BO-10-010-104, ‘International Centre for Cattle Husbandry’, and BO-10-010-117, ‘Sustainable dairy chains’

This research project has been carried out within the Policy Supporting Research for the Ministry of Economic affairs, Agriculture & Innovation, Theme: Chains of sustainable products, cluster: International Cooperation.

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Competitive Dairy Value Chains in South East Asia
Dairy Expert Round Table Meeting
Muak Lek, Thailand, December 8 & 9, 2010

Mr. Bram Wouters
Wageningen UR Livestock Research

Content of the presentation

- Introduction
- Some characteristics dairy production in SE Asia
- World wide drivers and trends and their implications for South East Asia
- Conclusions

General characteristics in SE Asia

- No long tradition in milk production and dairy consumption
- Milk mainly produced by small holders
- Industrialized milk processing based for a large part on import
- Formal and informal marketing channels
- Level of market protection and support of government varies

Small scale dairy farm Indonesia

Medium scale dairy farm in Thailand
Some figures (IFCN, 2010)

<table>
<thead>
<tr>
<th>Country</th>
<th>Milk Product * 1,000 t</th>
<th>Cons. L per capita/year</th>
<th>Milk price US $/litre</th>
<th>Farmers share of cons. price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>830</td>
<td>20</td>
<td>0.47</td>
<td>44</td>
</tr>
<tr>
<td>Indonesia</td>
<td>670</td>
<td>10</td>
<td>0.37</td>
<td>--</td>
</tr>
<tr>
<td>Malaysia</td>
<td>60</td>
<td>34</td>
<td>0.58</td>
<td>30</td>
</tr>
<tr>
<td>Vietnam</td>
<td>27</td>
<td>11</td>
<td>0.43</td>
<td>41</td>
</tr>
<tr>
<td>Philippines</td>
<td>14</td>
<td>14</td>
<td>0.54</td>
<td>38</td>
</tr>
</tbody>
</table>

Milk prices in 2008 in US $ (source: IFCN)

World wide drivers for dairy development

- **Increased demand for dairy products**
  - Population growth
  - Income growth & urbanization → changing food patterns and supermarkets

- **National interests**
  - Food security
  - Import substitution or export (foreign exchange position)
  - Diversification agriculture

- **Rural development**
  - Food security and improved nutrition
  - Income generation & extra employment opportunities
  - Regular income source for daily needs

Content of the presentation

- Introduction
- Some characteristics dairy production in SE Asia
- World wide drivers & trends and their implications for South East Asia
- Conclusions
Dairy trends – Policy related trends

- Less market protection (WTO, FTA’s)
- More emphasis on self-sufficiency in food
- Emphasis on sustainability (climate change, energy)
- Less government support - privatization of services

- More fluctuating world market prices:
  - World market price
    - 2009: 26 US$/100 kg
    - April 2010: 43 US$/100 kg

- More emphasis on self-sufficiency in food
- Emphasis on sustainability (climate change, energy)
- Less government support - privatization of services

Rate of self sufficiency in dairy products, 2008 (IFCN)

Sustainability of dairy value chains

People, Planet and Profit (3P):
- Social sustainability: People
- Environmental (ecological) sustainability: Planet
- Economic sustainability: Profit

More emphasis on self-sufficiency in food
- Emphasis on sustainability (climate change, energy)
- Less government support - privatization of services
What are the implications for South East Asia?

Less market protection - Issues & options

Issue:
- Level of market protection decreases due to FTA's

Options:
- Create a more competitive local chain
  - Lower cost price (feeding costs)
  - Increasing scale of production (requires more land)
  - Higher chain efficiency (transaction costs, quality)
  - More value out of local milk: branding of “fresh” milk

Less government - Issues & options

Issues:
- Privatization of services
- Transition of government role from actor to facilitator, regulator and supervisor

Options:
- Capacity building private sector to take over services
- Define responsibilities and roles of government/private sector
- Development of government instruments to facilitate

Improving Sustainability - Issues and options

Social issues:
- Inclusion of small holders into modern dairy chains
- Animal welfare: heat stress, housing

Options:
- Development of value chains, producers organisations
- Improvement of farm management and farm designs

Ecological issues:
- Nutrient flows and recycling (waste management)
- Higher productivity and better use of resources (feed, soil)

Options:
- Improvement of farm management

Economic issues: competitiveness/profitability

Options:
- Lower cost price and higher efficiency at farm level and in chain

Manure handling needs improvement

Dairy Trends - Market

- Increase in scale of production and processing

Value Chain Development
- More value out of milk,
- Vertical integration: from farm to supermarket

Emphasis on food safety and standards
### Increase scale of production in Netherlands

<table>
<thead>
<tr>
<th>Year</th>
<th>Netherlands 1970</th>
<th>Netherlands 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farms with dairy cows</td>
<td>116,000</td>
<td>21,000</td>
</tr>
<tr>
<td>Total number of cows</td>
<td>1,900,000</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Number of cows per farm</td>
<td>16</td>
<td>65</td>
</tr>
<tr>
<td>Area of grassland + longe crops per farm (Hectares)</td>
<td>13</td>
<td>39</td>
</tr>
</tbody>
</table>

### Dairy Trends - Market

- Increase in scale of production and processing
- **Value Chain Development**
  - More value out of milk,
  - Vertical integration: from farm to supermarket
- Emphasis on food safety and standards

### Value chain development means:

- Taking the market and/or development of the market as starting point
- Cooperation and coordination among actors in the chain to increase added value and quality
- Taking sustainability as a condition for development
- Adopting an integral approach when developing the chain
- Taking as starting point the development stage at local level

### Value chain development – Issues and options (1)

- **Issues:**
  - Distribution of added value in the chain
  - Lack of coordination, cooperation in the chain
  - Low efficiency-reduction of transaction costs
  - Input and service provision to farmers
- **Options**
  - Improve the organisational level of actors
  - Develop better linkages among actors in the chain
  - Improvement of milk collection systems

### Dairy Trends - Market

- Increase in scale of production and processing
- **Value Chain Development**
  - More value out of milk,
  - Vertical integration: from farm to supermarket
- Emphasis on food safety and consumer

### Total Chain Quality Management and Chain approach

- **Suppliers**
- **Farmers**
- **Collection**
- **Dairy industry**
- **Distribution**
- **Retail**
- **Authorities**
- **Consumer**
Control of quality of raw milk and dairy products

Food safety – Issues and options (2)

Issues:
- Improvement of raw milk quality and quality control at different stages in the chain

Options:
- Quality based payment systems
- Improvement of farm management and advise/services to farmers
- Self regulation of quality control with supervision of government

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Which approach to take for development?

Lessons learnt from other countries/ experiences indicate:
- Dairy development needs an integrated approach
  - For example: a value chain approach
- Possible options for development should take into account the local context
- Stepwise development is more sustainable

Conclusion

- Dairy development with a value chain perspective opens opportunities to address issues in an integrated way
- Development of a value chain approach will lead to more cooperation, quality improvement and added value
- A value chain approach could lead to better inclusion of small holders in modern chains
- Dairy production in SE Asia will have a future BUT requires more competitive and sustainable milk production and a good enabling environment

Thank you for your attention
Dairying in Asia: Opportunities, challenges and some lessons

Vinod Ahuja
Livestock Policy Officer
Food and Agriculture Organization of the UN
Regional Office for Asia and the Pacific
Bangkok

Growth in global dairy production:

With Asia leading the way

Consolidating its global position in milk production

Within Asia

Main contributors...
But wide range of growth rates...

Consumption constantly outpacing production

Yet tremendous room for consumption growth

What about productivity?

Wide variation across countries

Huge opportunities for

- Productivity gains
- Quality gains
- Substituting imports
- Spreading risks, improving competitiveness
- Protecting environment through mixed/integrated farming
- Nutrition, income, jobs . . .
Continuing strong positive outlook for global dairy industry but increased volatility in international prices

Rapidly declining common resource base and growing feed costs

Increasing environmental concerns and enforcement

Increased consumer demand for food safety, convenience, quality

Growing intensity and pressure to intensify and scale up livestock systems for higher outputs per unit of land/water/labour

Despite rapid growth and scaling up smallholder continue to produce over 90 percent of local milk marketed in Asia

India: 70 million households have dairy cattle, 52 million linked to smallholders (13 million to coops).

China: 2 million dairy farms in 2005 with farms < 20 cows accounting for 65% of milk production.

Philippines: 13,000 families engaged in smallholder dairy with employment of 17,000.

Pakistan: 55 million smallholders

Mongolia: 2 million farmers in 2006 (80% hold dairy cattle).

Sri Lanka: 70% of 3.5 million smallholder own dairy cows.

Bangladesh: 80 million households are smallholder dairy farmers.

Smallholder dairy critical to rural sectors

Philippines: Dairy Development Zones (targeted development based on priority indicators).

Pakistan: Haleeb case (private sector linkages to smallholder holders)

India: Anand model linked to Operation Flood activities.

Thailand/Bangladesh: strong role of cooperatives (supported by development interventions)

Sri Lanka: an example of very limited support for dairy until recently

China: Inner Mongolia/Heilongjiang examples of third-part milk collection stations; dairy barns, private sector investment linkages to smallholders.

Vietnam: strong dairy development through government support (down to local levels) supported by privatization of markets

Mongolia: total cow to consumer approach; strong socio-cultural aspects, each link in dairy chain has to be sustainable and profitable; generic branding/marketing

Lessons learned case studies and regional strategy and investment plan for smallholder dairy development in Asia

Philippines: Dairy Development Zones (targeted development based on priority indicators).

Pakistan: Haleeb case (private sector linkages to smallholder holders)

India: Anand model linked to Operation Flood activities.

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Mongolia: total cow to consumer approach; strong socio-cultural aspects, each link in dairy chain has to be sustainable and profitable; generic branding/marketing
India

Pakistan

Sri Lanka

Philippines

Mongolia

Thailand

1995: Creation of national dairy authority
1995-2000: Experimentation with large commercial dairy farms
2001: Launch of dairy zone model
What are some general lessons?

Some lessons from FAO studies

- Industry institutions and smallholder groups (associations, cooperative etc) can have a pivotal role in supporting dairy development (India, Philippines, Thailand)
- Creative and carefully thought out linkages with private sector (which includes technical assistance, financial support) can allow smallholder to move up into a different marketing chain (Philippines, Pakistan)
- Smallholders need an accessible and affordable complete package of support services (animal health, breeding, extension, finance, etc) to produce milk competitively (Bangladesh, India, Mongolia).
- Milk quality and attractive product branding/presentation are pre-requisites for persuading modern urban consumers to switch from imports to milk produced by local smallholders (China, India, Mongolia, Philippines)
- Low tariff regimes facilitating importation of cheap dairy products have hampered development of local dairy industry

Key strategic pillars

- Human resources and knowledge management
- Productivity and competitiveness
- Market linkages
- Enabling environment
FAO-CFC-APHCA partnership

Elements of the CFC proposal
- Country coverage
  - Thailand, Myanmar and Bangladesh
- Three components
  - Milk Production Enhancement
  - Milk Marketing Enhancement
  - Capacity Building and Information Dissemination
- Duration: 4 years

Elements of the FAO proposal on school milk
- Country coverage
  - Thailand, Myanmar and Bangladesh
- The components
  - Review of school milk programmes
  - Design and/or strengthen school milk programmes with a targeting of schools in more rural areas
  - Assess alternative and innovative funding options for financing school milk programmes
  - Link the development of these local programmes with opportunities for smallholder dairy participation
  - Support the development of SMEs for manufacturing and packaging range of semi-value added dairy products
- Duration: 2 years

Elements of the APHCA proposal on Asia Dairy Network
- Country coverage
  - All APHCA countries
- The components
  - Creation of an information and knowledge network
  - Creation of a demand driven dairying group with a membership base that included dairy firms, dairy institutions, producer organizations, dairy research organizations, and other concerned regional and international partners
- Duration: 4 years

Thank you
THE ROLE OF GOVERNMENT IN DEVELOPING DAIRY VALUE CHAIN

Bess Tiesnamurti and Yeni Widiawati

Dairy Expert Roundtable Meeting, Muak Lek, 8-9 December 2010

Indonesia Centre for Animal Research and Development, Agency for Agriculture and Development, Ministry of Agriculture

Current situation of dairy cattle farms in Indonesia

- Dairy cattle population increased by 33.79% during the last 5 years and milk production increased by 7.7% per year (total population of 450,000 heads).
- However, national milk production (4 million tonnes) only provide approximately 30% of total national milk demand (1.2 million tonnes) and about 70% of the demand still imported (mostly from Australia and New Zealand).
- 87% of dairy farm is smallholder farmers and 13% is middle to industrial farms.

Low productivity of dairy cattle is mostly due to traditional management applied in small holder farmers (feed availability, management at early age, mastitis sub clinical, barn hygiene and sanitation).

Dairy cattle farms mostly (98.7%) located in Java island and 1.3% in other island of Indonesia (North Sumatera, Bengkulu, Jambi, Lampung, Riau, West Kalimantan, Sulawesi, Bali).

Milk Processing Industry (IPS) is a single market for milk produced by the farmers. Almost 80% of national milk produce is purchased by IPS. And only 20% directly sale to the consumer, Thus the price of milk is depend solely on the IPS as a single buyer.

Many dairy technologies on management of feeding, reproduction as well as milk processing procedures are available by research institutes and universities.

However the rate of technology adoption by small holder farmer are still very low.

Many local feed sources potentially for dairy cattle are still exported.

Government role on dairy cattle industry:

1. Coordination with GKSI (Indonesian Milk Cooperation Organization) and department of education to create milk market directly to the students
2. Through P2HP (Directorate General of Agriculture Processing) built facilities for milk processing in many milk collecting unit closed to the farmers.
3. Training and education for farmers on dairy farming management, milk processing and market.
Some proposed solutions:

- Government should issue regulation to limit export quota for local feed sources.
- Government should issue a regulation to support the using of Forestry land by farmers for feed supply.
- Government should issue regulation to create alternative market for milk, one example of market is students started from preliminary school to high school, or to offices and universities.
- Dairy rearing management program to increase the number of cows.

b. Local government has to provide some training and education regarding management of dairy farming to local people. Some successful farmers in Java must be transferred to other island to assist the development of the dairy farming in selected provinces.

c. Government had to transfer some dairy cows to Sumatera island to support development of dairy industry.

There are two proposed scenarios in expanding of dairy farming to other island:

- Selecting an area, then built the dairy farming industries. Local government has important role in this scenario.
- Other scenario is students started from preliminary school to high school, or to offices and universities.

Conclusion:

- Dairy cattle in Indonesia still has potential to be developed, particularly in other island of Indonesia (Sumatera, Kalimantan, and Sulawesi).
- Support of National and local governments are required in expanding the dairy cattle industry in other islands.
- Some important regulations must be issued by Central Government to protect the exodus of local feed sources.

Pictures of dairy activities:

- Images of dairy activities.
- Images of dairy farms.
- Images of milk processing.
- Images of dairy farming education.
- Images of dairy cows.
TERIMA KASIH

THANK YOU
The role of government in developing the dairy value chain

SINCHAI RUENGPAIBUL
Dairy Extension Expert
Department of Livestock Development
THAILAND

Main Focus
- Raw milk management
- School milk program management
- Quota and tariffs on imported SMP management

Table 1.1: Dairy cattle population from 2008 - 2009

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of dairy cattle (head)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calves</td>
<td>Heifers</td>
</tr>
<tr>
<td>2008</td>
<td>122,274</td>
<td>94,422</td>
</tr>
<tr>
<td>2009</td>
<td>115,113</td>
<td>99,833</td>
</tr>
</tbody>
</table>

Table 1.2: The distribution of dairy farms and dairy cattle in different regions (2009)

<table>
<thead>
<tr>
<th>Region</th>
<th>% No. of farms</th>
<th>% No. of dairy cattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>68.62</td>
<td>68.80</td>
</tr>
<tr>
<td>North Eastern</td>
<td>20.87</td>
<td>20.93</td>
</tr>
<tr>
<td>Northern</td>
<td>9.51</td>
<td>9.56</td>
</tr>
<tr>
<td>Southern</td>
<td>1.00</td>
<td>0.71</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 1.3: Percentage of dairy cattle in different HF%  

<table>
<thead>
<tr>
<th>Breed</th>
<th>Dairy population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friesian (HF %)</td>
<td></td>
</tr>
<tr>
<td>62.5 % HF</td>
<td>4.7</td>
</tr>
<tr>
<td>75 % HF</td>
<td>16.7</td>
</tr>
<tr>
<td>87.5 % HF</td>
<td>48.2</td>
</tr>
<tr>
<td>95.75 % HF</td>
<td>20.2</td>
</tr>
<tr>
<td>100 % HF</td>
<td>1.0</td>
</tr>
<tr>
<td>Other breeds</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 1.4: Total milk production from per year and per day from 2007 - 2009  

<table>
<thead>
<tr>
<th>Year</th>
<th>Milk Production per year (Tons)</th>
<th>Milk Production per day (Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>750,778</td>
<td>2,056.92</td>
</tr>
<tr>
<td>2008</td>
<td>775,666</td>
<td>2,123.66</td>
</tr>
<tr>
<td>2009</td>
<td>889,043</td>
<td>2,435.73</td>
</tr>
</tbody>
</table>

Milk market value in Thailand 2008  

- Milk market value: 850 mil. USD

Imported milk products 2008 (602.2 mil.USD)

Export milk products 2008 (182 mil.USD)

Thank you
THE ROLE OF THE GOVERNMENT IN DEVELOPING THE DAIRY VALUE CHAIN IN VIETNAM

Dr. Do Kim Tuyen
Department of Livestock Production - MARD - THAILAND - DEC. 2010

I. INTRODUCTION


BECAUSE

- Vietnam had a big change in agricultural development, from a food deficit nation to an agricultural export country.
- Nevertheless, every year Vietnam imported about 90% of powder milk and dairy products for local consumption.
- Total value of imported dairy products was 2.5 million USD in 1990, increasing to 50 million USD in 2000.
- Importing dairy products means that Vietnam imported agricultural labor, meanwhile Vietnamese farmers were looking for ways to improve their economic situation.

BECAUSE

- Development of dairy farming was the instrument of the Vietnamese Government for changing the economic structure in agriculture and rural development, and increase the income and living standard for farmers.
- To meet the high demand of milk and dairy products for local consumption, and, step by step, reduce the import of dairy products.

II. The role of the government in the development of the dairy value chain

(Theo Q§ 167/2001/Q§-TTg)

1. OBJECTIVES

a. General Objective
Development of dairy production to:
- meet the local demand of milk consumption;
- reduce, step by step, the import of milk and dairy products;
- create new jobs;
- increase the income for farmers and improve the living standard in rural areas

2. Dairy Development Policies

1. Government encouraging all organizations, individuals of Vietnamese and foreign companies to invest in dairy farming and dairy breeding, to meet the local demand for dairy development and dairy consumption.

2. Provincial authorities have a land use planning for dairy farm construction, upgrading of local cattle breed, dairy cross breeding, production of grasses and milk collection points.

...General Dairy Development Policies

3. Priority for dairy farming; from the small scale farms to the medium and big farms.

4. The state dairy companies and the other companies have the responsibility for dairy technical services, breeding, technical equipments supply, veterinary services, milk collection and dairy processing.

5. Establish the dairy cooperatives, to support dairy farmers in milk production, collection, and fresh milk pricing; and establish the dairy association for dairy farmers and dairy processors.

... Milk Collection Policies

1. Dairy processing construction and planning must be based on:
- Dairy development and milk production region
- Convenience to dairy farmer for fresh milk delivery
- Signing the milk collection and delivery contract with dairy farmers.

2. Ministry of Industry and Commercial has an annual plan of dairy products utilization, for balancing the local milk production and the import of dairy products in order to support local dairy development.

... Credit and Loan policies

The investment credit: including a central budget and local budgets for:
- Improving the local yellow cattle breed, by crossing with Zebu bulls
- Supplying semen, liquid nitrogen, and AI kits for free, as part of the dairy cow cross-breeding program
- Subsidizing the new born male dairy calves (10 USD for each calf) during the first three years of the dairy development project

...Credit and Loan policies

Support loans with a low interest rate, for purchasing dairy cows, to farmers whose got the bank contracted in the first three years of the dairy development program.

Support free vaccinations for epidemic diseases in dairy cattle.

Loan for the construction of a milk collecting system and dairy processing plan, according to the support development fund policy by government Minute No. 43/1999/N§-CP.
3. THE MAIN ACHIEVEMENT

The number of dairy cows and the milk production has increased fast during the last 10 years.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Dairy cow (1000)</th>
<th>Increase Rate (%)</th>
<th>Milk (1000 tons)</th>
<th>Increase Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>41,241</td>
<td>17.89</td>
<td>64,703</td>
<td>25.73</td>
</tr>
<tr>
<td>2002</td>
<td>55,848</td>
<td>35.43</td>
<td>78,453</td>
<td>21.25</td>
</tr>
<tr>
<td>2003</td>
<td>79,225</td>
<td>41.84</td>
<td>126,697</td>
<td>61.49</td>
</tr>
<tr>
<td>2004</td>
<td>95,794</td>
<td>20.92</td>
<td>151,314</td>
<td>39.43</td>
</tr>
<tr>
<td>2005</td>
<td>104,120</td>
<td>8.70</td>
<td>197,679</td>
<td>30.65</td>
</tr>
<tr>
<td>2006</td>
<td>113,215</td>
<td>8.73</td>
<td>215,953</td>
<td>9.23</td>
</tr>
<tr>
<td>2007</td>
<td>98,659</td>
<td>-12.86</td>
<td>234,438</td>
<td>8.56</td>
</tr>
<tr>
<td>2008</td>
<td>107,983</td>
<td>9.45</td>
<td>262,160</td>
<td>11.82</td>
</tr>
<tr>
<td>2009</td>
<td>114,461</td>
<td>6.00</td>
<td>278,190</td>
<td>6.11</td>
</tr>
</tbody>
</table>

III. Conclusion

1. The dairy production development program of the Vietnamese Government, from 2001-2010, has been a success and it meets the local demand of dairy products.

2. All provinces are encouraged to establish their own dairy development program, create jobs, and increase the income and improve the living standard of dairy farmers in the country.

3. Dairy production policies had an important role in changing the economic structure in Agriculture and Rural development.

4. The national target of 150,000 dairy cows and 330,000 tons of fresh milk production for 2010 is achieved.

5. We need the international cooperation and support to reach the targets of the dairy development plan of Vietnam in 2020 (470,000 dairy cows and 1 million tons of milk).
SETTING THE SCENE
Experiences & lessons learnt with improvement production, input supply and services

Bram Wouters
Wageningen UR Livestock Research

Context and objective

- Some characteristics of production, input supply and services
- Key issues and solutions
- Presentations

The Value Chain

Inputs/ resources

- Land
- Feeds
- Seeds
- Breeds (cattle)
- Fertilizer
- Water
- Veterinary Medicines
- Equipment
- Labour
- Credit/ loans

Issues related to inputs/resources

- Availability and access to land (tenure issues, competing claims etc.)
- Availability, access and quality of feeds (concentrate feeds, supplements etc)
- Availability and quality of cattle (crosses, pure-breds etc)
- Labour quality (education, skills etc)
- Organisation of input supply (private sector, farmers associations/ cooperatives, business hubs)
- Availability and costs of credit/loans

Services

- Veterinary Services
- AI
- Advisory services
- Quality measurement and monitoring (milk, feed)
- Management information services (breeding, milk recording)
- Recording and data base management (milk recording, identification & registration)
- Maintenance services
- Financial services
### Issues related to services
- Availability and quality of services
- Role of government/private sector in provision of services (animal health, AI, advisory services)
- Organisation of services by private sector (farmers associations/cooperatives, private companies)
- Improving capacity of service providers

### Issues related to milk production at farm level
- Feeding, breeding, disease prevention (interaction feeding, fertility, mastitis)
- Cost price and business orientation
- Farm management/hygiene and raw milk quality
- Farmer capabilities (education, skills)
- Capacity building farmers, advisors (training, use of advise & information)

### The Country Presentations

#### What are experiences and lessons learnt?
- **Vietnam:**
  - Mr. Luu Van Tan
  - Dairy Farming in Vietnam.
  - Mr. Yusup Munawar
  - Role of cooperatives in input supply and services: the role of GKSI

- **Philippines:**
  - Mrs. Victoria O. Espaldon
  - Sustainable livelihood and small holder dairy farming in the Philippines. Some insights and challenges.

- **Indonesia**
  - Mr. Yusup Munawar
  - Role of cooperatives in input supply and services: the role of GKSI
Dairy farming in Vietnam

Dairy Development Program

Luu Van Tan, DDP manager
Muak Lek, Thailand, 8-9 December 2010

Content

1. Dairy Farming in Vietnam
   - Dairy herd and milk production
   - Current constraints and future of dairy farming

2. Dairy Development Program
   - Introduction of DDP
   - Our FCV’s mission and Milestones of DDP 1996-2010
   - Milk collection
   - Extension services and training program
   - Milk quality control
   - Milk payment system
   - Achievements (herd development, milk collection, quality)

Dairy development 2005-2009

- Dairy herd 2005: 9,500 heads
- Dairy herd 2009: 19,000 heads
- Milk production 2005: 80,000 MT/year
- Milk production 2009: 150,000 MT/year

Milk consumption versus self-supply of raw milk 2005 - 2020

Annual growth of milk consumption = 10% (78% imported milk in 2010)
Annual growth of self-supply of raw milk = 10-15% (organic growth & raw importation)
% self-supply = 22-24% (2010) and 30% in 2020 as planned by Vietnamese government

Herd size & herd development

- Only few farms that have >1,500 kg/day, equipped cooling facility
- Milk farms deliver directly to FCV
- Herd size of 4-50 - 600 heads (2005-2009)

DDP - 2008

- 6% of farm is specialized in dairy – so called "specialized farms"
- 95% of dairy farm is <5% of farm is specialized in dairy – so called "specialized farms"
- Annual growth of milk consumption = 10% (78% imported milk in 2010)
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Dairy farming in Vietnam

Current constraints and a vision of future dairy farming

Current constraints:
1. Land - Investment: >95% of farms is small holder in urban areas
2. Farming skill: management + know-how ...
4. Infrastructure in rural area - utility + farm inputs + milk collection
5. Not economic due to small herd size (high input cost and not pro.)

A vision of future dairy farming (for a sustainable development):
1. Dairy farming zone is planned and effective policies are made by government
2. Commercial size + pro. management + profit stability + friendly with environment
3. Dairy farming is oriented to market and world market milk price
4. Be competitive with other local agri. businesses and world market milk price

Dairy Development Program - DDP

Our mission: Supports sustainable development of dairy farming

1. Milk collection
   - Milk collection system - Direct contract
   - Incentive payment as quality and volume delivered
   - Transparent milk payment system
2. Extension
   - Good quality farm services (AI & Vet health care)
   - Practical training (productivity)
   - Farm management - profit & milk quality & safety
   - Good Dairy Farming Practices (GDP & bonus scheme)
3. Link between FCV and dairy farmer / Gov. organizations
   - Support "grouping farmers" (cost control)
   - Building up a long term relationship with local farmers and others
   - Contribute to the national dairy development
4. Competition
   - Quality oriented (in farming practices and milk quality)
   - Control milk cost production at farm - profit stability

Dairy Development Program activities

Milk collection method

- Under management of Farmers
- Under management of FCV

Dairy Development Program - Milestones (1996-2010)

- 1996: Start of the牛奶发展项目 (DDP)
- 2004: Milestones in 15 years (1996-2010) of DDP - FCV
- 2010: Milestones in 15 years (1996-2010) of DDP - FCV

DDP - Milk collection method

- SMALL HOLDER: >2000
- FACTORY: (37)
- COLLECTION POINT: (37)
- DPST (1)
- SPECIALIZED FARM: 10
- THIRD PARTY: 3
- MILK CHILLING CENTER: (2)
Extension activities

Technical farm services
- Artificial insemination / Veterinary health care
- Practical training on dairy husbandry and farm economics
- Herd management / milking machine testing
- Encourage large farm development and farm grouping
- 1,500 - 2,000 request from farmers annually

Well-trained extension team
- Applying Good Dairy Farming Practices
- Training, service & consulting: free of charge
- On cost basis for farm input materials

Farm Milk quality control
- Milk quality standard: 12% TS; 3.5% Fat; TPC of 350,000 cfu/ml; free of antibiotic and free of additives.
- Incentive milk payment and bonus payment for desired quality and quantity
- Quality risk management system for raw milk from farm to factory (HACCP)

A transparent and incentive milk payment system

Milk payment system
- Standard quality composition, hygiene quality
- > Std of milk composition
- > Std of bacterial counts & SCC
- Scoring on Good Dairy Farming Practices
- Milk volume delivery (kg/day) & Loyalty

Milk payment consists of:
- Standard price and Surcharge at delivery gates
- Premium payment to milk with higher std. quality
- Incentive bonus is paid to GDFF & Volume delivery

Development of dairy herd and milk production

Operation region of FCV

Herd-count 2005 - 2009 in FCV region

Years
- Volume (tons/day)

Milk volume delivery (kg/day)

Improvement in milk hygiene quality (bacterial counts)

Averages of monthly TPC result in different years
Achievements

Benefits for farmers
- Providing an efficient model of transfer of dairy husbandry techniques to farmers
- Improve milk production and milk quality
- Better control farming cost
- Secure outlet market in rural areas to dairy farms by a direct contract for raw milk supply
- Farmers get fair price when selling milk directly to the company.

Benefits for local community and country (as a CSR)
- Creating jobs and stable income for local farmers in rural areas
- DDP would be seen as a model for dairy projects in the region

Benefits for company
- Secure raw milk intake from local farms at competitive cost price
- Secure quality and safety of raw milk
- Quality of dairy products
- Building up a good company image in the country

Thank you for your attention
Outline of the Presentation

• Why did we do the study?
• How did we do it?
• What are the results?
• What are some insights and challenges?

Specific Objectives

• Develop an indicator system to measure contributions and impact of smallholder dairy cattle farming to sustainable livelihood of rural communities
• Use the indicator system to assess contributions to livelihood assets or ‘capitals’
• Show spatial distribution of smallholder dairy cattle farmers
• Forward recommendations to promote a sustainable dairy cattle industry in the country

Main Objective

Examine contributions and impact of smallholder dairy cattle farming to sustainable rural livelihood strategies.

Why did we do the study?

What are the study limitations

• Data source are small dairy farmers of small dairy coops based on recall
• There is scarce monitoring data, or farmer records
• Preliminary results of the study

How did we do it?

FRAMEWORK
UK Department for International Development (DFID) sustainable livelihoods framework (focused on access, use, build-up and improvement of 5 livelihood assets or ‘capitals’)

INDICATOR SYSTEM
FAO-Nha Trang University (Vietnam) indicator system for Small Scale Aquaculture (SSA) modified to suit smallholder dairy cattle farming (5 livelihood capitals namely financial, social, human, physical and natural with 17 indicators)

Show spatial distribution of smallholder dairy cattle farmers

Forward recommendations to promote a sustainable dairy cattle industry in the country
**Financial Capital**

Financial resources available to people and provide them with different livelihood option

(household income, savings, supplies of credit or regular remittances or pensions)

**Social Capital**

Social resources upon which people draw in pursuit of livelihoods (kinship networks, associations, membership organizations and peer-group networks, access to wider institutions of society)

**Human Capital**

Capacity of people in terms of their health, knowledge, skills and education to pursue different livelihood strategies

**Physical Capital**

Physical properties of household and community used in livelihood activities (farms, house, farm implements, infrastructures such as water systems, road networks, energy distribution system and communication system)

**Natural Capital**

Natural resources used in livelihood activities

(crops cultivated, animals raised, areas of pasture leased or accessed by license, and farm by-products)

**Methodology**

Combination of various research methods for data collection:

a. Secondary data analysis
b. Farm survey-interview (44% of actual total number of respondents)
c. Field observation
d. Photo documentation
e. GPS mapping
f. Key informant interviews
g. Validation-consultation workshop
Financial Analysis

Gross Income or Sales (PhP/HH/yr)

Number of milking cows per household (average): 3 heads

1. Cash Cost (per cow per day: 7.17 liters or kilograms)
   - Breeding Cost: 2.10
   - Weaning/Veterinary care: 0.82
   - Lights and Power: 0.89
   - Loan Repayment: 4.10
   - Total Cash Cost: PhP 11,611.30

2. Non-Cash Co
   - Monetary value: 18.42
   - Forage cost (other than collecting forage): 25,018.00
   - Family labor (feeding, milking, and cleaning): 25.45
   - Total Non-Cash Cost: PhP 25,090.70
   - Total Production Cost: PhP 139,548.00

Income sources of respondents

Average annual cash income from dairy cattle farming (2009): 32.53%
PhP 66,668/year (US$ 1,400/year)
Average total annual household cash income (2009): PhP 204,928/year (US$ 4,302/year)

Cost and Return Analysis

A. Gross Income (Sales) PhP 144,240.00
B. Cash Cost 77,572.38
C. Non-Cash Cost 52,975.62*
D. Total Production Cost (B + C) 130,548.00
E. Annual Cash Income (A – B) 66,668.00
F. Gross Profit (A – D) 13,692.00
G. Profitability (F/A x 100) 9.49%**

*Non-Cash Cost = non-cash income (payment for family labor and other owned resources in raising animals; value of family labor had they worked somewhere else)
**relatively higher had the household deposited cash involved in dairy production in a bank (prevailing interest rate for time deposit for small amount of money deposited in most banks is 7% or less per annum)
Overall Contribution to Financial Capital

21% contribution in improving the financial capital (average of individual contribution to household income and economic return)

Social Capital

<table>
<thead>
<tr>
<th>Social Participation</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household membership to cooperatives/associations</td>
<td>92</td>
</tr>
<tr>
<td>Roles in cooperatives/associations</td>
<td>100</td>
</tr>
<tr>
<td>Participation in organizational activities</td>
<td>92</td>
</tr>
<tr>
<td>Number of meetings attended per year</td>
<td>92</td>
</tr>
</tbody>
</table>

Result: High percentage of farm households are active members (93.68%)

Gender Analysis

<table>
<thead>
<tr>
<th>Critical Dairy Farming Activities</th>
<th>Decision-making (%)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Husband</td>
<td>Wife</td>
</tr>
<tr>
<td></td>
<td>1. Establishing farm enterprise</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>2. Farm management and operation</td>
<td>52.63%</td>
</tr>
<tr>
<td></td>
<td>3. Buying/procuring farm inputs</td>
<td>57.89%</td>
</tr>
<tr>
<td></td>
<td>4. Selling and distributing of produce</td>
<td>28.95%</td>
</tr>
<tr>
<td></td>
<td>5. Record keeping and budgeting</td>
<td>36.84%</td>
</tr>
<tr>
<td></td>
<td>6. Allocating household expenses</td>
<td>18.42</td>
</tr>
<tr>
<td></td>
<td>7. Loan for dairy cattle</td>
<td>23.68</td>
</tr>
</tbody>
</table>

Result: Medium Low contribution of women in major decision making (34.96%)

Overall Contribution to Social Capital

72% contribution in improving the social capital (Average of Indications)

Dairy cattle farming has provided a fallback employment and alternative source of income — in providing social safety net especially when economic situation is not good.

HUMAN CAPITAL

Contribution to better health and nutrition

Indicator: Per capita annual consumption of fresh milk and meat in dairy cattle farming households

Result: Sufficient per capita annual consumption of fresh milk for 47% of households (HH)
Overall Contribution to Human Capital

33% contribution in improving the human capital (average of indicators)

- **Construction for better health & nutrition, development of relevant knowledge & data & attention of children to breast feeding**
- **Potential contribution**

---

**PHYSICAL CAPITAL**

Contribution to Build-up of farms and farm assets in rural areas

Indicator: Number of farms, farm areas and farm assets increased over 5 years in study areas (2005-2009)

Result: Medium to Low increase-- 35.80%

---

Indicator: Types and number of rural infrastructure investment not purposely for dairy cattle farming but benefit dairy farming

Result: Average use and benefits-- 61%

Average use and benefits due to:

- **Infrastructure**
  - Domestic water system: 100%
  - Road system: 100%
  - Electricity: 95%
  - Telephone: 82%
  - Cooperative house: 13%
  - Public address system: 3%
  - Village coop: 34%

---

**NATURAL CAPITAL**

Resources available for re-use and recycling

<table>
<thead>
<tr>
<th>Resources available for re-use and recycling</th>
<th>% of HH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen leftovers</td>
<td>50</td>
</tr>
<tr>
<td>Crop residues, by-products &amp; wastes from farm parcels: (fed to animals)</td>
<td>70</td>
</tr>
<tr>
<td>Grasses (native &amp; introduced species)</td>
<td>100</td>
</tr>
<tr>
<td>Leguminous plants (Gliricidia sepium, Centrosemapubescens, leucaena, rubber, flamengia)</td>
<td>71</td>
</tr>
<tr>
<td>Feeds and concentrates: 95% - (rice bran, corn bran, copra meal, salt, molasses, lactating &amp; growing feeds)</td>
<td>95</td>
</tr>
<tr>
<td>Milk (sold, consumed, fed to animals)</td>
<td>92</td>
</tr>
<tr>
<td>Animal manure (used as fertilizer, sold or given)</td>
<td>66</td>
</tr>
<tr>
<td>Water resources (ground water from pumps &amp; faucets for drinking and cleaning)</td>
<td>100</td>
</tr>
</tbody>
</table>

Result: 80% utilization of eight (8) identified natural resources
Overall Contribution to Natural Capital

Overall Contributions of Smallholder Dairy Cattle Farming to Livelihood Capitals

What are some issues and challenges?

CHALLENGES TO IMPROVE FINANCIAL CAPITAL
How to improve capacity of farmers in terms of knowledge building, e.g. refresher-course trainings on farm accounting, farm economics and financial management
How to strengthen coops and associations to strengthen linkages with Land Bank of the Philippines (LBP) and other private organizations like NGOs to access funding and other support services for smallholder dairy cattle farming
How to develop local market and/or exploration of alternative markets for fresh milk especially for small animal holders of farmers’ associations

On Physical and Natural Capital
How to improve herd build up among small dairy farmers
How to deal with the impacts of climate change and other environmental factors
Mapping of suitability for dairy farming to guide planning
Feeds development
Balance between small and big dairy farmers
Expanding and exploring market for fresh milk
Profitability analysis based on good data
Forum in every island

Thank you very much!
The dairy cooperatives are founded in the 1980’s.
The number of cooperatives had only 27 in 1979 grew up to 198 coops in 1989.
Similarly, there was a significant increase in the number of workers absorbed in dairy agribusiness, both as farmers and owners as a worker.
Increasing the number of cooperatives is not separated by incessant government programs in the development of Cooperative Village Unit (KUD) in rural areas. However, the establishment GKSI in 1979 was instrumental in conditioning the KUD as primaries coop to develop dairy business unit, or called KUD of Milk.
DAIRY CATTLE PRODUCTION AND POPULATION

HUMAN RESOURCE OF FARMERS

<table>
<thead>
<tr>
<th>OWNERSHIP STRUCTURE</th>
<th>WEST JAVA</th>
<th>CENTRAL JAVA</th>
<th>EAST JAVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CATTLE</td>
<td>CATTLE</td>
<td>CATTLE</td>
</tr>
<tr>
<td></td>
<td>FARMERS</td>
<td>FARMERS</td>
<td>FARMERS</td>
</tr>
<tr>
<td>CATTLE</td>
<td>102,630</td>
<td>94,820</td>
<td>122,315</td>
</tr>
<tr>
<td>FARMERS</td>
<td>25,263</td>
<td>25,244</td>
<td>37,286</td>
</tr>
<tr>
<td>1-3 Head 70.47 %</td>
<td>72,354</td>
<td>66,496</td>
<td>122,315</td>
</tr>
<tr>
<td>4-6 Head 13.49 %</td>
<td>24,118</td>
<td>22,165</td>
<td>28,744</td>
</tr>
<tr>
<td>7 Ekor 6.04 %</td>
<td>6,158</td>
<td>5,697</td>
<td>7,199</td>
</tr>
</tbody>
</table>

QUALITY OF FRESH MILK 2009

<table>
<thead>
<tr>
<th></th>
<th>FAT (%)</th>
<th>TS (%)</th>
<th>TFA (mg/ml)</th>
<th>SNF (%)</th>
<th>PROT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEST JAVA</td>
<td>3.6</td>
<td>11.8</td>
<td>1.7</td>
<td>8.2</td>
<td>2.8</td>
</tr>
<tr>
<td>CENTRAL JAVA</td>
<td>3.3</td>
<td>11.3</td>
<td>2.0</td>
<td>8.0</td>
<td>2.6</td>
</tr>
<tr>
<td>EAST JAVA</td>
<td>3.7</td>
<td>12.1</td>
<td>1.0</td>
<td>8.3</td>
<td>2.9</td>
</tr>
</tbody>
</table>

TOTAL PRODUCTION OF FRESH MILK SINCE 2007 - 2009

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEST JAVA</td>
<td>295,410</td>
<td>325,800</td>
<td>374,400</td>
</tr>
<tr>
<td>CENTRAL JAVA</td>
<td>70,410</td>
<td>80,759</td>
<td>94,209</td>
</tr>
<tr>
<td>EAST JAVA</td>
<td>249,220</td>
<td>312,830</td>
<td>327,890</td>
</tr>
</tbody>
</table>

DAIRY POPULATION OF GKSI

PRICE OF FRESH MILK
Based on IDR

<table>
<thead>
<tr>
<th>YEARS</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRICE</td>
<td>1756</td>
<td>1988</td>
<td>2431</td>
<td>3200</td>
<td>3300</td>
</tr>
</tbody>
</table>
TURNOVER VALUE / SALES DAIRY COOPERATIVES 2009

- WEST JAVA: 832 Billion
- CENTRAL JAVA: 370 Billion
- EAST JAVA: 1200 Billion

ROLE OF COOPERATIVES IN INPUT SUPPLY AND SERVICES

GKSI SERVICE
- Feed supply to farmers
- Guarantee payment of milk to farmers
- Cemen supply and artificial insemination service
- Consultation of animal health and treatment service
- Advocation from extension people (transfer knowledge and innovation technology)
- Everyone is entitled to get the income of the results of every year from cooperative
- Farmer health
- Etc

INSTITUTIONAL ASPECT

DISTRIBUTION CHANNEL OF MILK
GUIDANCE AND CONTROL IN FRESH MILK PRODUCTION CHAIN

MILK SUPPLY CHAIN

1. FARMERS
   - Cooperatives
   - Cold Chain System
   - Transportation
   - Hygienic handling of milk

2. Feed Supply

3. Milk Supply Chain
   - Develop farm
   - Creativity of
   - Consume

MARKETING CONSTRAINT

- Milk Industry (IPS) is single buyer
- Supply Chain Management not yet arranged
- Fresh Milk Promotion still less
- Fresh Milk Demand
- Weak institutional marketing

Program and strategy Promotion

1. Movement intensification of Drinking Fresh Milk For School Aged Children (School Milk)
2. School Children Food Supplement Program (PMTAS)
3. Drink More Fresh Milk Promotion
4. Direct marketing to Consumer
5. Processing Capability-based cooperative

Marketing Aspect

- PROMOTION
- ALTERNATIVE MARKET
- DISTRIBUTION
- PROMOTION IN LOCAL RADIO
- SCHOOL MILK PROGRAM
- MILK INDUSTRY PULPABLY TO PRODUCE STERILE MILK
- STERILE MILK
- DURABLE AND NOT REQUIRE SPECIAL TREATMENT
TECHNOLOGY & INOVATION ASPECT

OFF FARM
- The development from post production handling of fresh milk to production
- Cooling unit

ON FARM
- Improvement of artificial insemination technology
- Embryo transfer (ET), in vitro Embryo production, Frozen Embryo Manipulation
- Siring Technology

TERIMA KASIH
SETTING THE SCENE
Experiences & lessons learned on collection, processing and marketing

Jan van der Lee
Dairy Expert Round Table Meeting
"Competitive Dairy Value Chains in Southeast Asia"
Muak Lek, Thailand, December 8-9, 2010

Context and objective

- Character of value chains in Southeast Asia
- Key issues and possible solutions
  1. Sustainable sourcing
  2. Reliable Inputs & Services
  3. Product Quality Assurance
  4. Competitive prices
  5. Industrial or small-scale processing?
  6. Enabling environment

Value Chain

ISSUES in collection, processing, marketing

1. Sustainable sourcing
   - Keeping farmers interested: Price, chance of rejection, seasonal fluctuations in supply (hot season) and in demand (school holidays)
   - Collection inefficiencies affecting prices
   - Low input = Low output
   ➔ Chain embedded services, long shelf life products

Value Chain – Is it so simple?

What do Producers & Processors need?
ISSUES in collection, processing, marketing

2. Reliable Inputs & Services
- Value chain integration – Strengthening links between processors-farmers-input suppliers, e.g. through Chain-embedded services
- Value chain coordination & advocacy, e.g. through national Dairy Board
- Skilled personnel and capable organizations - Capacity development services

3. Product Quality Assurance
How to improve milk quality?
- On farm or from collection onwards?
- Start with consumer demand?

4. Competitive prices
Compete with imports / world market prices
- Reduce cost price along chain (Indonesia ⇄ Thailand)
- Niche marketing – cater to special demands - fresh milk, school milk schemes

5. Industrial or small-scale processing?
Bulk or niche? Central or local processing?
Local, regional or national branding?
Who is best situated for what?

6. Enabling environment
- Protection of budding sector / import levies, minimal local production
- Definition of fresh milk
- Consumption promotion – school milk

Thank you for your attention
Capacity development – definitions used

- **Capacity building (CB)**
  individual level capacity development of knowledge and skills

- **Organizational development (OD)**
  organizational level capacity development of organizational competencies and strategies

- **Institutional strengthening (IS)**
  capacity development for a group of actors (like the dairy sector), mainly focusing on institutions (enabling environment, "rules of the game", e.g. policies)
INTRODUCTION

• Raw milk quality – importance of the high quality of milk and dairy products made of it.
• Quality of raw milk under strict control.
• Every milk delivery inspected to certain quality parameters.
• Low-cost milk quality control – to help produce and sell dairy products of consistent good quality.

WHAT IS MILK QUALITY CONTROL?

• Use of various tests to ensure that milk and milk products are safe and healthy, and meet the standards for chemical composition, purity, and levels of bacteria and other microorganisms.

MILK GRADING

• Grade of Milk into 2 categories:
  • Good quality and poor quality
• 1985-1996 without grade
• 1997-early 2007 – 7 grades
  • grade A - good quality milk
  • grade B & C - fair quality milk
  • grade D,E,F,G & X - poor quality milk
• Mid 2007 – 2008
  • grade A & B - good quality milk
  • grade C,D and X - poor quality milk
• 2009 onwards
  • grade AA -good quality
  • grade A - fair quality
  • grade -A - poor quality

Table 1: Payment of Milk From 1985- Nov.2010

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MAXIMUM PRICE/LITRE (RM)</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>0.77</td>
<td>No grade</td>
</tr>
<tr>
<td>1986 Until June</td>
<td>0.74</td>
<td>No grade</td>
</tr>
<tr>
<td>July 1986 – August 1989</td>
<td>0.72</td>
<td>No grade</td>
</tr>
<tr>
<td>September 1989– August 1992</td>
<td>0.80</td>
<td>No grade</td>
</tr>
<tr>
<td>September 1992- December1996</td>
<td>0.90</td>
<td>No grade</td>
</tr>
<tr>
<td>January 1997- December 1998</td>
<td>1.05</td>
<td>By grade</td>
</tr>
<tr>
<td>January 1999 – June 2002</td>
<td>1.35</td>
<td>By grade A,B,C,D,E,F,G &amp; X</td>
</tr>
<tr>
<td>July 2007- May 2008</td>
<td>1.50</td>
<td>By grade A,B,C,D &amp; X</td>
</tr>
<tr>
<td>June 2008 – December 2008</td>
<td>1.90</td>
<td>By grade A,B,C,D &amp; X</td>
</tr>
<tr>
<td>2009 onwards</td>
<td>2.00</td>
<td>By grade AA, A, &amp; A</td>
</tr>
</tbody>
</table>

3 RM = 1 USD

Table 2: NEW PRICE FOR PURCHASING OF MILK

<table>
<thead>
<tr>
<th>GRADE</th>
<th>SPECIFICATIONS</th>
<th>TPC CFU/ML &amp; TDS%</th>
<th>BASE PRICE (RM/LITRE)</th>
<th>TPC incentive 0.20 million (20wks consequently)</th>
<th>Vol incentive 1,000 litre per week</th>
<th>Price ex-MCC’s (RM/Litre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>TPC&lt;0.20 million TDS&lt;13%</td>
<td>1.85</td>
<td>0.10</td>
<td>0.05</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>TPC&lt;0.20 million TDS 11.75-12.99%</td>
<td>1.75</td>
<td>0.10</td>
<td>0.05</td>
<td>1.90</td>
<td></td>
</tr>
<tr>
<td>-A</td>
<td>TPC&gt;0.20-0.50 million TDS 11.75-12.99%</td>
<td>1.35</td>
<td>-</td>
<td>0.05</td>
<td>1.40</td>
<td></td>
</tr>
</tbody>
</table>

TPC = Total Plate Count
TDS = Total Dissolved Solids
MCC’s = Milk Collecting Centres
TABLE 3: PERCENTAGE OF ‘GRADE A MILK’ 2003-2009

<table>
<thead>
<tr>
<th>ITEM</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vol.of Milk received (mil. litres)</td>
<td>7.54</td>
<td>6.58</td>
<td>6.36</td>
<td>5.63</td>
<td>5.45</td>
<td>4.11</td>
<td>5.12</td>
</tr>
<tr>
<td>Vol of milk achieved Grade A (mil. litres)</td>
<td>4.69</td>
<td>4.58</td>
<td>4.81</td>
<td>4.31</td>
<td>3.94</td>
<td>3.36</td>
<td>3.49</td>
</tr>
<tr>
<td>% achieved Grade A</td>
<td>62</td>
<td>71</td>
<td>76</td>
<td>77</td>
<td>72</td>
<td>82</td>
<td>68</td>
</tr>
</tbody>
</table>

ISSUES AND CHALLENGES
i. Most small scale dairy farmers still use hand milking.
ii. Improper cleaning of milking equipment.
iii. Improper cooling of milk.
iv. High prevalence of cows with subclinical mastitis.
v. Not properly identifying treated from healthy cows.
vi. Not keeping accurate record of dates and time of treatment for withholding milk.
vii. A thorough understanding of milk quality, in order to plan, implement, monitor and evaluate, a mastitis control program among extensionists.

CURRENT AND FUTURE PLANS
• Organising workshops for dairy farmers and extensionists: Veterinary Services on dairy management, inclusive feeds, milk hygiene, animal sheds, and record keeping, in collaboration with the government of the Netherlands and Dutch Lady Milk Industries.
• To upgrade the existing milking equipment in Milk Collecting Centre.
• To equip cold chains on lease basis for dairy farmers.
• Mastitis Control program, carried out by extensionists.
Organization of Milk Collection in Indonesia

Dr. Idat G. Permana
Bogor Agricultural University – Indonesia
Email: permana@ipb.ac.id

Workshop on Competitive Dairy Value Chains for Southeast Asia
Muak Lek, Thailand, December 8 & 9, 2010

The Advantage of Dairy Industry in Indonesia

- Village based industry
- Involves 69,300 farmers and 211,000 employees
- Allows farmers to get daily income
- Improves nutritional status
- Utilize local resources
- Support sustainable agriculture

Dairy Cattle Population Indonesia

Java: 92%
Outside Java: 8%

Outside Java:
- No milk processor
- Small market
- Fresh and pasteurise milk

Dairy Population & Milk Production

- In 2010 dairy population is 407,767 head, mainly in Java
- Milk production is 682,120 ton/year
- Almost 90% of milk is distributed to big dairy industries, only 10% distributed to small milk processor.
- Local milk production is only 20-25% of total demand
Milk Processing
- Demand of fresh milk products increase
- Major dairy industries in Indonesia:
  - Nestle
  - Friesien Flag
  - Indomilk
  - Ultrajaya
  - Sarinhusada
  - Danone
- Major problem is low milk quality

Current Condition
- Low milk quality:
  - Low fat and protein due to low feed quality
  - TPC > 1 millions
- Milking management
- Milk handling
- Quality of cooling unit
- Other reasons:
  - The distance between farmer and cooling is sometimes far
  - Sometimes road conditions are poor
  - Transportation condition

Milk Collection
From Farmer to Milk Industry
- There are several hundred milk collection points
- Farmers take their milk to the milk collection point
- There are alcohol and density checks
- Milk is transported to cooling center by truck

Technical Guidelines
- Milk Collection Center:
  - Walls and floors should be water-resistant (porcellen)
  - The ceiling is made of materials that do not pollute the milk
  - Door and window can close itself freely and widely shutters maximum 15% of floor area.
  - Has good ventilation
- Milk Cooling Unit
  - Tank specification
  - Cooling unit (Refrigerator unit)
In the future:

- Improve milking management and milk handling
- Equipped by portable milking machine
- Improve road infrastructure
- Build small cooling units in villages
- Milk price incentives

Thank You
NICHE MARKETING IN THE PHILIPPINES

DANILO “DANNY” V. FAUSTO
National Chairman, Dairy Confederation of the Philippines
Chairman, Talara Dairy Cooperative, Inc.
President, DVF Dairy Farm, Inc.
District Governor RY 2007-2008, Rotary International District 3780

Milk & Dairy Products Import
Philippines, 2008

- Volume of total import in LME < 1.77 lbs
- Import is 84% Powdered Milk
- Annual Import USD 720.00

\[ \text{PARTICULARES} \]

<table>
<thead>
<tr>
<th>Particulars</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock population (head)</td>
<td>10,079,313</td>
<td>10,108,862</td>
</tr>
<tr>
<td>Cattle</td>
<td>2,566,492</td>
<td>2,565,662</td>
</tr>
<tr>
<td>Carabao</td>
<td>3,338,570</td>
<td>3,320,966</td>
</tr>
<tr>
<td>Goat</td>
<td>4,174,251</td>
<td>4,222,234</td>
</tr>
<tr>
<td>Total dairy herd (head)</td>
<td>28,191</td>
<td>29,593</td>
</tr>
<tr>
<td>Cattle</td>
<td>13,864</td>
<td>15,073</td>
</tr>
<tr>
<td>Carabao</td>
<td>13,416</td>
<td>13,594</td>
</tr>
<tr>
<td>Goat</td>
<td>911</td>
<td>928</td>
</tr>
<tr>
<td>Total dams and does</td>
<td>13,739</td>
<td>14,265</td>
</tr>
<tr>
<td>Cattle</td>
<td>6,371</td>
<td>6,871</td>
</tr>
<tr>
<td>Carabao</td>
<td>6,898</td>
<td>6,922</td>
</tr>
<tr>
<td>Goat</td>
<td>470</td>
<td>472</td>
</tr>
<tr>
<td>Dairy Farm Families</td>
<td>14,405</td>
<td>15,211</td>
</tr>
<tr>
<td>Primary Dairy Cooperatives and Institutions</td>
<td>317</td>
<td>347</td>
</tr>
</tbody>
</table>

We import ruminant-derived products!

Ruminants are with the Small Holders

Improving Ruminant Production in the Philippines is a SOCIAL AGENDA
- Achieving growth and food security
- Reducing rural-urban income disparities and rural poverty
DVF DAIRY FARM

Milk Collection
- Dairy farmer delivering milk at the plant
- Centrifuge mounted on tricycle

Quality Control & Processing
- Testing of Fresh Carabaos Milk
- Pasteurizing & Homogenizing

Packaging
- Filling Milk in Bottles
- Packaging of Carabaos Milk
How does carabao’s milk compare

<table>
<thead>
<tr>
<th>Milk Source</th>
<th>Cow</th>
<th>Carabao</th>
<th>Difference %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat (%)</td>
<td>4.30</td>
<td>7.90</td>
<td>83.72</td>
</tr>
<tr>
<td>Total solids (%)</td>
<td>13.10</td>
<td>16.30</td>
<td>24.43</td>
</tr>
<tr>
<td>Protein (%)</td>
<td>3.60</td>
<td>4.20</td>
<td>16.67</td>
</tr>
<tr>
<td>Lactose (%)</td>
<td>4.80</td>
<td>5.00</td>
<td>4.17</td>
</tr>
<tr>
<td>Tocopherol (mg/g)</td>
<td>0.31</td>
<td>0.33</td>
<td>6.45</td>
</tr>
<tr>
<td>Cholesterol (mg/g)</td>
<td>3.14</td>
<td>0.65</td>
<td>-83.08</td>
</tr>
<tr>
<td>Calcium (mg/100 g)</td>
<td>165.00</td>
<td>264.00</td>
<td>60.00</td>
</tr>
<tr>
<td>Phosphorus (mg/100 g)</td>
<td>213.00</td>
<td>268.00</td>
<td>25.82</td>
</tr>
<tr>
<td>Magnesium (mg/100 g)</td>
<td>23.00</td>
<td>30.00</td>
<td>30.43</td>
</tr>
<tr>
<td>Potassium (mg/100 mg)</td>
<td>185.00</td>
<td>107.00</td>
<td>-72.90</td>
</tr>
<tr>
<td>Sodium (mg/100 g)</td>
<td>73.00</td>
<td>65.00</td>
<td>-12.31</td>
</tr>
<tr>
<td>Vitamin A (incl. Carotene) IU</td>
<td>30.30</td>
<td>33.00</td>
<td>8.91</td>
</tr>
<tr>
<td>Vitamin C (mg/100 g)</td>
<td>1.90</td>
<td>6.70</td>
<td>252.63</td>
</tr>
</tbody>
</table>

Philippine Advantages

- Close proximity to major cities allows fresh milk & premium cheese, yogurt & ice cream within a 5-6 day cold chain
- Large river-fed plateaus & high rainfall provide largest grazing resource in East Asia
- Large rural labor force benefits, while keeping costs low
MALNUTRITION... erodes the future generation

Out of 12 M children ages 2-10:
- About 69% malnourished

Local Government Units Participation

Milk Feeding Program

THE MAGIC OF MILK FEEDING

BEFORE
October 2003
Poblacion, Manolo Fortich

AFTER
December 2003
Poblacion, Manolo Fortich

Thank You !!!

Planned Expansion Stages

- 1st round expands herd 10x, sets down new operating systems
  - Improves breeding technology, starts community-building programs
  - Continues building cooperatives & training programs for next phase
- 2nd round expands 10x again, begins franchising operations
  - Extends export business with both brand-building & bulk supply
  - Prepares groundwork for inter-ASEAN franchising to expand benefits

DVF Dairy Farm System

(DIP into the system)

Foreign & Local Investors

Dip (Dairy Investment Partners)

Coops

Breeders

Small-hold Farmers

Milk Plant

Milk Processing
Value Chain Coordination for an Efficient Dairy Sector

Bram Wouters
Wageningen UR Livestock Research

Context and objective

- Drivers for value chain coordination
- Issues related to efficient value chain coordination
- Examples of dairy value chain coordination

Key Actors and other Stakeholders in the Value Chain

- Government
- Farmer
- Producer
- Collector
- Processor
- Retail
- Consumer

Research and development institutions:
- Universities, agricultural schools

NGO's and interest groups

What could be drivers for chain coordination

- Platform, network for private sector/government (pricing)
- Advocacy/advising regarding sector/value chain policies
- Regulation of the value chain, delegation of government responsibilities: licensing, enforcement of regulations
- Addressing issues of common interest including funding: milk quality, research and development, services
- General promotion of consumption of milk and dairy products (general promotion)
- Implementation of development activities (NDDB, India)

Issues related to efficient chain coordination

- Defining common goals
- Defining tasks and approaches of coordination body
- Representation: role of government/private sector/enabling organisations
- Organisational set up
- Legal status and mandate
- Funding activities

Example of Dutch Dairy Board

- Legal body: product board under government supervision
- Implements delegated responsibilities of government (implementation regulations, market regulations, licensing etc.)
- Governed by actors in the chain (farmers, processors, labour unions)
Our FACT

EUR 8.2 billion annual revenue
30+ well known brands
21,000 employees in 100 production and sales locations in 27 countries
11.4 billion kilograms of milk processed
16,000 member dairy farms, supplying 8.6 billion kilograms of milk annually
Number 1 dairy co-operative in the world

Company History

- 1967: Formed as Foremost Consumer Products
- 1978: Laksi Plant: No.99/30 Moo 2 Changwattana Rd., Bangkok
- 1992: Formed of UHT Hong Kong, Taiwan, Foremost Thailand and Dairy Scene
- 1997: Formed of UHT Hong Kong, Taiwan, Foremost Thailand and Dairy Scene
- 2002: A successful partner in the global market of dairy, milk products, cheese, butter and ingredients. We are fascinated by the power and potential of milk. We aim to help people to move forward by getting more out of milk. We have more than 130 years of commitment to sustainable dairy. As a co-operative, we are a team and can depend on one another.
- 2006: Launched Foremost SPARK

Ingredients
Professional brands
Consumer brands
Thailand Fresh Milk Supply

Country Fresh Milk Supply Pattern in 2009

Fresh Milk Price & Cost

MOU 2010-11 (effective Oct, 1, 2010 – Sep, 30, 2011)

Fresh milk ; (ton/day)

- Total Country: 2,747.23
- For School milk: 1,343.66 (School milk budget = 1,211.47)
- For Commercial: 311.45
- For Skimmed milk quota: 1,092.12

Location of our fresh milk suppliers

Our Products in Thailand
“A healthy start for a better milk”
by Marc Spackler, marc.spackler@frieslandcampina.com
<table>
<thead>
<tr>
<th>Consumer Products Western Europe</th>
<th>Consumer Products International</th>
<th>Cheese &amp; Butter</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enlarge branded home market activities</strong></td>
<td><strong>Enlarge international consumer business</strong></td>
<td><strong>Defence actual market</strong></td>
<td><strong>Create new opportunities</strong></td>
</tr>
</tbody>
</table>

- campina
- MONA
- DUTCH LADY
- Peak
- Frico
- Volmer
- kievit
- DOMO
- Friesche Vlag
- Lapinlaito
- Frisian Flag
- fruttis
- MILNER
- Buttergold
- creamy creation
- Chocomel
- COOLBEST
- Milli
- BETAGEN
- Slankie
- Nutrifeed
- Optimix
- jalutra
- FrieslandCampina

**Nutrifeed**

*everything to help you grow*
FrieslandCampina Dairy Feed supply chain

Supply Chain FrieslandCampina Dairy Feed

- Veghel Nutrifeed: Blends Young Animals
- OpCo Dairy Feed office: General, M&S, R&D, Finance
- Veghel Spray -2: Whey derivatives, Fat concentrates
- Borculo: Substimel, EW
- Gerkesklooster: KWP, SMP
- Aalter (Belgium): MSAW, Milk powders
- Group Ingredients plants: Off Spec material +/ - 15,000 ton, Liquid feed flows +/ - 50,000 ton

Total OpCo Dairy Feed

Nutrifeed: everything to help you grow
Calf rearing: what’s important?

- Healthy start: no diseases/mortality
- Optimal growth
- Rumen development
1) First things first: Colostrum
- 1\textsuperscript{st} hour after birth, 1\textsuperscript{st} feeding
- 10\% of birth weight in 24 hour
- Not warmer than 40 °C
- First 2-3 days after birth
- Farm specific colostrum: Ig’s
2) Temperature and concentration

- Direct flow of milk in abomasum
- Dependent on sucking, temperature (38 - 40 °C), concentration (125g/l)
3) Rumen development
4) The effect of fresh water on technical results of rearing calves (0-4 wkn)

<table>
<thead>
<tr>
<th></th>
<th>Water</th>
<th>No water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth, gram/day</td>
<td>309</td>
<td>180</td>
</tr>
<tr>
<td>Concentrate intake, kg</td>
<td>11.8</td>
<td>8.2</td>
</tr>
<tr>
<td>Diarrhoea, days/calf</td>
<td>4.5</td>
<td>5.4</td>
</tr>
</tbody>
</table>
5) Nutrifizz: Effervescent tablets

- Prevents dehydration (transport, fecal disorders)
- Essential minerals plus Imagro® health concept
- Restores fluid and salt balance
- High-energy carrier for energy boost: Lactose!
Whole milk.....

.....or CMR
Why CMR?

- Cost efficient
- Composition (cow milk too high in fat and protein, too low in minerals-vitamins and no health stimulating additions like Imagro, lactoferrin, GOS)
- Big variation in composition of rejected milk
- Vertical transmission of disease factors
- Antibiotic resistance
Relation between weight at first partus and milk yield

Milkyield first lactation

Milk yield (Kg) vs Weight (Kg) graph with data points and trend line.

Kg Milk
Better Rearing pays off

<table>
<thead>
<tr>
<th>Body weight</th>
<th>% cows present</th>
<th>Milk yield</th>
<th>Age</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Months</td>
<td>1. Lact.</td>
<td>2. Lact.</td>
<td>3. Lact.</td>
<td>1. Lact.</td>
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</tr>
</tbody>
</table>

Rearing costs in relation with milk yield

<table>
<thead>
<tr>
<th>Life production</th>
<th>Rearing costs/Liter Milk</th>
<th>% Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.000 L.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.000 L.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.000 L.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.000 L.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Example Thailand

<table>
<thead>
<tr>
<th>Nutrifeed</th>
<th>USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Isilac</strong></td>
<td>colostrum&lt;br&gt;3 weeks cow milk&lt;br&gt;7 weeks Isilac&lt;br&gt;Weaning at 10 weeks</td>
</tr>
<tr>
<td>• own dairy&lt;br&gt;• spray dried fat&lt;br&gt;• Imagro&lt;br&gt;• premium from 21 days</td>
<td></td>
</tr>
</tbody>
</table>

<p>| <strong>Kalvolac-Kalvostart</strong> | No cow milk ➔ Kalvolac after colostrum&lt;br&gt;Super premium after colostrum&lt;br&gt;Early weaning at 8 weeks |
| • More &amp; own dairy&lt;br&gt;• 40% of the fat is coconut oil&lt;br&gt;• Physical excellence&lt;br&gt;• Lactoferrin + nutritional emulsifier&lt;br&gt;• Imagro&lt;br&gt;• hydrolysed wheat protein spray dried | |</p>
<table>
<thead>
<tr>
<th>Feeding Schedule</th>
<th>Cow's Milk CMR</th>
<th>Kalvostart + Kalvolac CMR</th>
<th>Cow's Milk CMR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DAY 1-2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DAY 3-4</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DAY 5-7</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Day 7-10</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>DAY 11-14</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Week 3</strong></td>
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<tr>
<td><strong>Week 4</strong></td>
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<td><strong>Week 5</strong></td>
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<tr>
<td><strong>Week 6</strong></td>
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<tr>
<td><strong>Week 7</strong></td>
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<td><strong>Week 8</strong></td>
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<td><strong>Week 9</strong></td>
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<tr>
<td><strong>Week 10</strong></td>
<td></td>
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</tr>
</tbody>
</table>
# Economic versus super premium CMR

<table>
<thead>
<tr>
<th></th>
<th>Eco</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADG, day 0 – 21 (g/day)</td>
<td>435</td>
<td>562</td>
</tr>
<tr>
<td>ADG, day 0 – 56 (g/day)</td>
<td>520</td>
<td>729</td>
</tr>
<tr>
<td>Medicines (% calves)</td>
<td>48</td>
<td>12</td>
</tr>
<tr>
<td>FCR, day 0 – 56</td>
<td>2.02</td>
<td>1.85</td>
</tr>
<tr>
<td>Concentrate intake (kg)</td>
<td>8.0</td>
<td>17.6</td>
</tr>
</tbody>
</table>
The Netherlands: synergy between Nutrifeed & RFC member farmers

A healthy start for better milk

Cowmilk

Rearing

Dairy

Ingredients

Calf milk
A healthy start for better milk

better ingredients

calf milk

better milk quality

better result

CPI: synergy between Nutrifeed & RFC
Thailand/Foremost
Dairy Expert Roundtable meeting, Muak Lek, Thailand

Competitive Dairy Value Chains in South-East Asia
Asian dairy: Gain or Pain?

December 2010

Mr. Siebren van der Zwaag, DVM
Director

2001: Established at Leeuwarden, The Netherlands
2003: Extension of team and its activities
2010: 8 staff members + associated experts
Implementation: 250 Agricultural projects in 41 countries
Core business: Professional dairy development in small scale – medium scale – large scale
Focus: Vietnam, Indonesia, China, Nigeria, Russia, Ukraine, Balkan- and Middle-East regions.

Dairy Development SE-Asia
Some positive experiences in Indonesia

“Seeing is believing”
“Result oriented means team work”
“Time for changes”
“Learning by doing principles”

About The Friesian

› 2001: Established at Leeuwarden, The Netherlands
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› Focus: Vietnam, Indonesia, China, Nigeria, Russia, Ukraine, Balkan- and Middle-East regions.

Dairy ASIA: ‘gain or pain’

› First (inception) phase

› ACTIVITIES:
  investigations
  – Partners, Authorities & (local) government
  – Project location(s)
  – Infrastructure & logistics
  – Regional information

Investigation actual situation in rural areas
Investigation local dairy situation and its trends
Results performed

- Second phase: Implementation of program
  - Selection and training of local staff
  - Selection of demonstration sites
  - Change of hardware (f.e. barn equipment)
  - Use of analyze equipment and data registration
  - Implementation of new farm development and strategies!
Input latest techniques: analyse equipments for SCC

Discussions and demonstration to local farming families

On-farm talks between Producers and Processors: its all about Cost reduction & Food Safety!

Major Result: Better & efficient daily dairy farm management routines, wherein milk quality thus food safety for consumers safeguarded by all working in the dairy chain!

Herein: care for......
- Animal Welfare
- Environmental protection (aim for: energy-neutral)
- Working circumstance people
- Profitability = income for all working in the dairy chain!

Result oriented

Farmers copy new technology and inputs

Animal and environmental friendly dairy farming
Quality Risk Management Systems: safe production against a low cost price per kg milk leads to improved farmers income

Learning aspects
- Only accept ‘Reliable partners’
- Recognize but accept cultural differences
- Input of realistic budgets & availability credit facilities
- Remember: Developments in dairy are always on the long-term (min. 2 to 5 years)
- Practical implementation (f.e. + visit to the Netherlands)
  - “Learning by doing aspect”
  - “Seeing is believing aspect”

Prosperous Dairy Future
‘NO GAIN WITHOUT PAIN’

Only professionals can do the job!
Contact us: www.thefriesian.nl
Nutreco – who we are

- A leading global player in animal nutrition and fish feed
- Founded in 1994 and a public company since 1997
- Net sales in 2009 EUR 5.1 billion
- Over 100 production and processing plants, sales in more than 80 countries
- Multinational workforce of 10,800 employees
- Nutreco ranks the top of the global animal nutrition industry: No. 3 in revenues No. 6 in volume

Nutreco – where we come from

Nutreco: Global player Dairy Feed Industry

Compound feed West Europe – Hendrix UTD

- Total annual volume 2.4 million tonnes
- Top player on the Benelux, market share of 12%
- 9 large compound feed plants in the Benelux
- Workforce of over 700 employees

Compound feed Spain – Nanta

- Total annual volume of 2.5 million tonnes
- Market share of 14% in Spain
- Within Spain and Portugal 15 production facilities
- Workforce over 600 employees
**Animal nutrition Canada**

In 2007 Nutreco acquired the Canadian animal feed brands Shur Gain and Landmark Feeds from Maple Leaf. Both brands have a wide product range including base premixes, protein premixes, concentrates and compound feeds.

- Overall market share of 23% in Canada
- 16 Animal feed production facilities
- Workforce of over 1,050 employees

**Fish feed**

Nutreco’s fish feed subsidiary Skretting distinguishes four types of fish feed products: feed for brood stock diets, juvenile feed, grower diets and special diets. The company has a comprehensive range of diets available to suit all needs of the farmer – from low volume speciality diets for fry and smolts to high volume grower diets.

- Total annual volume of 1.4 million tonnes
- 75% salmon feed volume, 25% other fish volume
- Market share in salmon feed close to 40%
- 16 Production facilities in all major regions
- Workforce over 1,400 employees

**Premixes and specialties**

Premixes are ingredients for compound feeds consisting of micro-ingredients. Specialties are animal feeds for specific animal groups such as young animals. Premixes and specialties are produced by Nutreco’s subsidiary Trouw Nutrition International (TNI).

- Total annual volume over 1 million tonnes
- Global market share of 12%
- 21 Production facilities in Europe, USA and Mexico
- Workforce of over 2,500 employees

**Nutreco R&D – Research Facilities**

- Calf Research Centre
- Swine Research Centre
- Poultry and Rabbit Research Centre
- Research Feed Plant
- Skretting Aquaculture Research Centre
- Newton feed evaluation

**Nutreco R&D**

- **Ruminant Research**
  - Netherlands (Boxmeer) “De Kempenshof”
  - Canada (Burford) “Agresearch”

**Nutreco innovations and concepts**

- Kempen system
- Transition concept
- Fresh cow concept
- Newton feed evaluation
Feeding system based on free intake of hay and complete feed

Program

- Research on Nutreco Research Farm "Kempenshof"
- Results and experiences from practical dairy farms

Research Farm de Kempenshof

"Healthy cows with increased Lifetime Production"

"More milk with less labour"

"Financial profit mainly dependent on opportunities for utilization of land and labour"

Transition management

The key to dairy performance!

Transition period?

- 6 wk  3 wk  0 dg  4 wk

TRANSITION PERIOD
Why focus on Transition period?

- ± 80% of the problems during early lactation are related to dry period:
  - Metabolic disorders
  - Mastitis
  - Lameness
  - Fertility
- ± 25% of the cullings take place <60 days in lactation
- Dry cows get only ± 20% of the attention

Transition Period most critical period of the lactation cycle!

Objectives Transition period

- Optimise Udder health
- Maximise Dry Matter Intake
- Minimise Negative Energy Balance
- Stimulate Rumen function
- Prevention Milk Fever and hypocalcaemia
- Optimise Immune status
- Minimise Stress
- Healthy start lactation

Fresh Cow Concept

- What is Fresh Cow Concept?
  - Management and Feeding concept for Fresh Cows (0-25 days) with the goal to minimize NEB/∆BCS
  - Special Feeds with all the "goodies" for fresh cows
- Benefits?
  - Improved BCS (decrease BCS after calving 0,5 BCS)
  - Healthier cows / Improved immunity and fertility
  - Lower culling rate
  - Increase in Lifetime production

Conclusions

- Nutreco global leading company in Agriculture and Aquaculture
  In SE Asia present in China, Indonesia, Philippines, Thailand, Vietnam, Malaysia, Korea, Japan, India, Pakistan.
- Ruminants no 1 in our business
- Much focus on R&D and innovation
- Not only feed development but total management concepts.
- Examples:
  - Kempen, Fresh Cow, Transition and Newton

Thanks for your attention and a lot of succes!
Dairy Products and Production in Myanmar

Dairy expert roundtable meeting

Competitive Dairy Value Chains in Southeast Asia

Dr. Khin Hlaing, Secretary
Myanmar Dairy Association
Myanmar Livestock Federation
8 and 9 December, 2010
Muak Lek, Thailand

Background

- In 19 centuries, a large population of Indian people came to work to Myanmar and carried Indian breeds of dairy cattle.
- In 1958, ARDC imported over 400 exotic breeds of cattle such as Sindhi, Thari, Hanana and Tharpark from Pakistan.
- In 1978, pure bred Friesian and Jersey in total number of 214 were imported from the New Zealand and Australia.
- A milk processing plant of 30,000 Kg capacity was established in 1983 in Yangon.
- A second milk plant was set up near Mandalay under Co-operative Ministry in 1985.

ARDC: Agriculture & Rural Development Corporation (Government Institution)

Milk Consumption Habit

- Myanmar people like to take milk in the form of tea or coffee.
- Urban population take more milk than rural people.
- Milk in Tea and coffee is from condensed milk (Imported or local).
- Milk products in Myanmar are pasteurized milk, yoghurt, butter, butter oil, cheese, dry flakes of milk, ice cream etc.
- In addition, milk is used in a large quantity in confectionaries such as biscuits, cookies and a variety of cakes.

Cattle production systems

Cattle population - 13.1 million,
Dairy Cattle - 0.5 million
Most of them are Drought Cattle.
Common Dairy Breed is Friesian Crossbred.

- Maximum milk yield: 24 Kg per day per head
- Average milk Yield: 5 Kg per day per head

Dairy Cows in States and Divisions, 2007

<table>
<thead>
<tr>
<th>State/Division</th>
<th>Number of Dairy Cow</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandalay</td>
<td>243500</td>
<td>47%</td>
</tr>
<tr>
<td>Sagaing</td>
<td>62200</td>
<td>12%</td>
</tr>
<tr>
<td>Shan</td>
<td>51800</td>
<td>10%</td>
</tr>
<tr>
<td>Yangon</td>
<td>46500</td>
<td>9%</td>
</tr>
<tr>
<td>Bago</td>
<td>46600</td>
<td>9%</td>
</tr>
<tr>
<td>Magway</td>
<td>36250</td>
<td>7%</td>
</tr>
<tr>
<td>Other S/D</td>
<td>31328</td>
<td>6%</td>
</tr>
<tr>
<td>Total</td>
<td>518178</td>
<td>100%</td>
</tr>
</tbody>
</table>

Dairy Production

- In 2006-2007, Myanmar produced about 1 Million ton of fresh milk.
- There were about 440 processing plants in Myanmar and processing 2240 MT of milk products daily.
- Per capita consumption of milk was 23.0 Kg in 2008-2009.
- Sweetened condensed milk is produced in large quantities and mainly produced in Mandalay and Sagaing Divisions.
- The biggest dairy plant in Myanmar is Myabuyin Dairy Plant, Kyaukse and handling about 60,000 Kg of milk a day.
- In 2009-2010, 43270 MT of milk powder and condensed milk were imported through normal and border trade.
Yearly statement of imported dairy products into Myanmar

<table>
<thead>
<tr>
<th>Year</th>
<th>MP (MT)</th>
<th>SCM/EM (MT)</th>
<th>Total Volume (MT)</th>
<th>Total Value (Million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-2008</td>
<td>6046.81</td>
<td>33082.75</td>
<td>39129.56</td>
<td>35.94</td>
</tr>
<tr>
<td>2008-2009</td>
<td>1604.38</td>
<td>36317.71</td>
<td>37922.09</td>
<td>41.03</td>
</tr>
<tr>
<td>2009-2010</td>
<td>5115.01</td>
<td>38154.68</td>
<td>43269.69</td>
<td>45.91</td>
</tr>
<tr>
<td>2010-2011 Up to July</td>
<td>1824.73</td>
<td>11993.95</td>
<td>13818.68</td>
<td>15.25</td>
</tr>
</tbody>
</table>

Source: Ministry of Commerce

MP: Milk Powder
SCM: Sweetened Condensed Milk
EM: Evaporated Milk
MT: Metric Ton

Myanmar Dairy Association

- Established, 26th August 2004 under Myanmar Livestock Federation
- Eleven CEC members in Myanmar Dairy Association
- Chairman: Dr. Mya Han and Secretary: Dr. Khin Hlaing
- Five State & Divisional Dairy Associations formed.
- About 1200 number of members throughout Myanmar.

Myanmar Dairy Association Objectives

- To increase per capita milk consumption in Myanmar by promoting milk production.
- To substitute imported item with value added Myanmar dairy products.
- To produce hygienic dairy products and to establish sustainable dairy market.
- Participate and co-operate with LBVD and other departments to increase genetic potential of cow, pasture development and cattle disease control.
- To produce hygienic dairy products and to establish sustainable dairy market.

Fresh milk supply chain, Yangon Area

- Small Scale Dairy farms
- Commercial dairy farms
- Milk collectors
- Milk plants
- Wholesale markets
- Confectionaries
- Super markets
- Retail shops
- Hotels
- Insein, Tarmwe
- Ready to drink milk

- In 1995, WALCO dairy plant initiated the production of pasteurized milk. The hygienically processed milk was accepted by consumers.
- The pasteurized milk market flared along when supermarkets started appearing in Yangon in 1997.
- Following the systematic procedures exercised by the entrepreneur, eleven new brands of pasteurized milk penetrated the market in a decade (1997-2007).
- Growing demand for milk & dairy products, but at the same time-growing demand for safer products.
Hygienic Production

- Most of the SSD farmers practice manual milking method, not more than 10 dairy farms use milking machine.
- SSDDTTT project introduced Lactoscan with Myanmar dairy business in 2006.
- Quality raw milk can be collected by using Lactoscan.
- No problem of Melamine in fresh milk, as milk payment system is not based on protein% of milk.
- Need to upgrade milk and milk products packaging.

Constraints and problems

- Low in dairy breed genetic.
- Poor in proper dairy husbandry & feed management.
- Poor storage and transport facilities.
- Insufficient electric power makes production cost higher.
- Financing to extend business.
- 30% taxation on sale.
- Unfair competition with cheap imported milk powders.

Recommendations

- More inspection on dairy plants from concerning institutions.
- Sufficient electricity supply is needed.
- UHT milk plant is necessary for increasing raw milk.
- The import of poor quality milk powder at low prices should be banned by imposing new laws and restrictions to protect the livelihood of small holder dairy producers.
- The sales tax rate be lowered on the domestic value added milk products than the imported products.
- National Dairy Development Plan should be initiated asap.
- Long term loans with low interest rate.

THANK YOU
RECENT DEVELOPMENT OF DAIRY INDUSTRY IN INDONESIA

ADIARTO
FACULTY OF ANIMAL SCIENCE
UNIVERSITAS GADJAH MADA
YOGYAKARTA, INDONESIA

GENERAL SITUATION AND PROBLEM

• HIGH POPULATION OF PEOPLE : 240 MILLION PEOPLE
• MILK SELF SUFFICIENCY : 25% (679.2 METRIX TONS)
• LOW LEVEL OF MILK CONSUMPTION : 11 LITER/CAP/YEAR
• MILK CONSUMPTION TENDS TO INCREASE SIGNIFICANTLY
• BECOME HIGHLY DEPENDING ON MILK IMPORTATION
• WILL IMPROVEMENT OF NATIONAL DAIRY INDUSTRY COULD OVERCOME THE DEMAND OF MILK ?
• IN YEAR OF 2014 INDONESIA PLANS IN ACHIEVING THE MILK DEMAND OF 50%
• COULD WORLD MARKET FULFILL THE DEMAND OF MILK ?

NATIONAL DAIRY PROGRAM

INCREASING NATIONAL MILK PRODUCTION
• SUPPORT THE FARMER OR PRIVATE SECTOR WHO WANTS TO BUY DAIRY CATTLE (AVAILABLE FUND FOR BUYING 200,000 HEADS OF DAIRY CATTLE WITHIN NEXT 5 YEAR SINCE 2010 BY ISSUING THE MINISTRY OF FINANCE DECREE ON LOAN FOR BREEDING DAIRY CATTLE (5% LOAN SUBSIDY TO ANY BUSINESSMAN AS WELL AS ELIGIBLE MILK COOPERATIVE)
• IMPROVEMENT OF FARMER PROSPERITY
  • DEVELOP SMALL SCALE MILK PROCEESING PLAN TO BUILD UP THE CAPABILITY OF MILK COOPERATIVE HANDLING ON MILK PROCESSING TO GET ADDED VALUE OF MILK
The regional Dairy Expert Roundtable Meeting on “Competitive Dairy Value Chains in Southeast Asia” provided a forum for participants from six Southeast Asian countries to discuss how dairy value chains in this region can become more competitive and sustainable. This document, Part II, contains the PowerPoint presentations from the workshop and is an annex to the main report of the meeting.

More information: www.cdi.wur.nl