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Sheep meat in China and the opportunities for New Zealand



In 2012, China replaced the United Kingdom as the most important destination by volume for New Zealand sheep meat. In this article we explain the reasons behind the increased demand, and look at what the future might bring. Main issues relate to degradation of the Chinese grasslands, the high opportunity cost of raising sheep on arable land, increased consumer demand for sheep meat, and the challenge of moving from commodity sales to consumer-ready products.

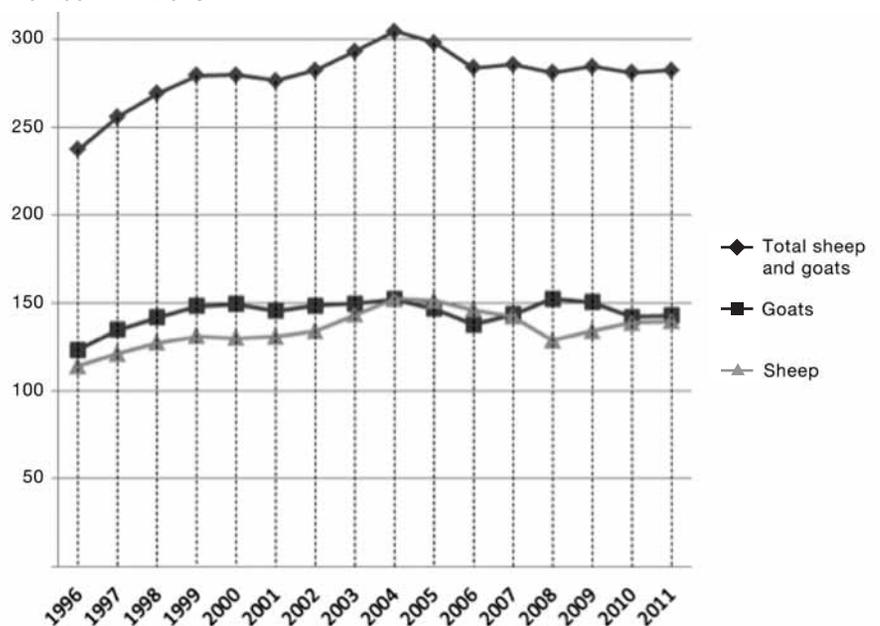
Chinese sheep and goat production

Statistics on Chinese sheep and goat production can be confusing given the general lack of discrimination within the Chinese language between sheep and goats. Sheep and goats are recorded separately when they are livestock, but there is no distinction in the recorded statistics or in Chinese cuisine once they become meat. The term 'yang rou' 羊肉 covers lamb, mutton, kid and goat meat.

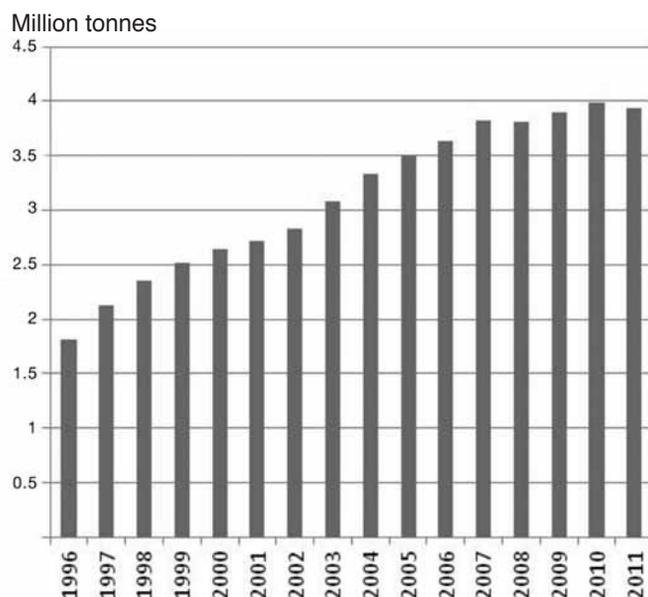
Data from the National Bureau of Statistics of China show sheep numbers increasing from 114 million in year 1996 to 152 million in 2005, and then declining back to 140 million in 2011. Goat numbers also increased from 123 million in 1996 to and 152 million in 2005, then declined back to about 143 million in 2011.

Whereas sheep and goat numbers increased only 19 per cent between 1996 and 2011, meat production from these flocks more than doubled during this time from 1.8 million tonnes to 3.9 million tonnes. However, much of the production is eaten

Number in millions



Sheep and goat populations in China



China's sheep and goat meat production

by Muslim communities in the pastoral areas, and therefore does not enter formal supply chains. It is therefore inevitable that volumes will be estimates rather than measured, and there is also scope for confusion between bone-in and bone-out.

The Chinese grasslands

The Chinese grasslands cover much of western and northern China. The main pastoral regions for sheep production are in Qinghai, Xinjiang, Tibet, Gansu and Inner Mongolia. Sichuan and Yunnan also have pastoral areas. Traditionally, the pastoral areas are where most of China's sheep have been farmed with only small numbers of goats. Sheep farming is usually associated with a nomadic lifestyle and movement between summer and winter pastures.

The grasslands are usually at high altitude, nearly all above 1,000 metres and often higher than 3,000. Winters are bitter and the no-growth period often exceeds six months. Average rainfall in many regions is less than 300 millimetres



Degraded grasslands in Inner Mongolia

and seldom more than 500 millimetres a year.

The Chinese pastoralists are mainly ethnic minority people for whom the 'one child' policy has never applied. As a result, there is over-population both of people and animals.

The government of China has responded to the grassland degradation in many ways. In the north, all sheep have been removed by edict from parts of Inner Mongolia. Out to the west on the high altitude Qinghai grasslands, there is a conservation region of 350,000 square kilometres, more than the total area of New Zealand, where all pastoralism is according to organic systems. However there is a lack of local legumes and the only ones to have survived the over-grazing are poisonous to livestock. Combined with the depredations of pikas, small rabbit-like burrowing mammals, the continuing removal of nutrients in animal products and no artificial fertilisers leads to continuing degradation problems.

The general outlook for increased sheep production from the grasslands alone is therefore poor. However, on recent visits to Qinghai we have seen Tibetan sheep being housed for finishing before slaughter. These sheep are fed pellets made from mixed straw and grains. This intensive finishing may become of increasing importance in an attempt to at least maintain production levels.

Sheep and goats in the arable provinces

There are large numbers of goats and sheep raised in what are called arable provinces. However, a lot of the areas where the goats are raised are mountainous. Nevertheless, the climate is considerably warmer than in the pastoral provinces. The five most important arable provinces for goats are Shangdong, Hebei, Henan, Anhui and Sichuan. In these provinces the majority of the 'yang' are goats rather than sheep.

In contrast to the grasslands, the Chinese government is trying to encourage both sheep and goat production on the arable lands. This production is often in association with



Sheep in association with cropping, Inner Mongolia

crop stubbles. However, the opportunity costs of sheep and goat production are high, except when they are on what would otherwise be wasteland.

In some ways it is little different from the situation in New Zealand, Australia, Europe and South America where most of the sheep farming takes place on land for which there are few farming alternatives. Although there have been considerable increases in the past, there are therefore unlikely to be further large-scale increases in the future.

Analysis of the five major arable provinces where goats and sheep are raised indicates that production in these areas has actually been declining since 2006. In all, there are close to two million farmers who have sheep and goat flocks, but the number of farms is declining as farmers move to the cities and with some farm aggregation occurring.

Chinese sheep and goat meat consumption

FAOSTAT, the Statistics Division of the Food and Agriculture Organisation, food balance sheets for 2009, show Chinese per capita consumption of sheep and goat meat of 2.9 kilograms a year. This consists of five per cent of total meat consumption. It is more than three times the per capita consumption in 1990. In comparison, New Zealand per capita sheep and goat consumption, although still much higher, has declined to 23 per cent during this time.

Chinese and New Zealand meat consumption in kilograms per person each year

	China 1990	China 2009	NZ 1990	NZ 2009
Sheep and goat	0.9	2.9	30.0	23.2
Beef	1.0	4.8	39.1	27.6
Poultry	3.3	12.6	16.6	30.4
Pork	20.2	36.7	13.6	21.8
Total meat	25.7	58.2	100.1	106.4



Housed Tibetan sheep in Qinghai Province being intensively finished for the market

Sheep and goat meats in Chinese cuisine

The best known form of sheep and goat meat consumption is as thinly sliced ‘yang’ roll within the customary hotpot cuisine typical of northern and western China, but also seen elsewhere in the rest of the country. The hotpot containing soup with basic flavouring spices is brought to the table and placed on a burner. At restaurants the guests are provided with the other ingredients of meat, vegetables and tofu on trays and they then add these to the hotpot.

Only a few minutes of cooking are required. For this style of cooking, customers often prefer meat with plenty of fat for better flavour, and therefore there is no price discrimination even for extremely fatty meat. Meat from older animals may also be preferred on account of the stronger flavour.

There are also many other forms in which sheep and goat meats are consumed within Chinese cuisine. A simple search of ‘sheep/goat meat recipes’ in Chinese 羊肉菜谱 on Google reveals vast numbers of dishes using sheep and goat meat. One website alone www.meishichina.com offers 161 recipes for ‘yang rou’.

Generally the recipes use minced, diced or chopped pieces often bone-in, and are presented as stir fries, roasted pieces, dumplings, kebabs and in casserole-type dishes. Food plates are almost always placed in the centre of the table for communal use. Knives and forks are never available in China, unless Westerns are being catered for, and so food needs to be in a form suitable for eating with chopsticks or hands.

A lot of Chinese retail products do contain English language labelling as part of the marketing image. There can be use of specific words such as lamb and mutton which implies differentiation between the two. However, it would be unwise to assume the different words have any particular significance.

New Zealand sheep meat exports

Historical information on sheep meat exports to China is less than accurate. This is because in the past some of the meat was sold to buyers who would first ship it from New Zealand to a third country, and then re-export it to China via grey unofficial channels.

However, increasing numbers of New Zealand slaughter and processing plants are now registered by the Chinese government. Together with declining tariffs ranging from four per cent to 7.5 per cent in 2013 and declining to zero in 2016, and with jail sentences in China for those caught in the grey trade, the incentive for trading this way has greatly reduced. Nevertheless, there is in all probability still some sheep meat sold into China this way, with Hong Kong in particular as an intermediate point.

Trade increase

New Zealand export data show that the sheep meat trade has increased greatly in recent years. The NZ Meat and Livestock Authority reports that on a volume basis, exports to China increased from eight per cent of sheep meat exports in the year ending June 2010 to 12 per cent in 2011 and 18 per cent at June 2012. Volumes have increased again for the first part of the 2012/13 year.

Until recently, most of the trade was in lamb and mutton flaps which were processed into 'yang' roll. However, to meet the demand the Chinese buyers are now purchasing a much greater range of cuts from old ewes together with lamb forequarters. Some of the Chinese companies use brands such as 'Kiwi lamb' but the Kiwi provenance is far from guaranteed.

It has also been a common practice in the past for Chinese processors to mix in some cheap pork or duck fat to reduce the cost of the product. However, China is now placing high priority on improving food quality, and adulteration of this type will increasingly be a risky strategy for any local Chinese processors who persist with this practice.

From a New Zealand perspective, one of the strengths of the Chinese market has been that there is a high regard for what New Zealanders see as the lower quality cuts. Part of the profitability of the New Zealand sheep industry in recent years has been because of better prices for these so-called inferior cuts caused by demand from China. The influence has been particularly strong for ewe mutton for which other options have been limited. The Chinese market has therefore become complementary to the European and American markets which favour the premium cuts from young animals.

The supply chain from New Zealand

Most of the sheep meat sold to China is purchased free on board, that is dockside in New Zealand, by the Chinese buyers. The Chinese purchase the meat in a minimally processed form. Therefore the New Zealand meat processing companies receive commodity prices. Generally the meat



Kiwi lamb as marketed by a Chinese company after processing in China



Sliced Kiwi lamb roll in Shanghai supermarket



Final stage processing of sliced lamb roll in supermarket

is then shipped to the port of Dalian on China's north east coast and then transported to the far northern city of Harbin. There the meat is thawed, boned out, processed into mutton rolls, and frozen again for the next stage of its journey.

It is then transported throughout China to be sold both in supermarkets and to the food service industry. There is still one further step in the processing before retail sale. The frozen mutton roll is sliced very thinly and then placed in consumer trays in chiller cabinets with this final stage often occurring in the supermarkets.

Retail prices of mutton roll in late 2012 ranged from about CNY24 to 37 for a 400 gram pack, equating to about NZ\$12 to \$18 a kilogram. This was between two and three times the price of pork and chicken, and similar to sliced beef roll processed in the same way. Mutton roll prices have increased about 40 per cent between 2008 and 2012.

New Zealand initiatives

Several years ago there was a major initiative by some of the New Zealand meat marketing companies, together with the New Zealand industry body Beef and Lamb to work together in developing the Chinese market. However, the initiative failed while still in the gestation stage. The focus was on the high-end food servicing market, and it quickly became apparent that the volumes would be small.

One of the major players then withdrew, and the project fell apart. The report has never been released, but it seems that the initiative got off on the wrong track right from the start from a fundamental failure to recognise main distinguishing features of Chinese cuisine and the Chinese market.

There is an irony that the Chinese market has developed in spite of, and not because of, any grand New Zealand initiatives. Instead it has been because the Chinese buyers came looking for the product from New Zealand. Nevertheless, at least two New Zealand companies are now shortening the chain and attempting to sell branded product into high-end restaurants, although apparently only in small volumes.

Some current concerns

There is debate within the meat industry as to whether the New Zealand-China Free Trade Agreement is working as it should. Some processing companies have all of their plants registered for China and find the trade works very smoothly, but other companies have been frustrated by the bureaucracy.

There are certain subtleties by which the game has to be played. This could be incorrectly interpreted as meaning that bribes have to be paid. However, that is not the case, and many foreign firms who are successful in China across a range of industries are adamant that if you are paying bribes then you are working with the wrong partners.

A more correct interpretation of 'the game' is that officials who get upset or offended can be impossible to deal with and memories are long. Threats and bullying are definitely not how the game should be played, and once 'face' has been lost then the position can be irrecoverable.

The future

An important issue is that China produces about four million tonnes of sheep and goat meat, which is 10 times our total New Zealand production. Their own ability to increase production is constrained by fundamental problems. In terms of global competition for New Zealand in this market, there is no one out there of any significance apart from Australia.

Overall meat consumption in China continues to increase, but much of this is pork and to a lesser extent poultry. However, there is a substantial Muslim population of about 23 million whose religion forbids the consumption of pork. This population is projected to increase to 30 million by 2030. The overall Chinese economy continues to grow at between seven and eight per cent a year, and within this growth most commentators expect a further shift from investment to consumption.

Challenging alternatives

An important question has to be whether or not New Zealand is getting the full benefit from the Chinese sheep meat trade, given the long supply chains. The trade works nicely for the Chinese processors and marketers who earn the entrepreneurial profits, but the return to New Zealand is a 'free on board' commodity price. However, the alternatives would be challenging. Distribution channels into supermarkets are complex, because unlike New Zealand the Chinese supermarkets do not have central distribution centres.

One alternative is to further explore the notion of online selling direct to consumers. Increasingly, Chinese consumers are buying this way, including chilled and frozen food which is delivered directly to apartments. Within New Zealand, there is discussion about an integrated 'New Zealand Inc' approach to marketing our food internationally.

Imagine the synergies from our branded New Zealand food products being marketed online to Chinese consumers from an integrated New Zealand Inc online platform with food baskets containing meat, fish, dairy, wine, fruit and vegetables. This would all be directly delivered from China-based distribution centres to consumers in the Tier 1 and Tier 2 cities of China, and with guaranteed provenance. The individual elements of the supply chain are essentially all in place, but the commitment of New Zealand agri-food companies to work together and make it happen is not there yet.

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Data for the diagrams and charts was supplied by FAOSTAT and by the National Bureau of Statistics of China.