

**Management issues and development  
to achieve sustainable dairy farming**  
— Case study of advanced dairy farms —

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# Background

- Weakening dairy production base such as shortage of farms and dairy cows
- Rapid diversification of production systems and corporate form of dairy
- Destabilization of the external environment surrounding dairy farming

# Purpose and Method

## Purpose

- Clarify challenges and countermeasures for sustainable dairy production

## Method

- Understanding management and technology issues in dairy production
  - ⇒ Interview survey targeting dairy farmers by designating a management type

# Purpose and Method

Selection of survey farm

Advanced best practices

Type	Family farm		Large-scale farm	
	Land use	Purchased feed	Land use	Purchased feed
Production specialized	A farm	—	C farm	G farm
	B farm		D farm	H farm
				I farm
Diversified	E farm	F farm	—	J farm

Challenges in advanced farms

note1) Land use: Self-sufficient in most of the roughage in farm and region

note2) Green: Hokkaido, Blue: Prefecture

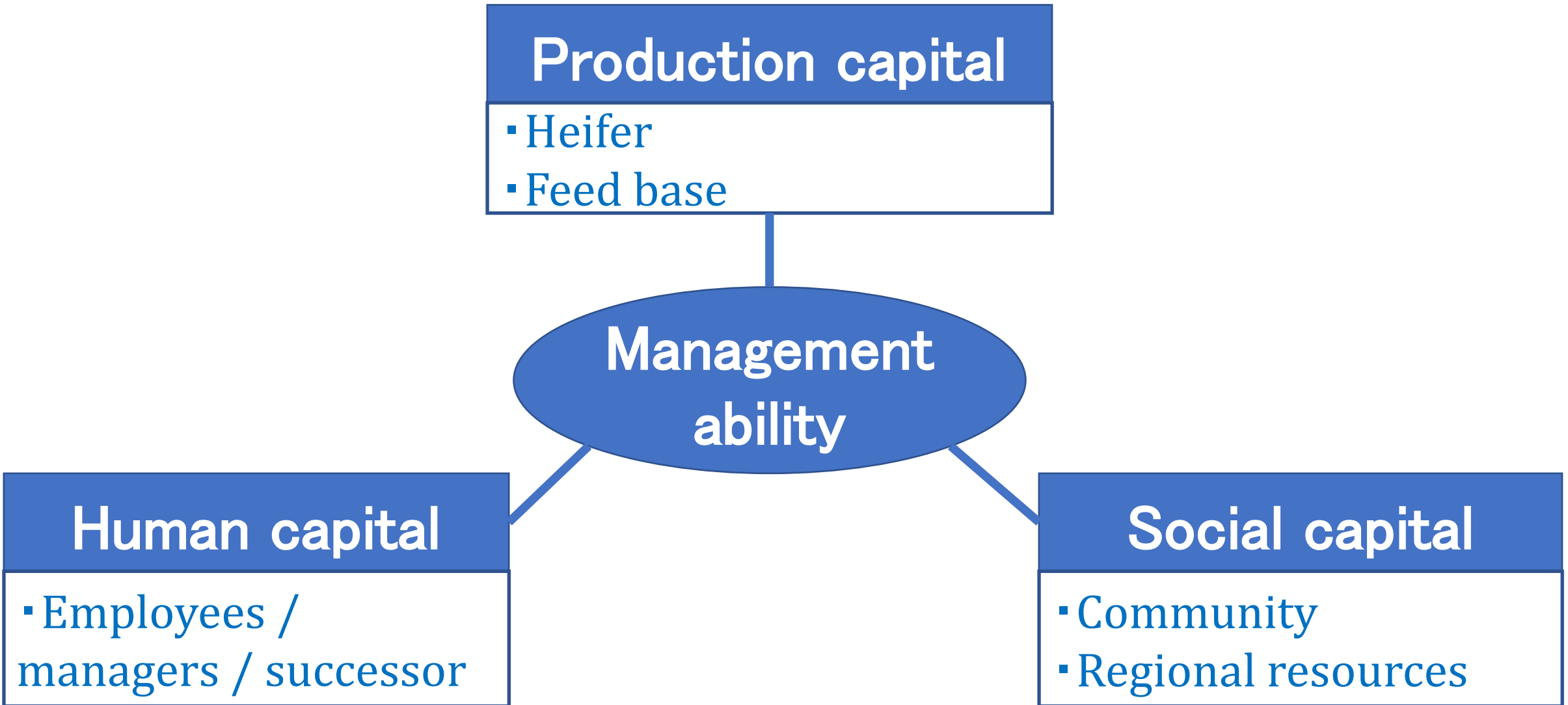
# Result (1): Outline of the survey farms (2017)

Type	Scale	Family farm		Large-scale farm	
		Land use	Purchased feed	Land use	Purchased feed
Production specialized	Milking cow (head)	80~200	—	450~850	400~2000
	Farmland (ha)	80~150		250~400	40~170
	Milk production (t)	700~1700		4300~8500	5000~17000
	Labor force (person)	4~6		12~33	18~71

# Result (1): Outline of the survey farms (2017)

Type	Scale	Family farm		Large-scale farm	
		Land use	Purchased feed	Land use	Purchased feed
Diversified	Milking cow (head)	70	40	-	290
	Farmland (ha)	28	4		0
	Milk production (t)	590	360		3000
	Labor force (person)	4	4		21
	Diversification department	Processing and direct sales of dairy products			Processing and direct sales of dairy products

# Result (2): Management type and management issues





# Result (2): Management type and management issues

## Labor force (employees / managers)

- In large-scale farm, employee recruitment and improving management ability are common issues
- Even in family farm, improving management ability is an issue in diversified type



- Expansion of business scale and increase of business divisions  
⇒ Necessity of business management ability such as employees and funding
- Strong intension to expand the scale in large-scale farm  
⇒ The problem of employee recruitment is highly urgent

# Result (2): Management type and management issues

## Labor force (employees / managers)

- Labor shortage at the local level is becoming more serious in certain areas of Hokkaido



- Externalization such as contract work is progressing  
⇒ Labor shortage of regional organizations is a problem for farm
- Wages rise due to reliance on employment of outside the region

# Result (2): Management type and management issues

## Labor force (successor)

- The successor is not listed as an issue because many of the owner's children are engaged in farming at this survey farm.
- There are many family farms that have no successors to their children, and the challenge is to succeed to a third party through buying and selling.
- In large-scale farm where the owner's family does not succeed, the challenge is to train the successor as a manager.

# Result (2): Management type and management issues

## Production resources (feed)

- Although farm had to be an object feed cost reduction in future, there was no farm that set the issue of feed procurement at present.



- Land use type  $\Rightarrow$  Procurement of roughage by self-sufficiency or cooperation with rice farming  $\Rightarrow$  Low-cost feed
- Large-scale farm of purchased feed type  $\Rightarrow$  TMR mainly for eco-feed  $\Rightarrow$  Low-cost feed
- Regarding cooperation with rice farming, stability of rice policy is a future issue.

# Result (2): Management type and management issues

## Production resources (heifer)

- Self-nurturing for land-use and purchased feed-type of family farm
  - Purchase (import) is the basis for purchase feed type of large-scale farm
- ↓
- Since there is a strong tendency to expand the scale, securing heifer is an immediate issue.
  - Efforts for self-nurturing respond to rising prices of first-pregnant COWS

## Result (2): Management type and management issues

### Manure treatment / Environmental problems

- Land use type ⇒ Treated with slurry or biogas, basically for self use
- Purchased feed type ⇒ Many farms composting and selling
  - There are consumers of compost such as horticultural farm in the area and it is suitable for sale
  - Location conditions where environmental problems are likely to occur because it is close to a residential area



▪ The issue is that the amount of investment in facilities required for manure treatment is extremely large.

⇐ Although it is a problem that can be solved by investing in facilities

# Result (2): Management type and management issues

## Financing

- Family farm  $\Rightarrow$  Low interest loan of government funds
- Large-scale farm  $\Rightarrow$  government funds and private bank  
Large-scale farm is oriented toward expansion



Government subsidy for barn construction

# Result (2): Management type and management issues

## Community

- Prefectures ⇒ Environmental issues, rice farming cooperation, consumer exchanges, etc. are required



High intension of the local community

- Hokkaido ⇒ Transition from family work based on group work to individualized work and progress of work contracting



- Family farm isolation, tendency to weaken regional identity



# Result (2): Management type and management issues

## Institutions / Policies

- Dairy farming in recent years is highly profitable due to rising milk prices



- High investment e.g. milking robots  $\Rightarrow$  Fixed ratio rises



- Falling milk prices have a big impact on profitability



- Stabilization of milk price is an important issue

- Management based on rice farming cooperation



- Stability of rice policy is an issue

# Discussion – Challenges and countermeasures –

## Human capital

- Management training ⇒ Management school for family farm  
[Government]
- Employee recruitment ⇒ Improvement of working conditions and environment ⇒ Improvement of dairy profit  
[Management improvement]
- Securing successors ⇒ Establishing a successor to a third-party system ⇒ Financial support [Government]

## Environment issues

- Manure treatment  $\Rightarrow$  Promotion of land-use dairy farming [Management improvement / government]
- Environmental issues  $\Rightarrow$  Promotion of land-use dairy farming [Management improvement / government]

# Discussion – Challenges and countermeasures –

## Milk price / Technology

- Milk price  $\Rightarrow$  Land use type milk price and scale expansion  
milk price [Government]
- Technology  $\Rightarrow$  Technical training, optimal combination  
[Management improvement]

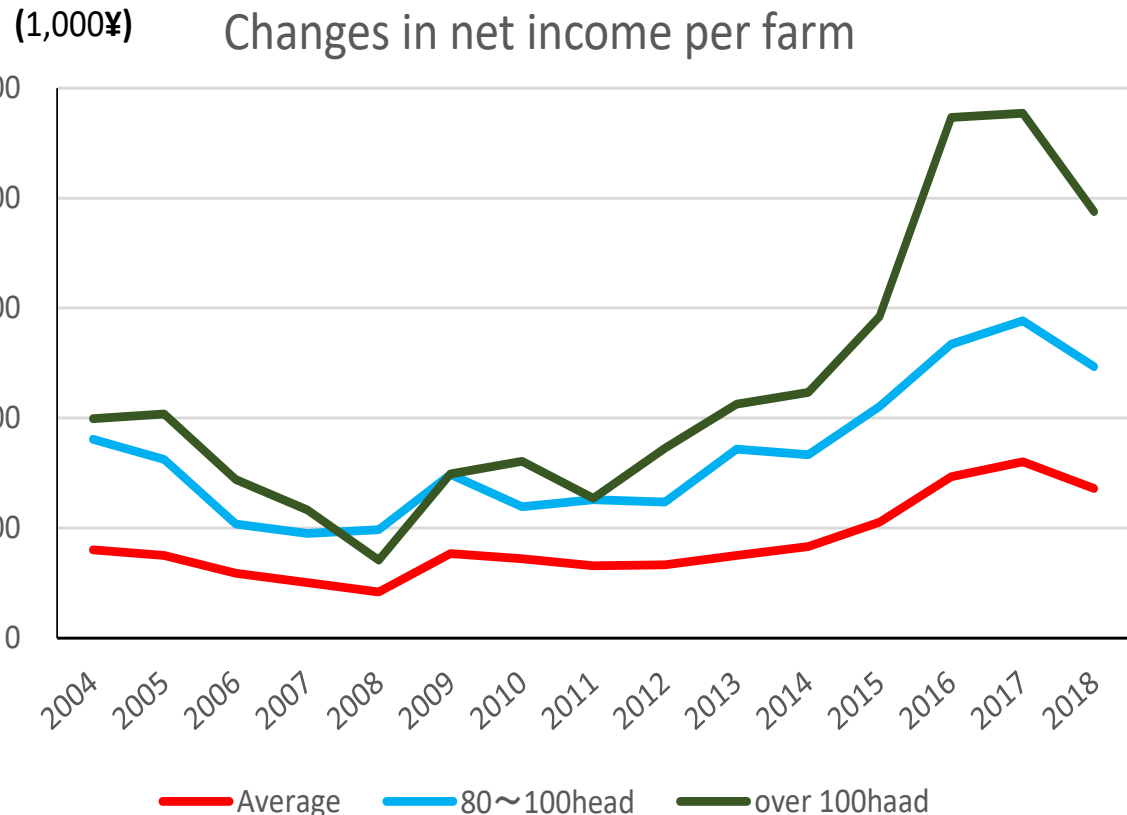
# Discussion – Outlook and Challenges –

## Environment issues

- Manure treatment ⇒ Regulated by law
- Water quality ⇒ Regulated by law for large-scale farm
- Green house gasses ⇒ Research and Development
  
- Animal welfare ⇒ The government is committed to the spread of "feeding management **guidelines** corresponding to the concept of animal welfare."

# Discussion – Outlook and Challenges –

## Economic outlooks of dairy farms

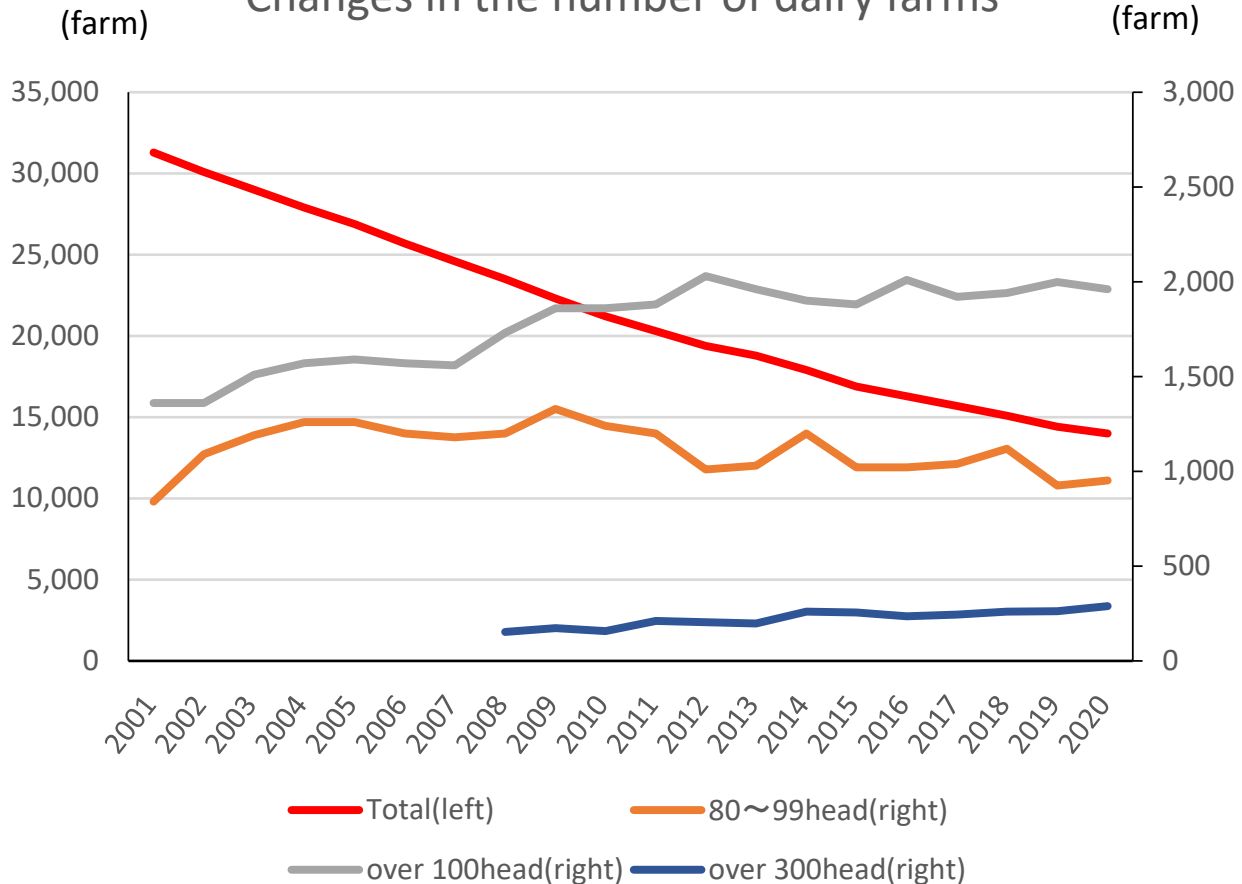


- Income has been on the rise in recent years
- Significantly rising on a large scale

# Discussion – Outlook and Challenges –

## Economic outlooks of dairy farms

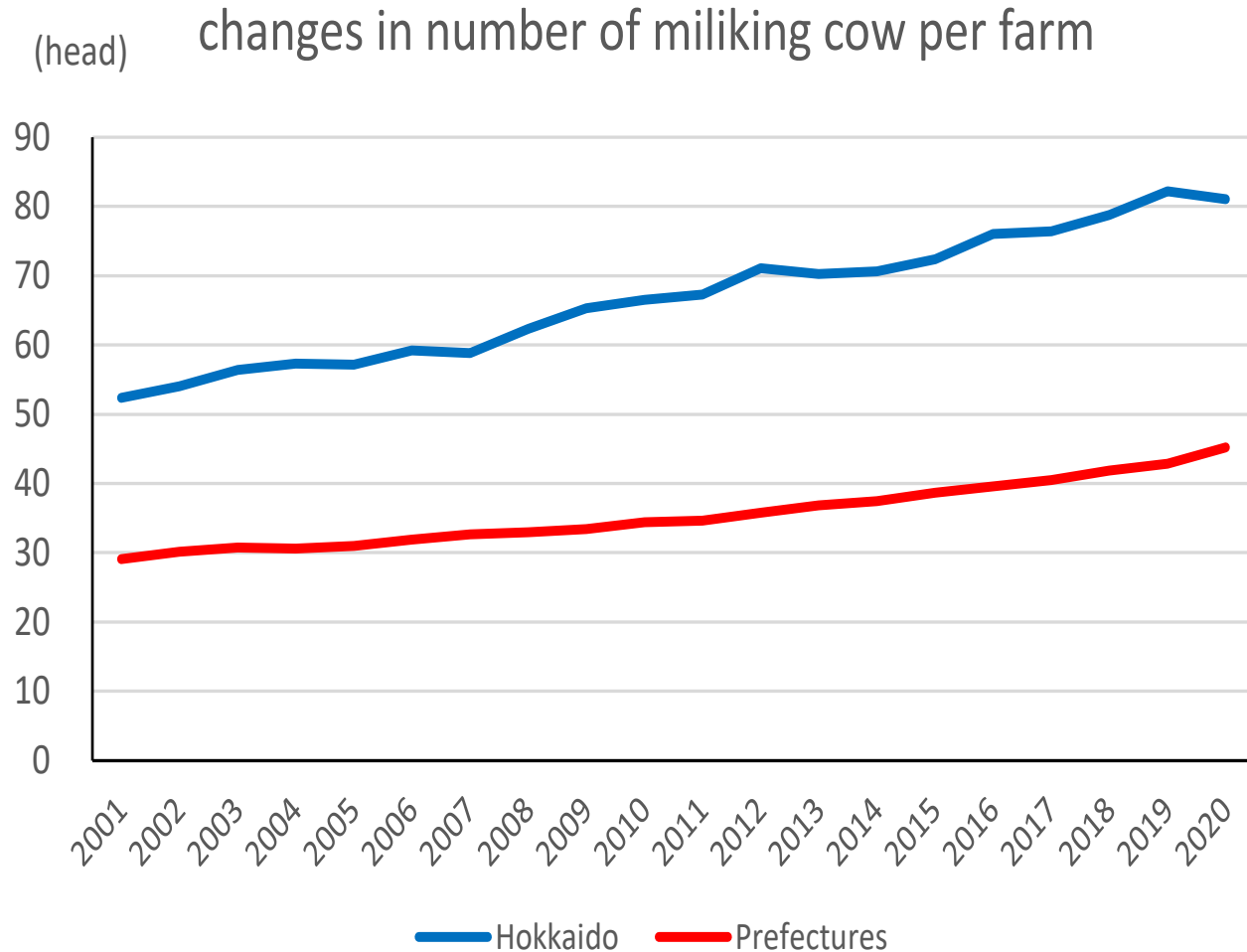
Changes in the number of dairy farms



- The number of dairy farm is declining consistently
- Large-scale farm is increasing

# Discussion – Outlook and Challenges –

## Economic outlooks of dairy farms



- The number of dairy cows per farm is increasing
- Differences between Hokkaido and prefectures



# Discussion – Outlook and Challenges –

## Economic outlooks of dairy farms

- Dairy production ⇔ Small number of large-scale farm



Management issues in large-scale farm will become more important

e.g. Employee recruitment and environmental issues

- Land use type ⇒ Survival of family farm is a big issue

# Thank you for your attention

