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The Sheep Industry—Australia in the Global Scene

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Abstract

Australia's global trade in meat, wool and live sheep strongly influences strategies that can be used to improve its competitive position and profitability for producers. Growth in the sheep industries is dependent on export markets. Australian sheep meat production is split equally between domestic and export markets. Sheep meat exports from Australia account for about 6% of international trade. Finishing of lambs on grain diets has enabled Australia to efficiently produce higher carcase-weight lambs suitable for the US market. Productivity gains in Australian production can be captured via the sale of extra Australian sheep meats into large international markets. Australia accounts for about 40% of global trade in live sheep, with most markets centred in the Middle East. This trade is split between culturally based demand and supply of low-priced meat in competition with other meats such as chicken. Proximity to the Middle East and clean health status are competitive advantages for Australia. This is a volatile and seasonal market that has a significant impact on Australian sheep prices, particularly in Western Australia, which supplies about 80% of Australia's live sheep exports. Reducing volatility in the live sheep market and developing demand for chilled and frozen sheep meat will provide benefits to Australian producers. Australia produces about 30% of total world wool, and is the dominant producer of finer Merino wool, accounting for about two thirds of global production. This dominant global position means that any extra production from Australia is likely to have a direct impact on world price. Productivity gains in fine Merino wool production must be matched with market demand building to sustain global price to enable Australian producers to capture benefits in profitability. Over the past 15 years, China has emerged as the world's largest producer of sheep meats and a major producer of wool. China is also a major consumer of sheep meats and wool.

Introduction

Australian Agriculture and its production of food and fibre is an important part of the Australian economy. Agriculture accounts for $28.2 billion or 22% of total Australian exports even though less than 4% of the workforce is involved directly in agricultural production (Productivity Commission, 2005). High labour productivity growth (3.3% p.a. for the past 30 years) places agriculture third among all Australian industry sectors. Agriculture has also had the highest capital productivity growth at 2.7% p.a., making it one of the top performing sectors of the economy and providing a competitive basis for Australia to develop and maintain overseas markets for sheep meat and wool.

Different industries within Australian agriculture have different levels of productivity. Cropping, cotton and wine production have all had high performance, averaging about 3% productivity growth p.a., through adoption of new technologies including genetic improvement and farm management. The sheep industry has had lower levels of productivity growth, with modest gains in sheep meat production and near zero gains for about 60% of wool producers. Those sheep producers (about 5%) who are adopting improved management and technologies are achieving sustained high productivity gains in excess of 4% p.a and are reaping the benefit in profitability.

Improvement of productivity is essential for an industry to sustain its competitive position against alternative land uses and in international markets. Despite the generally low adoption of

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new technology and low productivity growth, the sheep and wool industries currently account for $3.6 billion annually in export earnings, or 13% of total agricultural exports. Just over 50% of sheep meat and over 95% of wool is exported. Industry growth is dependent on increasing the volume and value of these exports in competition with other global suppliers. This article discusses the status of Australia's sheep industries in relation to other international producers and competitors.

How many sheep are there and in which countries are they?

Over the past 40 years, the world sheep population (Fig. 1) has averaged 1.04 billion, ranging from 0.96 billion in 1961 to 1.17 billion in 1990 following a period of high wool prices (FAOSTAT, 2005). The major wool producing countries, Argentina, Australia, China, New Zealand, South Africa, the United Kingdom and Uruguay, have averaged 414 million sheep or 40% of the world sheep population since 1961, but just 37% since 2000. Australia, as the dominant producer of wool and a leading producer of sheep meat, has averaged 14% of the world sheep population since 1961, although this level is now at 9% due to decreased sheep numbers in Australia and increased sheep numbers in other countries, most notably China.

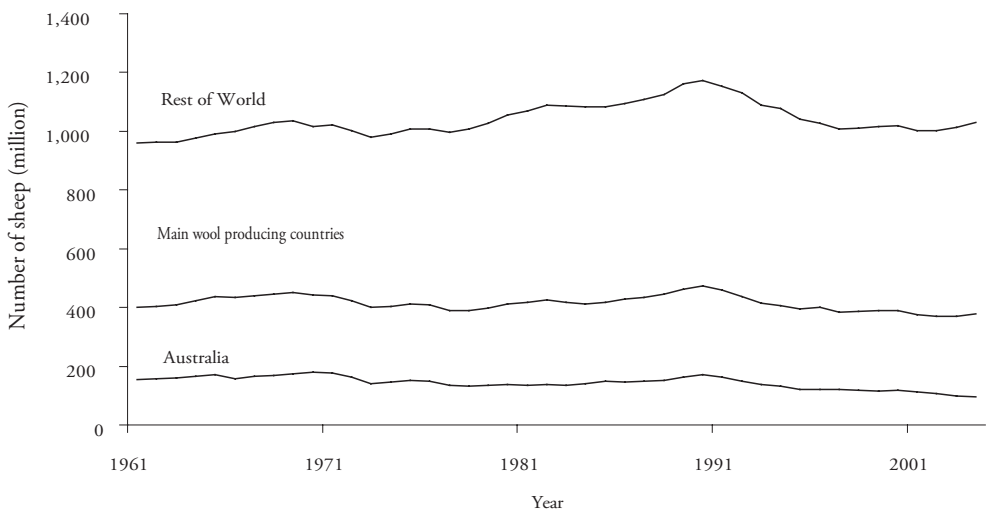

Fig. 1. Trend in sheep population (million head) for Australia, other main wool producing countries (Argentina, China, New Zealand, South Africa, the United Kingdom and Uruguay) and the rest of the World from 1961 to 2004 (FAOSTAT, 2005).

The world sheep population in 2004 was 1.03 billion, close to the 40-year average. Countries with the highest sheep populations in 2004 (FAOSTAT, 2005) are shown in Fig. 2. The top eight of these, China through to South Africa inclusive, account for 50% of the world population. The major wool producing countries are identified by the shaded bars.

Australia's sheep population (Fig. 3) increased during the first 70 years of the 20th century, peaking at 179 million in 1970. In the final years of past century, sheep numbers dropped to 130 million in 1983, and returned to 170 million in 1990 before dropping below 100 million in mid 2003 Australian Bureau of Statistics).

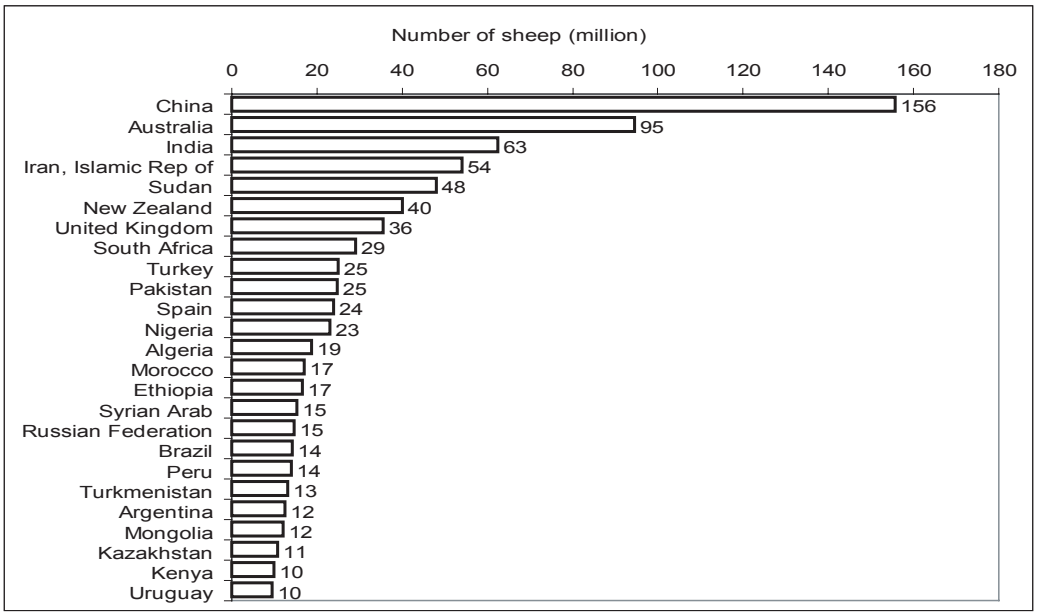

Fig. 2. Sheep population (million head) in 2004 for the top 20 countries. The main wool producing countries are highlighted with shaded bars. (FAOSTAT, 2005)

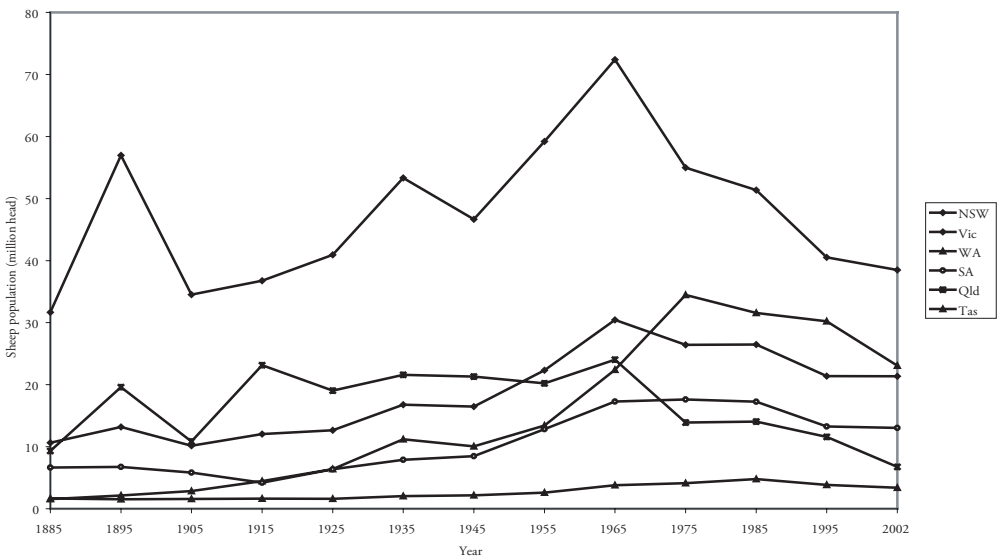

Fig. 3. Australian sheep population (million head) by state for the period 1885–2002. Includes both sheep and lambs. Data compiled from Australian Bureau of Statistics yearbooks and state statistical summaries (Australian Bureau of Statistics, 2003).

A feature of the sheep population has been the rapid fluctuation in sheep numbers that has occurred, principally due to severe drought. From 106 million sheep in 1892, the population crashed by 50%

to just 53 million in 1903, then rebounded to 98 million within eight years. Between 1970 and 1983, sheep numbers dropped 28% from 179 million to 130 million before rising 31% in just seven years to 170 million. Since 1990, we have seen a 40% drop to 100 million, due principally to the lower profitability of wool relative to other farm enterprises such as cropping.

New South Wales has always maintained the largest flock of any Australian state. Up to 1910 it had over 50% of the national sheep population but by 2003, the population was 33.7 million sheep, or 34% of the national flock. For the 50 years to 1945, Queensland contributed 20% of the Australian flock, but since then this level has fallen to a current contribution of just 5%, or 4.8 million sheep. Western Australia has increased its production relative to that of other states and now has 23.9 million sheep and ranks second after New South Wales and just ahead of Victoria, which has 20.4 million sheep.

Australia's sheep flock has been and is still dominated by Merinos. Since the early 1990s, the decrease in sheep in Australia has been most marked in Merino wethers; ewe numbers did not fall to the same extent. As a percentage of the Australian flock, Merino ewes increased from about 39% in 1992 to over 47% in 2003 (Martin et al., 2004). This provides a strong base from which to increase total flock numbers and to supply lambs to sheep meat markets.

Key points about sheep numbers

- With 95 million sheep, Australia has the second largest sheep flock in the world after China, which has 156 million sheep.
- With the exception of China, in which sheep numbers increased steadily, all the major wool-producing countries experienced declines in sheep numbers over the past decade.
- China has by far the largest flock and is a major supplier of sheep meat and wool to both domestic and international markets.
- Iran, Sudan, Pakistan, Turkey and Ethiopia have significant sheep populations that contribute to sheep meat supply to the Middle East.

Trade in live sheep

There is an extensive trade in live sheep between countries world-wide (Fig. 4), which peaked in the early 1990s at over 20 million sheep per year.

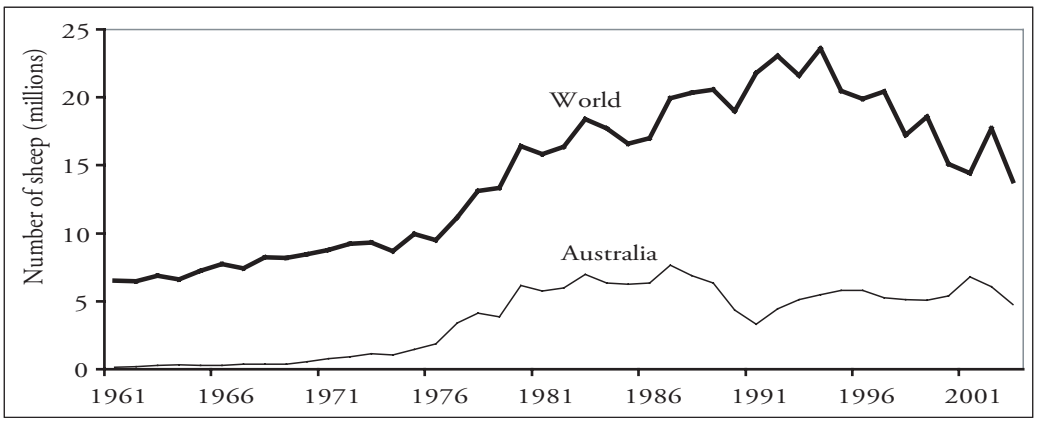

Fig. 4. Trend in sheep exports (million head) for Australia and the world between 1961 and 2003 (FAOSTAT, 2005).

By 2003, international trade had fallen to 13.8 million sheep. Australia is a significant source of live sheep trading despite its island status; the live sheep trade exhibited rapid growth during the 1970s.

During the 1980s, trade ranged from 5.7 to 7.7 million sheep per year. During the ten years to 2003, sheep trade from Australia remained strong, ranging from 4.8 to 6.8 million sheep per year.

Australia has an international reputation as a source of disease-free livestock suitable for human consumption. Western Australia has dominated the supply of live sheep for export, averaging 73% since 1990 and supplying 83% in 2004. South Australia and Victoria contribute most of the balance of sheep exported. Over 90% of the sheep exported are delivered to the Middle East (Fig. 5). The most consistent market has been Kuwait. Saudi Arabia has had a significant impact since 2000—both through rapid expansion of imports and total withdrawal in 2004. In 2004, Kuwait (37%), Jordan (27%) and Bahrain (14%) were the most important markets for Australia.

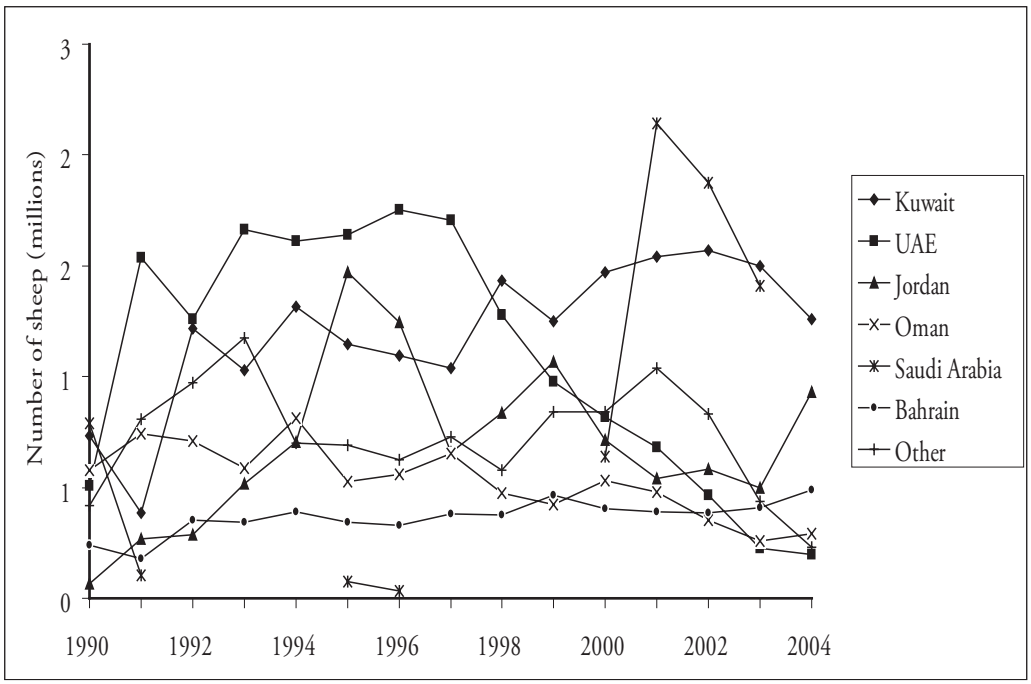

Fig. 5. Exports of live sheep (million head) from Australia by country of destination for the period 1990 to 2004. Livecorp; http://www.livecorp.com.au/downloads/Sheepdest04.pdf; accessed in October 2005).

Key points about live sheep exports

- Australia accounts for about 40% of world trade in live sheep.
- The live sheep trade is a key part of the Western Australian sheep industry structure and profitability.
- Reducing the volatility of the live sheep trade and increasing the demand for chilled and frozen sheep meat are important for sheep profitability in Australia.

How much meat is produced?

World production of lamb and mutton has been increasing steadily from 4.8 million kg in 1961 to 8.1 million kg in 2004 (Fig. 6). Production in Australia and New Zealand has been fairly consistent across this period. China has shown rapid growth over the past fifteen years and is now the world's largest producer. The major sheep-meat producing countries in 2004 were China (2.20 million kg), Australia (0.56), New Zealand (0.51), Iran (0.35) and the United Kingdom (0.31).

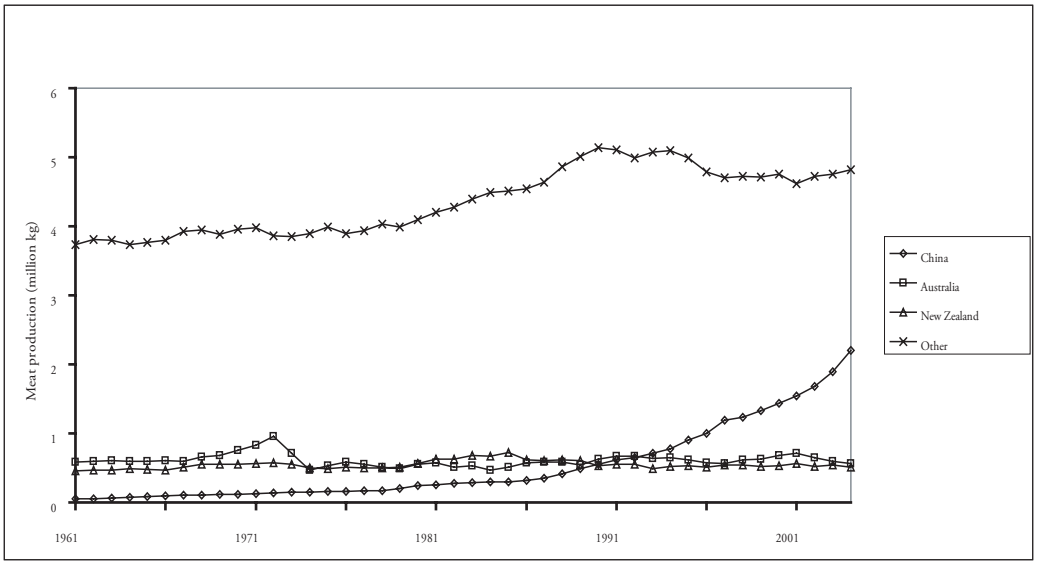

Fig. 6. Annual production (million kg) of sheep meat (mutton and lamb) for China, Australia, New Zealand and the rest of the world for the period 1961 to 2004 (FAOSTAT, 2005).

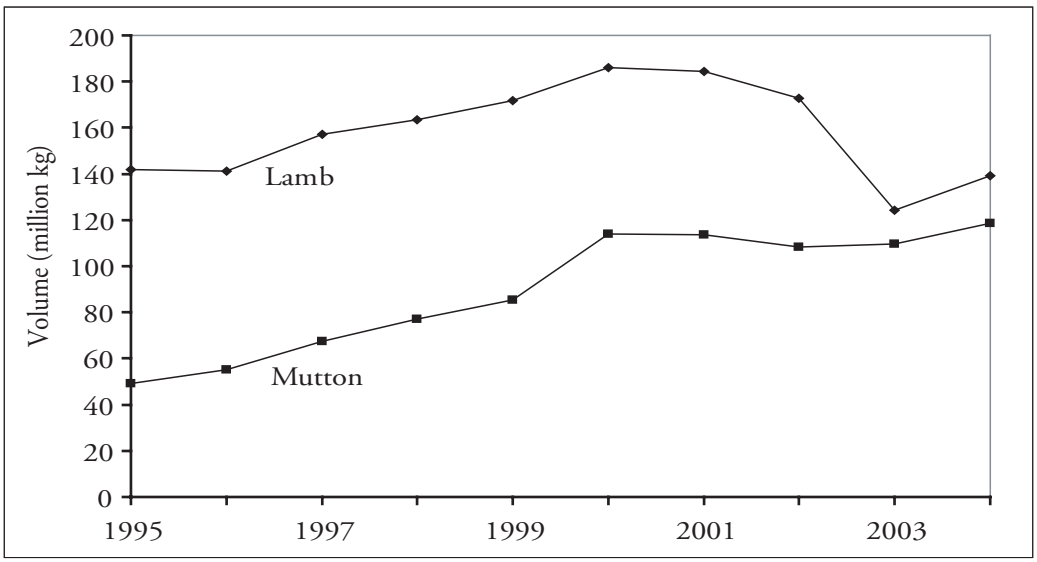

Fig. 7. Australian exports by volume (shipped weight, million kg) of sheep meat, both mutton and lamb, for the period 1995 to 2004 (ABARE Agricultural Commodities Statistics Table 176 quoting Australian Bureau of Statistics, International Trade, Australia, cat. no. 5465.0, Canberra).

Australian annual exports of lamb and mutton over the 10 years to 2004 have averaged 89.8 and 158.2 million kg (shipped weight), respectively. However, as the decade developed, lamb exports have increased as a percentage of total sheep-meat exports from 26% in 1995 to 46% in 2004 (Fig. 7). Apart from increased numbers of lambs, average carcase weight has also increased to meet market requirements (Fig. 8).

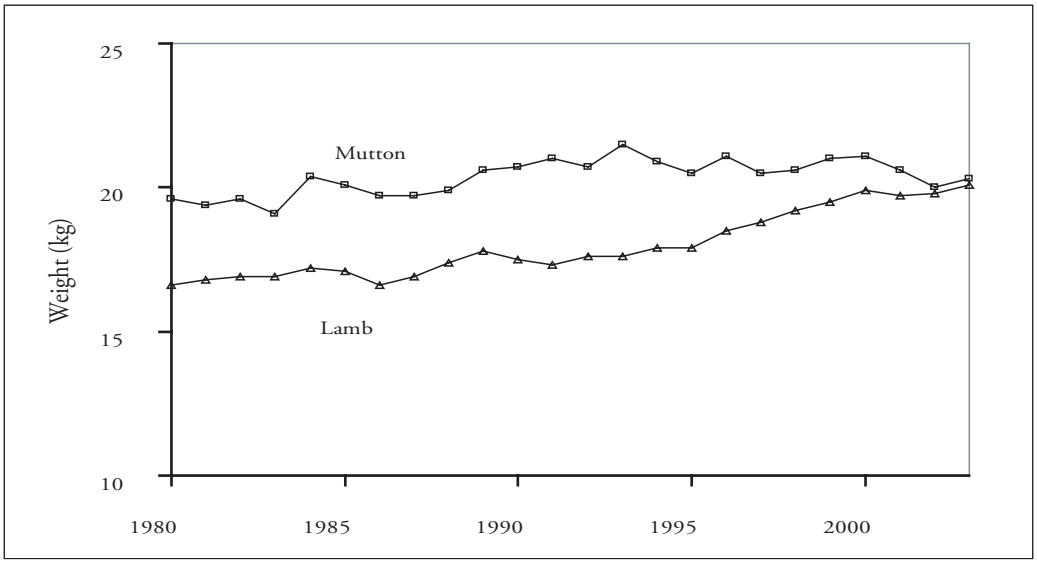

Fig. 8. Trend in average lamb and mutton carcase weights for the period 1980–2002 (ABARE Australian Commodities, vol 12, no. 4, December 2005).

Key points about sheep meat production and exports

- China is a dominant world producer of sheep meat.
- Australia is a major sheep-meat producer and exporter, accounting for 25% of international trade in sheep meat.
- Australia's sheep meat industry is dependent on export markets for growth.
- Australia's lamb production has responded to export market signals requiring larger carcases.
- The USA is a key market for Australian lamb.

Wool production

World greasy wool production (Fig. 9) peaked in 1970 at 2.9 billion kg and declined to 2.6 billion kg in 1978 before surging strongly to an all-time peak of 3.3 billion kg in 1990. Since 1990, world production has declined by 36% to 2.1 billion kg in 2004. Seven major wool producing countries (Argentina, Australia, China, New Zealand, South Africa, the United Kingdom and Uruguay) dominate world production. Between 1961 and 2004, they have contributed over 60% on a greasy basis, with Australia alone averaging 29%. China has grown in importance as a world producer of greasy wool from 5% in 1961 to 15% in 2004.

Wool fibre diameter is the key determinant of where wool will be used—and of price. Generally, fine wool is most suitable for apparel, medium wool is most suitable for furnishings and coarse wool is most suitable for floor coverings. Australian wool is predominantly fine Merino wool and is used in high-value clothing (Fig. 10). The strategic importance of this high-value end of the spectrum is that any activity that changes global demand will have the greatest impact on Australia. The domination of the fine Merino wool market by Australia is also matched by superior fibre production systems, clip preparation, pre-sale measurement and quality standards, which set the international benchmark.

Australia's production of wool is undergoing a fundamental structural change with a dramatic decline in production of medium fibre diameter wool (20 μm to 23 μm) and a steady and rapid rise in the production of superfine wool. Superfine wool (< 19 μm) now accounts for over a third of the volume of wool produced in Australia. International market growth for superfine wool has

increased over the past decade, averaging 8% p.a. in volume over the past 15 years. Over the same period, medium wool has decreased by 7% per annum. The effect of this clear difference in demand is highlighted in Fig. 11, which shows the trends in volume and value of these components of the Australian Merino wool clip.

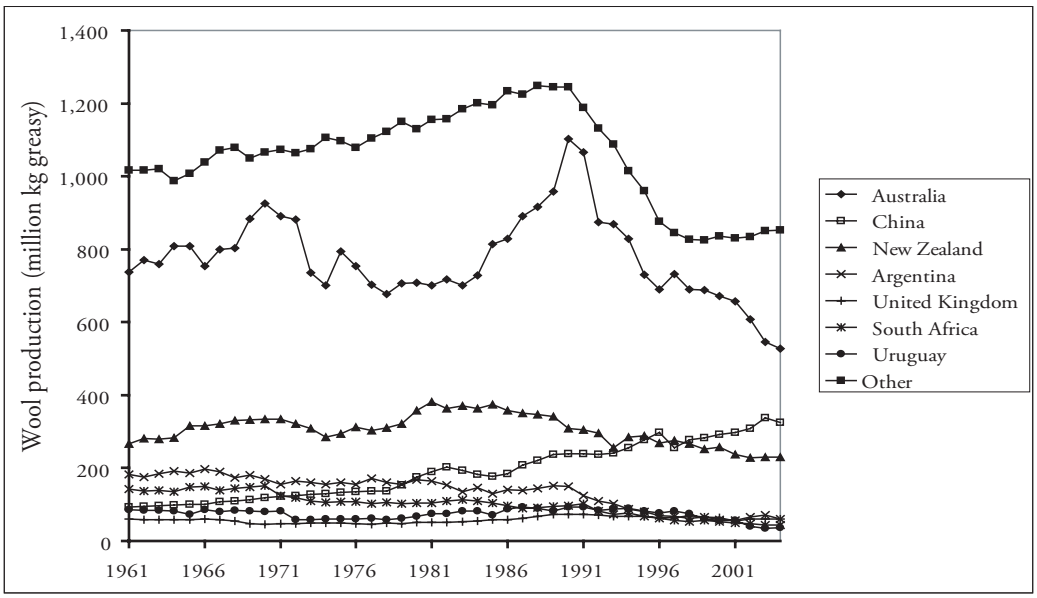

Fig. 9. World wool production (million kg greasy wool) for the period 1961–2004 and production of the main wool-producing countries (FAOSTAT, 2005).

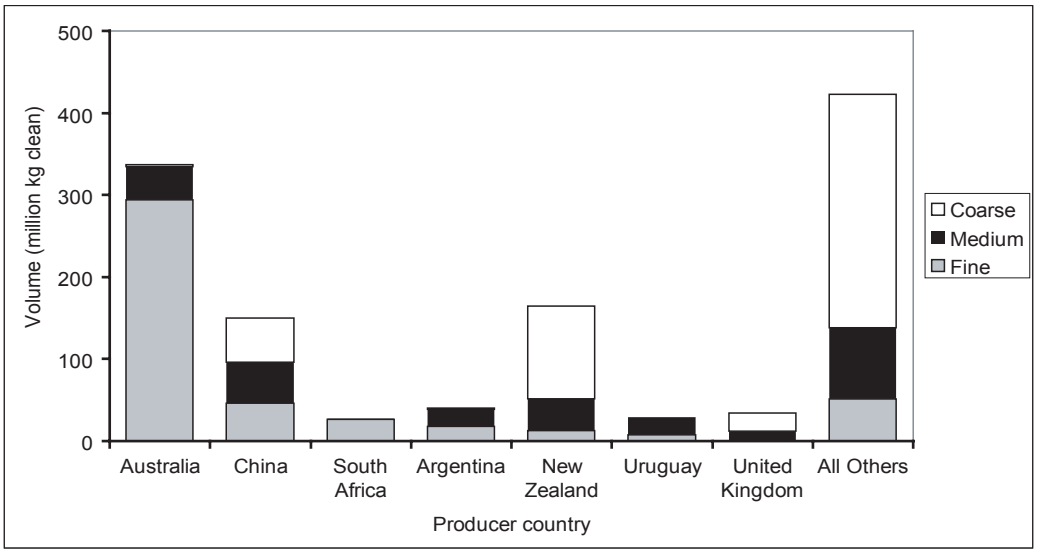

Fig. 10. Wool production (million kg clean wool) by country and fibre diameter category for 2003/2004 (China: 2004). Fibre diameter categories are fine (24.5 µm and less), medium (24.6–32.5 µm) and coarse (32.6 µm and coarser) (Woolmark, 2005 and data collected from various international sources).

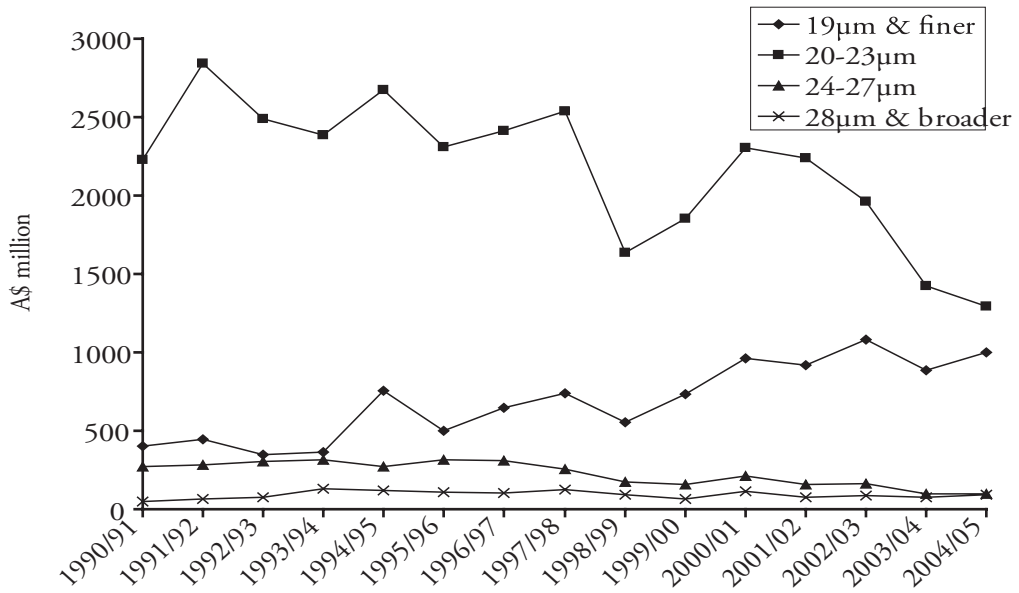

Fig. 11a. Australian wool exports (million A$) for the period 1990/91 to 2004/2005. Exports comprise greasy wool, scoured wool, carbonised wool, tops, noils and wastes but exclude sheep skins. (Woolmark, 2005).

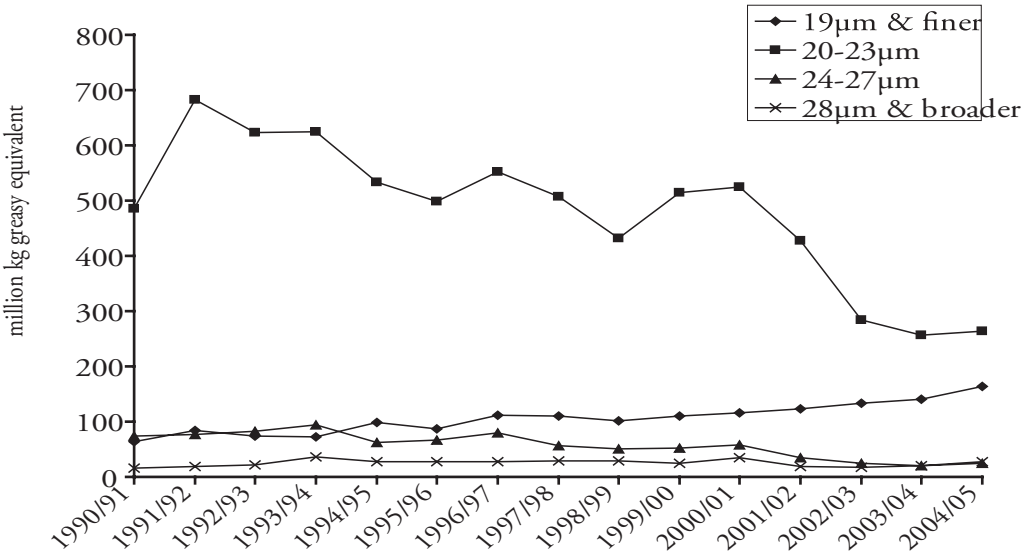

Fig. 11b. Australian wool exports (million kg greasy wool equivalents) for the period 1990/91 to 2004/2005. Exports comprise greasy wool, scoured wool, carbonised wool, tops, noils and wastes but exclude sheep skins. (Woolmark, 2005).

Key points about wool production and processing

- Australia is the leading world producer of superfine Merino wool for apparel.
- China's production of wool, including that of fine wool, is increasing steadily.
- China is the world's largest textile manufacturer.
- China now purchases 55% of Australia's wool production, of which 65% is used for domestic consumption.
- The USA, Western Europe and Japan continue to be the major consumer markets for apparel wool.

Conclusions

Export markets are essential for the growth of Australia's sheep meat and Merino wool industries, with over 95% of Merino wool exported and over 50% of sheep meat exported. Australia's competitive position internationally is as a supplier of heavier carcase weight prime lamb and superfine Merino wool. Both these products are in the high-value end of their markets. Australia is also a dominant supplier of live sheep that have a clean health status. The growth of the Chinese sheep industries in both meat and wool production is a potential threat to Australia, particularly if China targets Australia's high-value markets.

The Australian sheep industries, including wool, lamb, mutton and live sheep exports, are dominated by the Merino breed. This provides sheep producers with greater flexibility between the markets they supply and as a consequence helps to reduce the risk to their income.

Research within the Sheep CRC will provide an understanding of how best to structure the Australian sheep industry to meet the needs of international markets for wool, lamb and mutton. This could be achieved through improved genetics of Merinos or there could be segmentation of the Australian sheep industry into breeds that specialise in high performance for prime lamb or superfine Merino wool production.

Poor average productivity growth in the Australian sheep industries compared to other industries and countries jeopardises the competitive position of Australian exports into world markets. Adoption of new technologies and increased productivity combined with increased market demand is essential for a profitable sheep industry sector in Australia.

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