

FUTURE DAIRY FARM EMPLOYMENT – AN APPLICATION OF THE HUMAN CAPABILITY FRAMEWORK

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Based on a Project Funded by *Dairy InSight*.

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Significance of dairy farming

- NZ's top export earner \$7.06 billion to 30.6.02.
- 7 percent of NZ's GDP.
- BUT has had labour and employment problems at least since the 1930s.
- Most recent 'labour crisis' since mid 1990s.

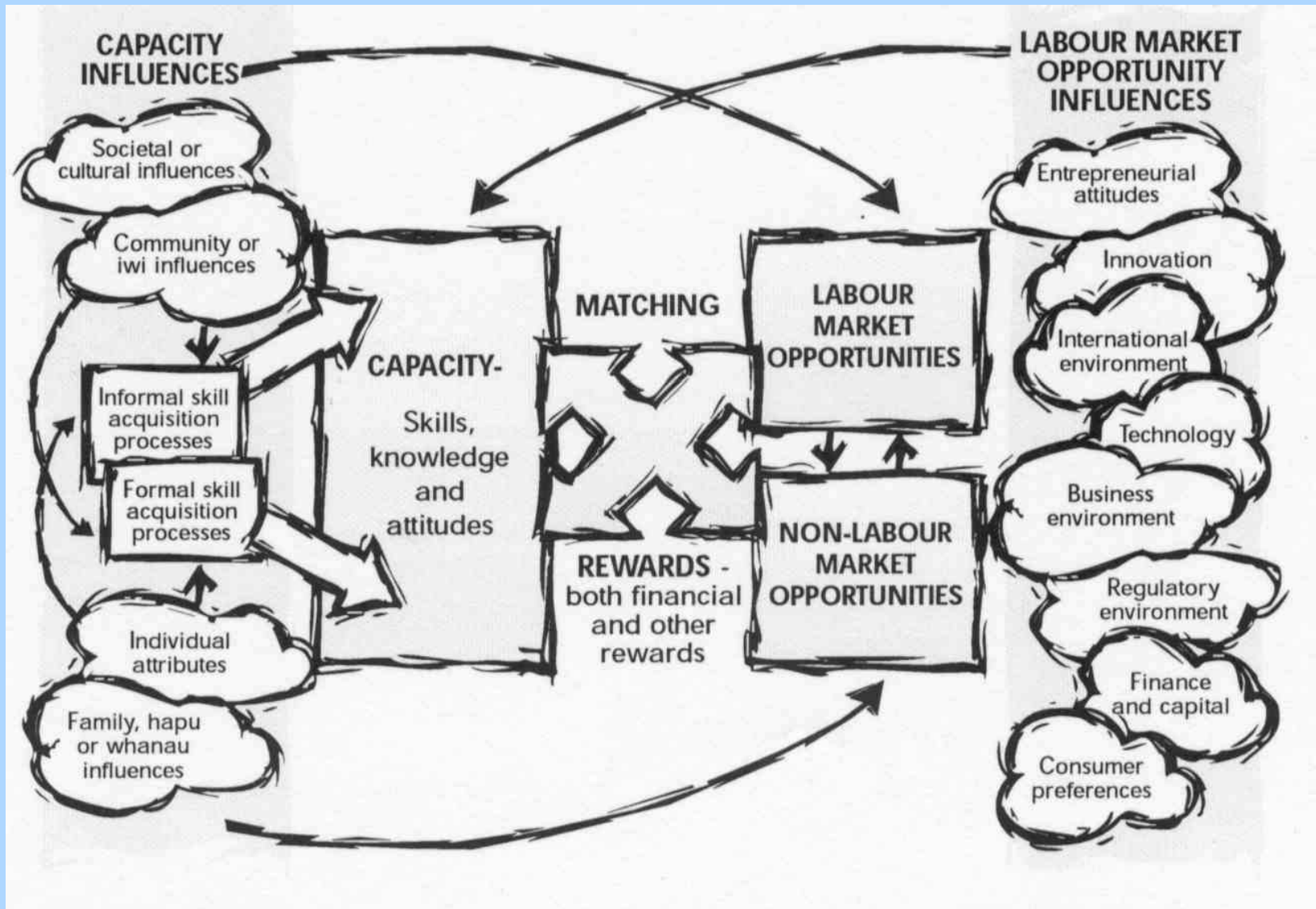
Aims of the project funded by *Dairy InSight*

- To establish the employment needs of the industry from a study of the future dairy farm labour market.
- To estimate future labour required and available.
- To provide full discussion of the factors affecting those estimates.
- To provide a foundation for future studies of employment in dairy farming.

Research Strategy

- To use the Human Capability Framework to analyse the dairy farm labour market.
- Used in previous research projects, with acceptability to lay audiences.
- Combines well social, economic, demographic and technological information.

Human Capability Framework (DoL, 1999).



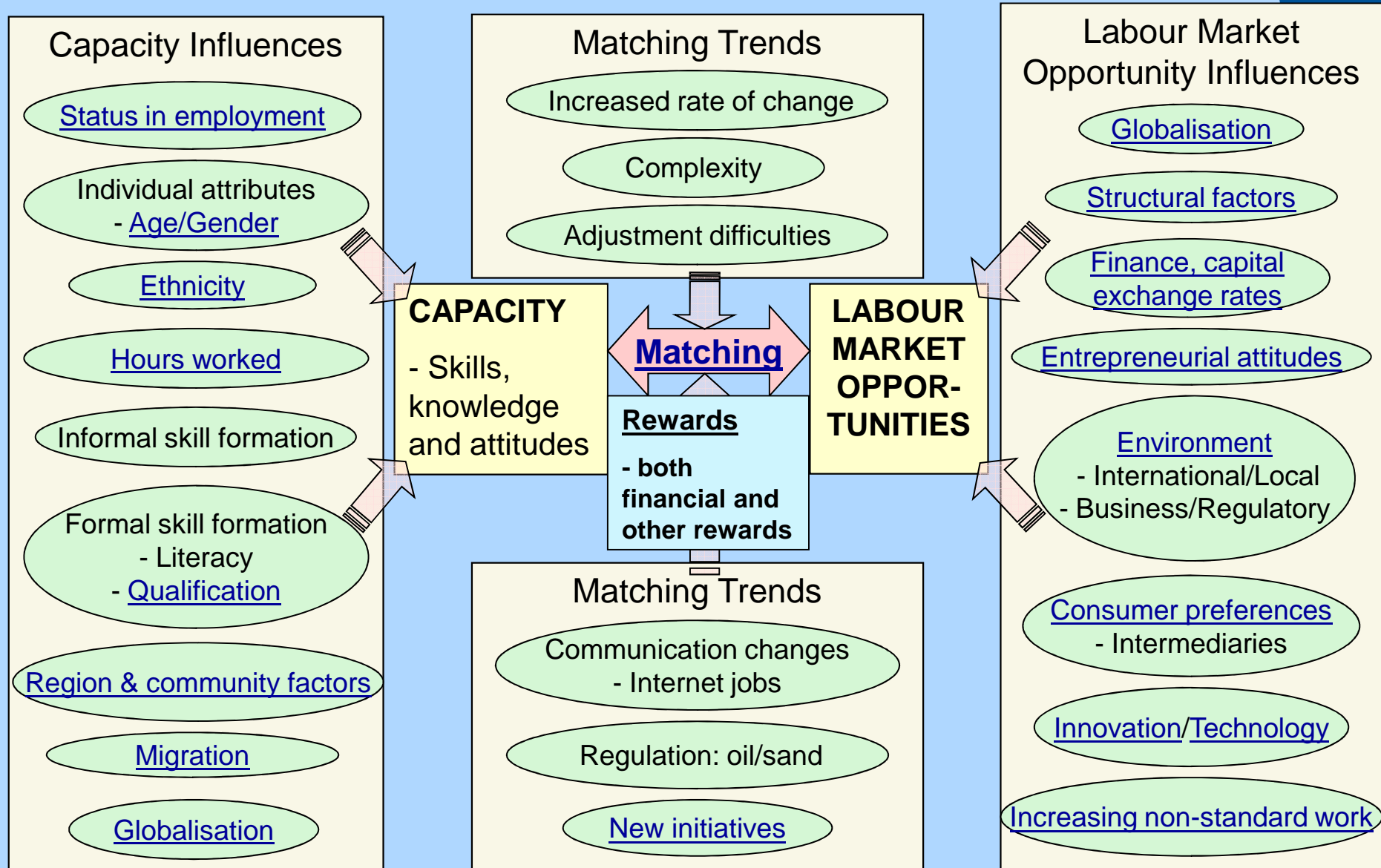
Focus of this paper

- Data sources for this project were partial e.g. No agricultural labour statistics since 1996.
- We know more about individual dairy cows than individual staff members.
- Dependent on *Census of Population* data.
- No systematic analysis of this source of data had been conducted. *Dairy InSight* funded this project.
- This paper focuses chiefly on the supply side of the HCF, the primary research done.

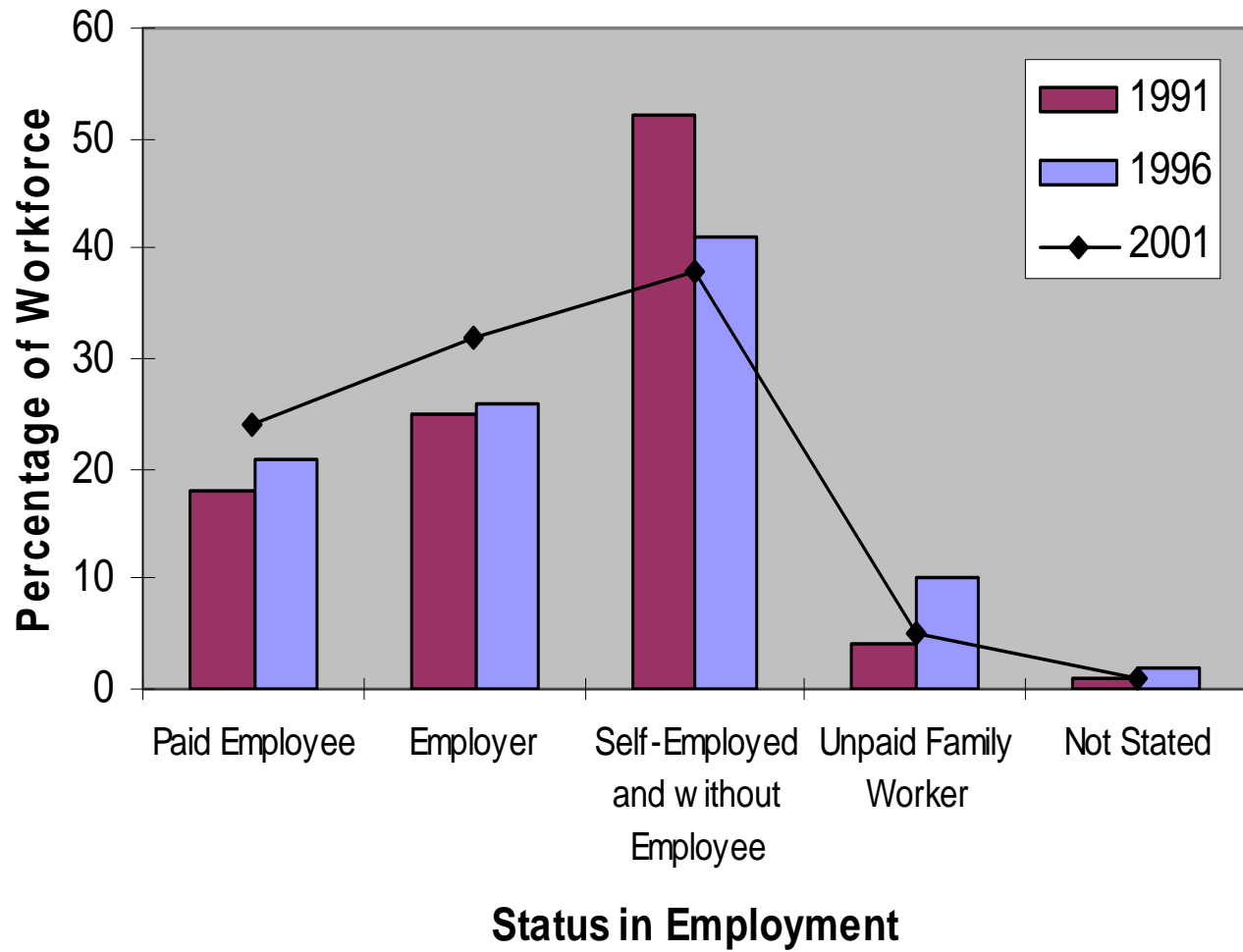
Capacity – the future supply of dairy farm staff

- Dairy farm staff: Occupation Classification 61211 – all dairy farmers and dairy farm staff *in their main job*: **26,331** people employed in 2001.
- Includes: cadets, farm hands, managers, supervisors, workers, stud farmers, milking equipment operators, and sharemilkers.
- Comparable data available only for 1991 (28,134), 1996 (29,964), and 2001 (26,331).
- The dairy industry in 2001 covered 35,037 people, for many of whom it was not ‘their main job’.
- The tables following relate to the 26,331 for whom it was the main job.

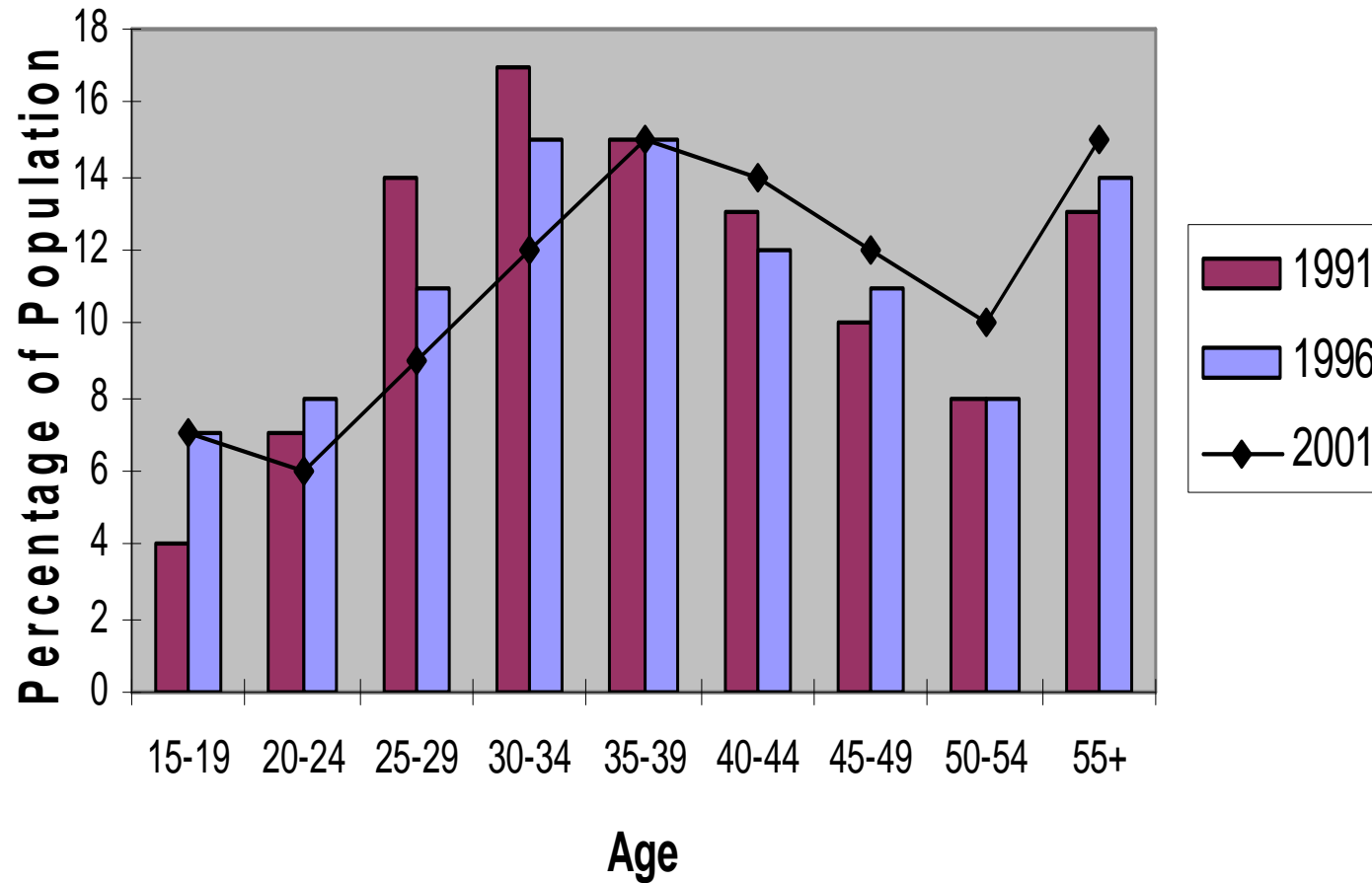
Key Capacity, Matching, and Opportunity Trends for the Dairy Farm Labour Market (Workforce 2010) - highlighting interactions within the Human Capability Framework



Status in Employment over Time



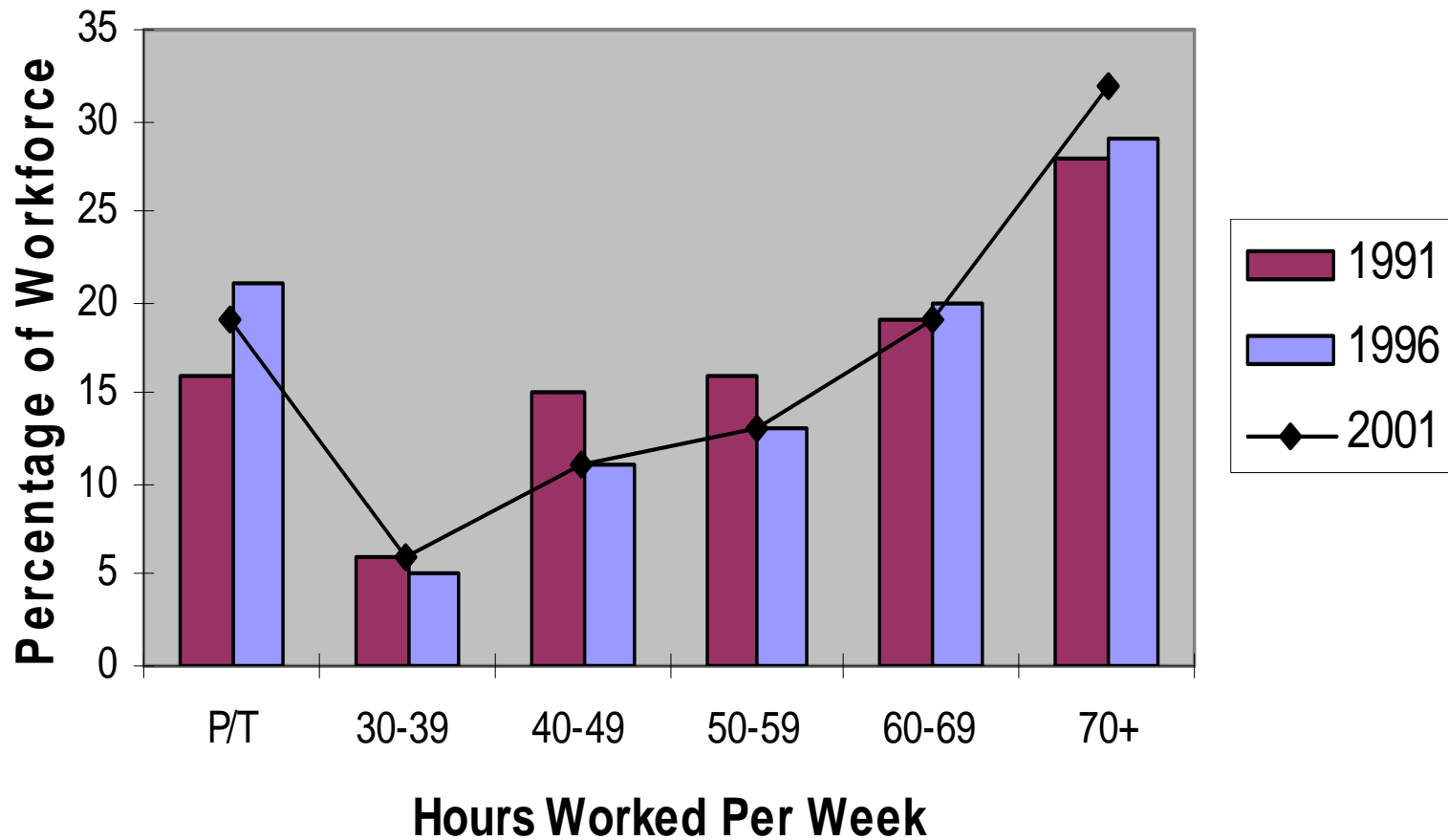
Age Distribution Dairy farmers/Dairy farm workers



Ethnicity	Occupation Agriculture	% Population Increase 1991-2001
Total European	122610	- 3.0
Total Maori	14850	+ 21.0
Total Pacific	2208	+ 38.7
Total Asian	2736	+ 138.0
Total Other	168	n/a



Hours Worked by Census Year



Qualifications

- 1 in 4 had no qualifications (dairy farmers/dairy farm workers 1 in 3.5)
- 1 in 3 had post school qualifications (dairy farmers/dairy farm workers 1 in 4)
- 1 in 5 had vocational qualifications (dairy farmers/dairy farm workers 1 in 4.7)
- 1 in 8 had a degree (dairy farmers/dairy farm workers 1 in 25)



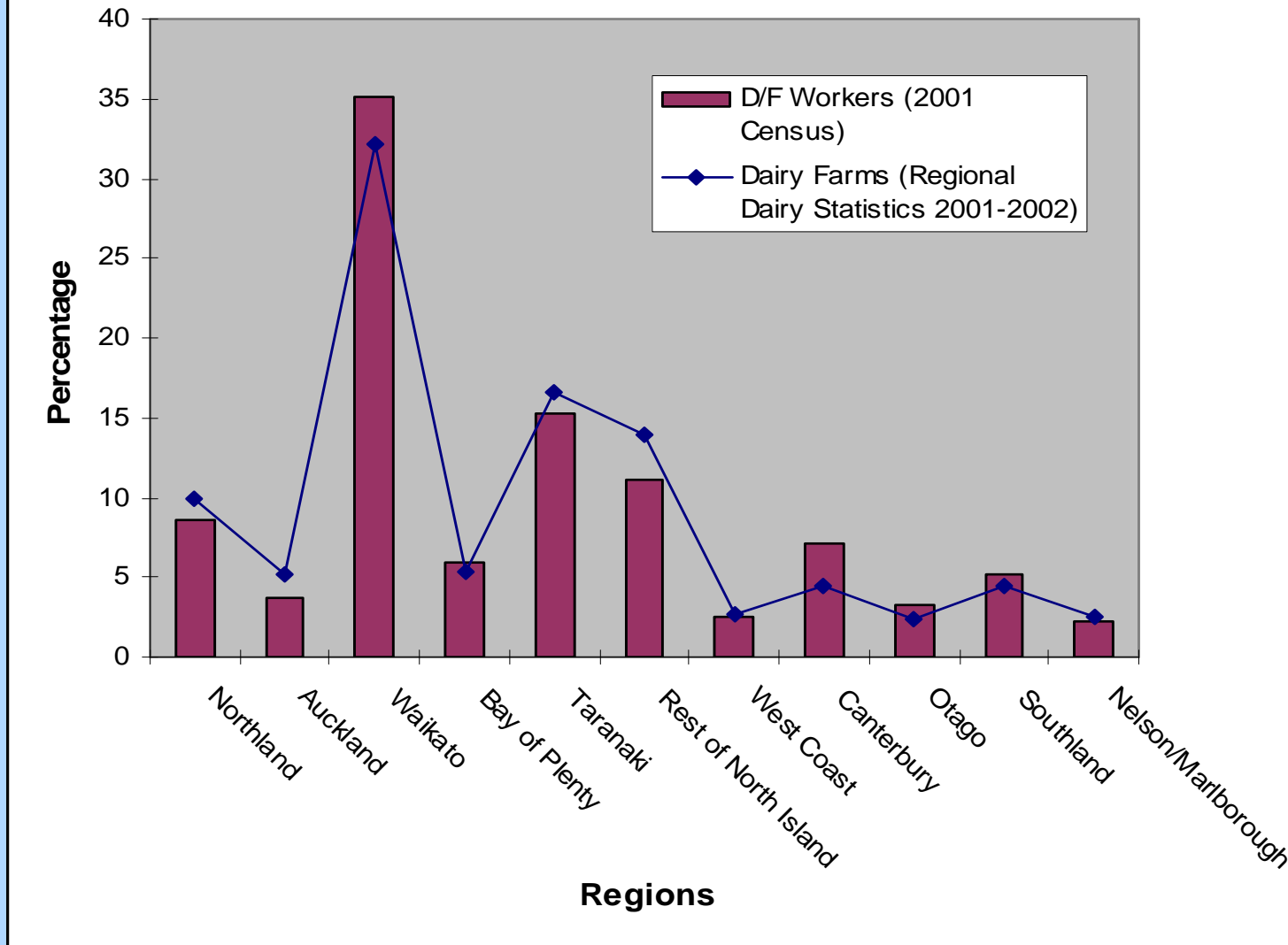
Highest Qualification	Number	Percentage
No Qualification	7602	29
School Qualification	10497	40
Vocational Qualification	5448	21
Degree	1035	4
Unidentified/Not stated	1749	6
Total	26331	100



Vocational Qualification	Male	%	Female	%	Total	%
Basic	750	20.6	360	19.9	1110	20.4
Skilled (Apprentices/Certs, Level 4)	1509	41.5	393	21.8	1902	34.9
Intermediate	447	12.3	147	8.1	594	10.9
Advanced (Certs/Dips, Level 6)	930	25.6	909	50.2	1839	33.8
Total	3636	100	1809	100	5445	100



Regional Distribution of DF Labour and Dairy Farms



Waikato/BoP dairy farming region

- North Island, traditional, long established.
- Typically owner occupier milks cows with one single helper.
- More time off with more staff to try and keep them.
- Strong demand for 50:50 sharemilkers.
- Moves from 50:50 sharemilking to managers on wages.
- More than average (15%) aged over 55 (W 16 and BoP 18%).
- Highest percentage with vocational qualifications (23%)
- High proportion 'self employed without employees' 42%



Canterbury dairy farming region

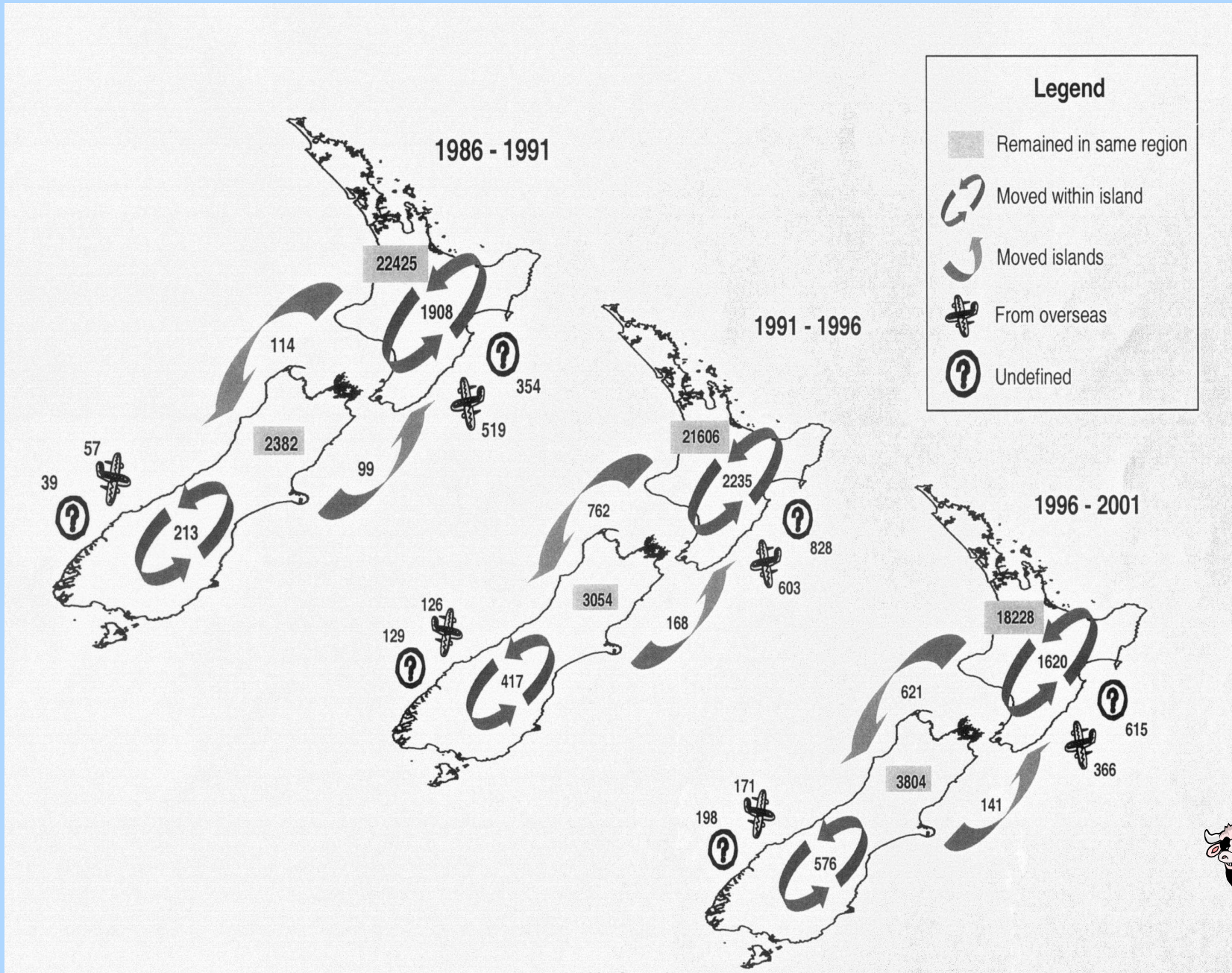
- South Island, little tradition, fast developing.
- Few large sharemilking positions.
- Corporates/owners are choosing to employ managers or equity managers.
- Prospect of individual farm ownership seriously under threat, discouraging prospective entrants.
- Dependence on overseas workers otherwise industry would be seriously under-staffed.
- Much younger dairy farm staff, more than average aged 15-29 (Canterbury: 15%, NZ 7%).
- Lowest percentage without qualifications (25%) and highest with degrees (5.5%), (NZ 29% and 3.9%).
- Only 12% 'self employed without employees' (NZ 38%), 46% paid employees (NZ 24%).



Dairy staff migrations

- Discovery that the Census records show where a dairy person was 5 years previously.
- ‘Gypsy day’, 1 June.
- Believed to be first empirical account of dairy farm staff migrations between districts and Censuses.





Globalization

- Increasing flow of ideas, goods and services, labour and capital across national boundaries. E.g.
 - Overseas dairy workers maintaining Canterbury dairy farms.
 - Prospect of privileged access to Chinese market



Structural factors

- Decreasing number of dairy farms but more cows over last 20 years.
- Less small herds, more large herds.
- More intensive stocking.
- Consequently, larger more complex farms/herds, need more management skills and more employees, who need managing.



Finance capital and exchange rates

- Favourable world dairy price scenario.
- Strength of NZ dollar.
- High levels of dairy farmer indebtedness, prospect of rising interest rates.
- Prospect of vicious cost/price squeeze.
- Past reaction? Cut labour costs – more difficult with larger farms, herds and more employees.



Entrepreneurial attitudes

- Typical of small business owners:
 - Difficulties of delegation.
 - Working very long hours.
 - Stressful lifestyle.
 - Dependence on employees.
 - Statutory compliance.
 - Less prospect of future farm ownership.
 - More equity farming possibilities.



Environmental factors

- International and business requirements for environmental quality standards.
- Maintenance of NZ's 'clean green image'.



Consumer preferences

- Customer perceptions mediated by supermarkets require acceptable standards of:
 - Product traceability (risk management: food safety and health concerns).
 - Animal and employee welfare (e.g. Eurepgap protocols).
 - Ability to document and trace back production.
 - Need for greater literacy and computing skills



Innovation

- Adoption of 'Once-a-day' milking widely across industry.
- Positive impact on QA programmes.
- Breed for OAD characteristics and increase stocking rates to maintain yields.
- Reduced demand for labour.
- Dairy staff 'get-a-life'!



Technological change

- Labour saving impact of introduction of Automatic Milking Systems e.g. Dexcel *Greenfield* site at Ruakura.
- Not just a robotic milker, but a farm controllable by cell phone from the beach!



Non standard work

- New forms of employment have been introduced to cope with the labour shortage.
- Working outside normal hours/shifts.
- Proportionally more women employed in dairying than agriculture, and increasing.
- More casual work.
- More flexibility.



Matching

- Has problems.
- Can do better.
- Increased level of public debate highlighting problems and prospects.



Matching cont.

- Industry initiatives:
 - *Human Capability in Agriculture and Horticulture*
 - *Dexcel's People4Dairying* programme and 'tool kit'
 - Improving recruiting practices etc. (ADEG).

Estimating Future Dairy Farm Staff

- Very difficult and uncertain enterprise (q.v. Canterbury horticultural employment 1993).
- Holmes and Cameron suggest some 25,500 staff equivalents working in dairy farming in 2030.
- That seems reasonable in light of all the uncertainties described.

Conclusions and Recommendations

1. Supply of labour is likely to diminish and not meet future demand.
2. Literacy/technical requirements will continue to increase.
3. Awareness of problems and need to change in sector must continue.
4. Labour data need to improve.
5. OAD milking could help farmers 'get-a-life'.
6. The Automatic Dairy System could improve labour productivity.
7. Temporary migrants might help short-term transition problems.

Future Research

- Further study of the barriers to entry to dairy farming careers and jobs will continue to be important.
- The labour force implications of OAD milking and AMS merit serious monitoring, as they could provide the huge increase in labour productivity the industry is seeking.