



## SUSTAINABLE DEVELOPMENT OF DAIRY COWS PRODUCTION IN VIETNAM IN THE CONTEXT OF ASIA AND TPP INTEGRATION



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## CONTEXT

- The demand for milk is increasing.
- The average consumption per capital: the world - 103.4kg; the Europe - 205.0 kg; the Oceania - 336 kg; the Asia - 65.6 kg (DLP, 2013). Follow Vietnam dairy association. Vietnam - 18 kg; China - 35 kg; Thailand - 25 kg (2015).
- In Vietnam
  - The dairy cow population increases from 61 thousand heads to over 275 thousand heads in 2000-2015;
  - There is no specializing dairy cow before → Now, new breeding has crossed which is HF-Vietnam breeding; there're also many farms scale of ten thousands dairy cow in Vietnam.
- How is the average production cost for 100 kg of fresh milk?
  - Follow the IFCN's statistics in 2013: the world - 46 usd; the Europe 40-55 usd; American - 41.4 usd; the Oceania - 35usd; China - 62 usd. Japan - 128 usd; and Vietnam 42-52 usd.

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## OPPORTUNITY AND CHALLENGE

- **OPPORTUNITY**
  - In the world, the demand for milk increases by 2.5% on average a year; in 2013-2014 the rate is 3.4%. In Vietnam the growth is always over 10%.
  - 66% of Vietnam demand have imported from abroad.
  - Science technology develop very quickly.
  - Farmers experience increases.
  - 10-20% of investment interest rate.
  - Forces labor; diversity by- products.
  - The concurrence of the Party, the government (center and province level).

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## OPPORTUNITY AND CHALLENGE

- **CHALLENGE**

- Vietnam is tropical country; no dairy cows breeding, lack of experiences on dairy production....
- 70-75% of dairy cows head is raised by 24.000 famers (household scale) → Many difficulties to control disease and food safety.
- Land narrow; lack of grassland; crowded population.
- Link between farmers – the processers not good; not transparent about the criteria and advertising for the product.
- New international integration regulars

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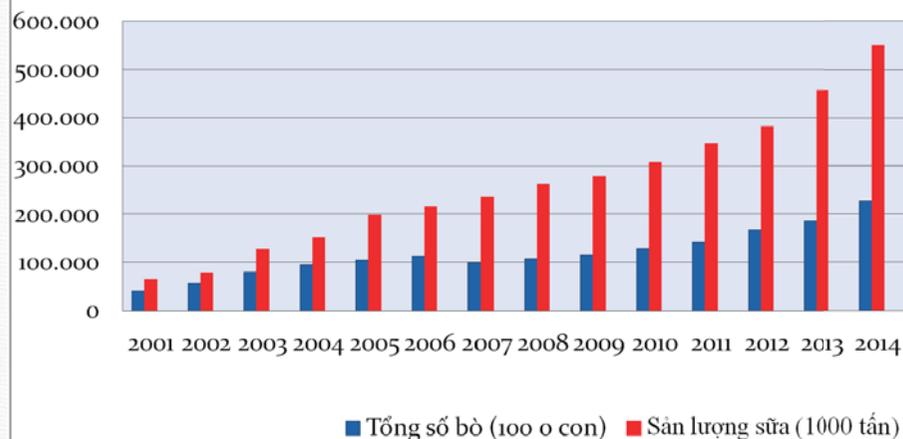
## RESULTS

1. Dairy cows population and products in 2001-2014

- Growth rate of heads 2001 - 2014: 14.04%
  - 2001 - 2010: 13.47%
  - 2010 - 2014: 15.35%
  - 2015/2014 : 20.96%
- Growth rate of milk products
  - 2001 - 2014: 17.89%
  - 2001 - 2010: 18.87%
  - 2010 - 2014: 15.70%
  - 2015/2014 : 31.59%

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Dairy cows population and products in 2001-2014



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Dairy cows population and products in 2001-2015

|    | Year | Total (1.000 heads) | Growth rate (%) | Total products (1.000 tons) | Growth rate (%) |
|----|------|---------------------|-----------------|-----------------------------|-----------------|
| 1  | 2001 | 41.24               | 17.89           | 64.70                       | 25.73           |
| 2  | 2002 | 55.85               | 35.43           | 78.45                       | 21.25           |
| 3  | 2003 | 79.23               | 41.84           | 126.70                      | 61.49           |
| 4  | 2004 | 95.79               | 20.92           | 151.31                      | 19.43           |
| 5  | 2005 | 104.12              | 8.70            | 197.68                      | 30.65           |
| 6  | 2006 | 113.22              | 8.73            | 215.95                      | 9.24            |
| 7  | 2007 | 98.66               | -12.86          | 234.44                      | 8.56            |
| 8  | 2008 | 107.98              | 9.45            | 262.16                      | 11.82           |
| 9  | 2009 | 115.52              | 6.98            | 278.19                      | 6.11            |
| 10 | 2010 | 128.58              | 11.31           | 306.66                      | 10.23           |
| 11 | 2011 | 142.70              | 10.98           | 345.44                      | 12.65           |
| 12 | 2012 | 166.99              | 17.02           | 381.74                      | 10.51           |
| 13 | 2013 | 186.39              | 11.62           | 456.39                      | 19.56           |
| 14 | 2014 | 227.63              | 22.12           | 549.53                      | 20.41           |
| 15 | 2015 | 275.33              | 20.96           | 723.15                      | 31.59           |

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## 2. Processing

- 74 milk processing enterprises.
- Total dairy farm located on 5 ecoregions (The North mountainous, the Red River Delta, the Central Cost, the Southeast and the Cuu Long River Delta).
- Exports reached 230 millions USD (2013)

## 3. Breeding

| Breeds  | 2004   | 2015 |
|---------|--------|------|
| Pure HF | 15.35% | 40%  |
| Hybred  | 84.65% | 60%  |

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## Average productivity (kg/cycle. 305 days)

| Year      | 2001  | 2005  | 2008  | 2010  | 2012  | 2013  | 2014  | Growth rate 2014/2001 (%) |
|-----------|-------|-------|-------|-------|-------|-------|-------|---------------------------|
| HF Hybred | 3,300 | 3,700 | 3,800 | 4,000 | 4,100 | 4,400 | 4,600 | 39.39                     |
| Pure HF   | 4,000 | 4,600 | 4,900 | 5,100 | 5,200 | 5,400 | 5,700 | 42.50                     |
| General   | 3,500 | 3,900 | 4,200 | 4,500 | 5,100 | 5,200 | 5,300 | 51.43                     |

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## Scientific and Technical Applications

- Using sperm and embryos sexism → 87-92 % of calf born.
- Using TMR → higher 8-10% of productivity.
- Information technology application
  - + Using herd management software
  - + Use electronic systems to detect estrus, mastitis.
  - + Coordinating diet regime.
  - + Preparation and packing sperm.

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## Scientific and Technical Applications (conts)

- Using molecular genetics
  - + Identify genetic signals for evaluation; Breeding selection; assess the level of genetic variation; assess blood.
  - + Early selection bulls/cows.



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## Scientific and Technical Applications (conts)

- Using reproductive technologies
- + Sperm and embryos technology.
- + Series heat stimulation and ovulate stimulation.
- + Use separate hormones to coordinating treatment and improve fertility in ruminal in general, particular in cows.
- + In vitro fertilization; cloning technology.
- + Cutting and dividing embryos by single cells.

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## THE LIVESTOCKS METHOD

1. High - tech applications in association with milk processing: the features of this scale is the large-scale livestock (from thousands to tens of thousands of dairy cows). Represented by: TH True Milk group, Hoang Anh Gia Lai group....
2. Medium scale with high - tech applications in several fields: the features of this scale is the medium-scale livestock (from hundreds to tens of hundreds of dairy cows) in asociation households. Milk is collected by the companies. Represented by: Moc Chau dairy company, Friesland Campina, Đa Lat milk company, International dairy company, Lotamilks....

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## THE LIVESTOCKS METHOD

3. Medium scale with high - tech applications in several fields: the features of this scale is the medium-scale livestock less than thousand of dairy cows) in asociation households, milk for sale. Represented by: Vietnam Future milk, HoChiMinh dairy breeds company....
4. Household size (Small scale): less than 100 dairy cows. Milk production for sale to companies. Farmers can link to establish a cooperatives. Represented by: Evergrowth cooperatives in SocTrang province; Ngo May Cooperative in Binh Dinh province.

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## LESSON LEARNED

1. Necessary and sufficient conditions for effectively
  - Necessary conditions : passion, basic knowledge, human resources and market.
  - Sufficient conditions : enough land for plant materials, budget, number of dairy cow and handling fluctuation of market.
2. The associate between producers and company with the milk processing plant.
  - Sustainable basis of this link:
    - + harmony of interests;
    - + ensuring the development sides
    - + creating the best products

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3. Effectiveness of application high technology:
  - minimize the adverse impact of ecological conditions
  - create conditions for promoting the full cows potential.
4. The attentions and the encouragement of the authorities at all levels.
  - Standards specific.
  - Decentralized milk quality
5. The others
  - Training to farmers; compliance processes
  - Ensuring adequate food quantity and quality and environmental safety: preventing diseases (reproductive diseases, footsore, mastitis and other diseases).

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## ORIENTATION FOR DEVELOPMENT

### ORIENTATION

- Not too focused on the number of dairy cows.
- Priority to improve the breeding quality and productivity. Breeding should adapted well to the conditions of the country ecological environment in Vietnam.
- Focus on high-tech farms with processing system.
- Farm size depends on land and investment conditions.
- Reducing small-scale farms, households (with specific reduction schedule).
- Encouragement medium-scale farms (gradually stabilized at 50-100 heads in the future).
- Sustainable and effectiveness development.
- Ensuring food safety.

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## THE GOAL

- Total milks production: 2.6 billion liters in 2020 and 3.4 billion liters by 2025;
- The average consumption reaches 27 liters/person/year in 2020 and 34 liters/person/year in 2025;
- Fresh milk production reached 01 billion liters → to satisfy 38% of demand 2020 (1.4 billion liters → to satisfy 40% of demand by 2025)

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## SOLUTIONS

### 1. Scheme

- Regional planning
- Provincial planning
- Land and grassland planning.
- Farm internal planning

### 2. Science and technology

- Breeding: Using high technologies in breeding multiplication and selection; information recording; construction of Breeding assessment and analysis center; Using HF – Vietnam hybrid
- Using TMR feed.
- Preventing the diseases
- Training courses



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## SOLUTIONS (cont)

3. Association.
  - Company– farmers
  - Company – cooperative – farmers.
  - Objective:
    - Reducing product costs and price.
    - Collecting and processing 100% of products basic on the safty ensuring.
  - Sustainable cooperative basis on interests harmony.
  - Joint venture modeling depends on the development process.

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## SOLUTIONS (cont)

3. Policy should be:
  - Creating conditions on land, environmental remediation support. electricity, road... particulary in moutainous and ethnic area.
  - To encourage enterprises to invest in high technology dairy farming: support the loan, tax incentive, research training...
  - Public and transparency for dairy products (particularly liquid milk).



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## SOLUTIONS (cont)

4. Relations with other countries and international organizations
  - Comprehensive exchange learning for development countries.
  - Join the international organizations in dairy sector.
  - Technology transfer for developing countries.
  - Engaging experts who manage all or part of the dairy farm.



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THANK YOU!

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