



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Farm and Food Industry Reforms in the Republic of Korea

by
**Allan N Rae
William C Bailey**

CAPS

Farm and Food Industry Reforms in the Republic of Korea

By
Allan N Rae and William C Bailey

Published by
**Centre for Applied Economics and Policy Studies
Massey University, Palmerston North
NEW ZEALAND**

September 1997

Foreword

The study of international farm and food industry developments has always been a major focus of the Centre, especially issues emerging in the Asia/Pacific region. The current report is the latest in this tradition, and was initiated through the desire to obtain improved understanding of likely structural adjustments in Korea's farm and food sectors over the medium term. The study formed part of a collaborative research project titled "Consequences of Farm and Food Industry Reforms in the Republic of Korea and New Zealand", and received funding under the Collaborative Research Projects of the Asia 2000 Foundation of New Zealand. We are most grateful for that support.

The Korean institutions with whom we collaborated on this study were the Korea Rural Economics Institute (KREI), the Korea Food Research Institute (KFRI), Seoul National University (SNU) and the APEC National Study Centre at the Korea Institute for International Economic Policy. Under the Collaborative Research Program of the Foundation, the overseas collaborators may also be required to contribute financially to the research, and this was the case in this study. We therefore gratefully thank KREI, KFRI and SNU for the assistance that they provided. We also gratefully acknowledge the inputs provided by staff from these organisations, and in particular would wish to recognise the considerable role that the respective Presidents of KREI and KFRI played in initiating the research programme and helping to ensure its eventual funding. We should also acknowledge the assistance we obtained from the Ambassador and staff at the New Zealand Embassy in Seoul, both during the project formulation stage and during its conduct, and from the New Zealand Dairy Board.

The study was a truly collaborative one and for this reason we prefer not to mention individual contributions, but extend our thanks to all those with whom we held discussions in Korea. As far as the Massey members of the project were concerned, William Bailey lead research on Korean food distribution (Chapters 5 and 6), while Allan Rae lead the study of food policies, farm production and food consumption (Chapters 2 to 4).

Finally, we acknowledge Mrs Julia Fisher's contribution in finalising the document for publication, and the assistance of the Centre's Research Officer, Mr Peter Gardiner.

Allan N Rae
William C Bailey

Chapter 1

Introduction

RECENT MACROECONOMIC PERFORMANCE

Up to about 30 years ago Korea was a poor economy heavily dependent on agriculture. Since the early 1960s real gross domestic product (GDP) has grown over thirty times making Korea one of the most successful developing countries over the post-war period. Korea is one of the few countries in which the transition from a rural to an industrial economy has taken place in a single generation. A major factor in this performance was sustained export growth of about 20% annually, and Korea is now the world's 11th largest trading country. On 12 December 1996, Korea was admitted to the Organisation for Economic Cooperation and Development (OECD).

During 1986-88 GDP growth averaged over 12% annually. Since then, economic growth has been somewhat slower. Export growth began to slow in 1988, and the volume of exports declined by 2% the following year. GDP grew by only 6.2% in 1989, about half the rate of the previous year. Two factors that contributed to this sudden economic slowdown were the escalation of wages and appreciation of the Korean currency, weakening the competitiveness of Korea's export sector. The threat of deficit trade balances also re-emerged in the late 1980s due to the continued growth in import demand, fuelled by import liberalisation measures and the currency appreciation. The trade deficit of 1990 followed four consecutive years of surpluses.

Economic growth picked up to 8-9% annually in 1990 and 1991, although it remained slower than during the earlier decade. Export volumes recovered to show annual growth of 4-10% while strong import demand continued and the trade deficit widened. Such faster growth was however accompanied by accelerated inflation and it became clear that overheated domestic demand was resulting in serious external and domestic imbalances. Tighter fiscal and monetary policies were pursued in 1992, along with efforts to curb investment and stabilise wages. As a result economic growth fell to around 5%, the slowest since 1980, but inflationary pressures were reduced as was the trade deficit through a marked reduction in real import growth. Due to this economic slowdown, inflation continued to fall in 1993, but the sustained growth in exports and only a mild recovery in import demand lead to a substantial improvement in the trade balance.

Table 1.1 Selected Macroeconomic Trends

Year	Percentage change from previous year in					Exchange rate (Won/US\$)	Trade balance (US\$million)
	Real GDP	Real PCE	Export volumes	Import volumes	CPI		
1987	12.0	7.8	23.8	20.8	3.0	823	7,659
1988	11.5	8.8	13.0	14.4	7.2	731	11,445
1989	6.2	14.3	-1.9	16.8	5.6	671	4,597
1990	8.6	11.1	4.0	14.0	9.3	708	-2,004
1991	9.1	10.8	9.9	16.7	9.3	733	-6,980
1992	5.1	5.8	8.4	2.0	6.2	781	-2,146
1993	5.8	6.3	6.8	6.5	4.8	803	1,860
1994	8.6	7.7	14.9	21.5	6.2	803	-3,146
1995	9.0	8.3	24.0	21.2	4.5	771	-4,746
1996	6.4a	na	19.2	11.9	5.0	804	na

a. Growth to the third quarter from a year earlier.

Source: IMF

Economic growth recovered in 1994 and 1995 with annual growth rates of around 9%, due to strong expansion of investment and exports. The demand for imports also increased rapidly over this period, and the trade balance again went into deficit. Inflation, at 4-6% annually, remained low by historic standards over this period.

Over 1996-97, real GDP growth shows signs of moderating in response to concerns about overheating, and GDP growth of 6.4% is projected for 1997 (Far Eastern Economic Review) following similar growth in 1996. The current account deficit reached a record level in 1996, and the worst labour unrest in the country's history occurred in reaction to labour market reforms. Due to a strong world economy exports will grow steadily, but at slower rates than in 1995-96. Growth in real exports and imports is projected at 11% for 1997, and trade deficits are also forecast for 1997 (PECC, 1996). In fact the trade deficit widened to US\$5.5 billion two months into 1997 following a strike-induced drop in exports (Far Eastern Economic Review) and the Won has depreciated to

around 860 per US\$. Consumer price inflation should also moderate to less than 4% in 1997 and the reduction in import demand has become a major priority.

Important factors in explaining Korea's success include its strong outward orientation, economic incentives that reflected market realities and flexible macroeconomic management (World Bank). Further internationalisation is a policy challenge for Korea. During the last decade much progress was made in trade liberalisation, but with the notable exceptions of agricultural products and services. Agricultural trade barriers are now being lifted as the Uruguay Round Agricultural Agreement is implemented, and further liberalisation of the services sector is also planned. Steps are also being put in place to liberalise the financial and capital markets and to improve their integration with global markets. Other challenges for the future are the management of emerging environmental issues, particularly air and water pollution and land degradation (see Rae and Meister 1995 for a discussion of these issues with respect to Korean agriculture). Finally, despite substantial investments, economic growth is outstripping infrastructural capacity in several areas, including the transport and distribution sectors.

THE RELATIVE DECLINE OF AGRICULTURE IN KOREA

Share of output and employment

Up until the 1960s Korea was a developing agricultural economy, with the farm and food sector employing about half of the work force and contributing a similar proportion to GDP. But it is a common observation that as an economy grows and develops through time, the relative contribution of agriculture to economic activity declines. Korea has been no exception, and resources have moved out of the agricultural sector to the rapidly developing industrial sectors, and agriculture's contributions to national gross domestic product and employment have declined. By the mid-1980s, agriculture accounted for around 10% of gross domestic product and provided jobs for 20% of the labour force. The structure of the Korean economy has continued to change rapidly, and by 1995 agriculture contributed only 5% to the total output of the economy. Table 1.2 shows the rate at which this decline has occurred in recent times. While the nation's output (measured by real GDP) has almost doubled between 1987 and 1995, that of agriculture increased very little. Hence agriculture's share of total GDP almost halved over this period

The employment situation is not too different. The number of people employed in Korea increased by about 25% from 1987 to 1995, while the number employed in the agricultural and forestry sector fell by almost 30%. Therefore agriculture and forestry's share of total employment declined over this period from around 20% to 12%. The total farm population has also declined in both relative and absolute terms. While the total Korean population increased from 32.2 million in 1970 to 44.6 million in 1995, the total farm population declined from 14.4 million to 4.8 million over the same period. Thus over this time, the agricultural sector contributed about 400,000 persons annually to the non-agricultural sector (Kim, 1995). Due to the emigration of young people out of the countryside, the average age of farmers has increased rapidly. In 1970, 54% of the farm population was under

the age of 20 years. This percentage had decreased to 25% by 1994, when about 44% of the farm population was aged 50 years or older, and one-third was over the age of 60.

Table 1.2 Agriculture's Declining Contribution to Output and Employment

	Gross Domestic Product constant 1990 prices (billion Won)			Employment (‘000 persons)		
	Total	Agriculture	Agriculture as % total	Total	Agriculture	Agriculture as % total
1987	138,499	12,745	9.2	16,354	3,400	20.8
1988	154,111	14,158	9.2	16,869	3,319	19.7
1989	163,950	13,948	8.5	17,560	3,291	18.7
1990	179,539	13,262	7.4	18,085	3,100	17.1
1991	195,936	13,442	6.9	18,612	2,935	15.8
1992	205,860	14,218	6.9	18,961	2,869	15.1
1993	217,699	13,650	6.3	19,253	2,713	14.1
1994	236,375	13,793	5.8	19,837	2,586	13.0
1995	257,536	14,405	5.6	20,377	2,424	11.9

Note: Agriculture comprises agriculture and forestry.

Source: Ministry of Agriculture and Forestry

While the total area of land used in the agricultural sector has not declined as rapidly as has labour employment, demands from other uses such as residential, industrial, recreational and for infrastructural developments has drawn land out of farming. During the 1970s and 1980s, between 10,000 and 15,000 ha of farmland were converted to other uses annually (Kim, 1995). From 1985 to 1995, the total area of cultivated land declined from 2.59 million ha to 2.20 million hectares, resulting in an average loss of about 40,000 ha per year.

Comparative disadvantage in agriculture

Korea's comparative disadvantage in food production has steadily worsened over recent decades. In 1970, the share of all food and agricultural raw materials in Korea's total exports was 81% of the share of the same commodities in global trade (see Table 1.3). By 1990 it had declined to 37%; that is, while agriculture's share of global exports had declined over the past two decades, its share of Korean exports had declined even faster. This can be interpreted as an indicator of a strengthening of Korea's comparative disadvantage in agricultural production. Only for manufactured goods has their share in Korea's total exports been greater than manufactures' share of global exports, but even here the Table suggests a decline in Korea's manufacturing comparative advantage over the past decade.

Table 1.3 Korean Export Specialisation Indices

Commodity group	1970	1980	1990
Food & agric. raw materials	0.81	0.59	0.37
Fuels & minerals	0.41	0.05	0.13
Manufactures	1.26	1.65	1.32

Note: Indices are the commodity's share of Korean exports relative to the same commodity's share of global exports

Source: UNCTAD

The decline in food self-sufficiency

With its rapidly rising standard of living, real consumption expenditures of Korean households have increased almost threefold over the two decades following 1975. Expenditure on foods and beverages has also increased, but by not as much. Thus the proportion of household expenditures spent on food has declined, and therefore that on non-food items has risen, giving rise to a relative decline in the demand for food. Average household expenditure data show that the percentage of total consumption expenditure spent on food and beverages declined from 49% in 1975 to 38% in 1985 and 29% in 1995 (National Statistical Office). There has also been a marked shift in consumption patterns, away from traditional cereals to livestock products and fruit, along with a rapid increase in food purchases outside of the home.

Despite high levels of protection, food production in Korea has failed to keep up with the rapid growth in consumption and self-sufficiency levels for most major crops has fallen. Food self sufficiency has declined for all products shown in Table 1.4, the most notable being for cereals and beef. Grains self-sufficiency has fallen sharply as the livestock sector has expanded. Domestic utilisation of maize, primarily as animal feed, has increased by nearly three times since 1985 as consumption of livestock products has rapidly expanded, and Korea is now almost totally reliant on imports for supplies of maize. With regard to beef, total supplies on the Korean market almost doubled from 1985 to 1995, while domestic beef production remained the same in both years.

Table 1.4 Annual Food Self-sufficiency Rates (%)

Food group	1970	1980	1990	1995
Cereals	78.2	53.3	43.8	30.1
of which: rice	93.1	95.1	108.3	91.1
wheat	15.4	4.8	0.1	0.3
maize	na	5.9	1.9	1.1
Fruit	100.2	98.6	102.5	93.0
Meat	100.0	97.4	92.9	89.2
of which: beef	98.0	93.0	53.6	51.4
Milk products	na	109.7	92.8	93.3
Fish	115.1	132.7	121.7	100.6

Source: KREI (1995)

KOREA-NEW ZEALAND TRADE

Total merchandise trade between New Zealand and Korea reached almost NZ \$1.4 billion in the year ending December 1996, comprising about \$1 billion in exports to and \$0.4 billion in imports from Korea (Table 1.5). New Zealand's exports to Korea have been trending upwards at a somewhat faster rate than the growth in New Zealand's total exports, so the share of exports to Korea has risen from around 2% in the mid-1980s to over 5% in 1995. Korea's share in New Zealand's total imports appears to show little trend, remaining at a little over 1.5% throughout the 1990s. New Zealand's trade surplus with Korea in 1996 was larger than that with any other trading partner.

Table 1.5 New Zealand's Merchandise Trade with Korea

Year ending December	Exports to Korea (NZ\$ millions fob)	% of total exports	Imports from Korea (NZ\$ millions cif)	% of total imports
1988	312.6	2.4	269.5	2.4
1989	493.4	3.4	291.4	2.0
1990	672.3	4.4	256.5	1.6
1991	721.0	4.5	246.4	1.7
1992	753.6	4.3	262.9	1.5
1993	926.3	4.9	284.1	1.6
1994	985.1	5.0	322.1	1.6
1995	1,078.7	5.3	363.2	1.7
1996 (p)	983.3	4.8	395.3	1.8

(p) Provisional

Source: Ministry of Foreign Affairs and Trade

Korea is a major market for some New Zealand commodities, particularly wood, hides, skins and leather and aluminium. Korea has become increasingly important as a market for wood and aluminium, but somewhat less so in the case of hides and skins. Korea has become an important destination for New Zealand beef since that market has been gradually opened from the late-1980s. Casein is the only dairy product exported from New Zealand for which Korea has been an important destination, although this entirely reflects the trade barriers in place. Korea imports around 4-5% of New Zealand's total fish exports, and a small but increasing share of kiwifruit exports. Korea has never been a major market for sheepmeat, and less than 1% of New Zealand's total exports are consigned there. Korea's share of New Zealand wool exports has also declined to less than 1%.

Table 1.6 Korean Market Share (%) for Selected New Zealand Commodity Exports

Year ended Dec.	Beef	Hides, skins & leather	Casein	Fish	Wood	Wood pulp	Aluminium
1988	0.1	13.3	4.6	3.1	7.6	9.6	0.5
1989	0.6	19.7	7.2	5.4	8.6	10.4	6.6
1990	1.7	25.6	4.2	5.0	5.0	13.0	10.8
1991	3.5	30.7	5.5	7.5	15.2	10.1	6.7
1992	2.4	27.5	5.7	5.1	15.5	5.4	12.9
1993	3.5	24.4	5.4	3.7	20.7	10.4	15.5
1994	5.8	20.2	4.3	4.4	18.1	9.6	15.8
1995	6.6	17.4	4.8	3.7	24.1	9.9	17.4
1996 (p)	6.1	16.7	5.1	4.4	22.8	6.1	15.7

(p) Provisional

Source: Ministry of Foreign Affairs and Trade

SUMMARY

Korea has developed from a rural to an industrial country and a member of the OECD in little more than a single generation. Although the rate of development has slowed down somewhat in recent years, the economy has still been growing by 6-9% annually. Macroeconomic problems intensified during the 1990s, including inflation approaching 10%, record trade deficits and periods of weak demand.

Agricultural sector output has been static during the past 10 years, so its contribution to the total economy has fallen significantly, as has its contribution to employment. Substantial reallocation of labour and land from agriculture to other sectors in the economy continues. Despite high levels of protection, domestic food production could not keep pace with demand and self-sufficiency has fallen for many products. New Zealand has taken advantage of the increase in food import demand, and Korea has become an increasingly important destination for New Zealand beef. Other products exported from New Zealand for which Korea is a significant destination include wood, hides and skin and aluminium.

Chapter 2

Agricultural Policy Developments

INTRODUCTION

The major objectives of Korean agricultural policy were prescribed in the Agricultural Basic Law of 1965, to provide adequate food supplies, to increase farm incomes and to achieve comparable living standards to urban residents, to maintain price stability and to preserve the vitality of rural communities. During the 1960s and 1970s main emphases of policies were on increasing production and food self-sufficiency and raising farm incomes. More recently, improving the quality of rural life, preserving the environment, achieving greater market orientation and improving agricultural technologies and productivity have become more important. In the 1990s pressure from Korea's trade partners to liberalise imports intensified, and was met with often vehement opposition and protest from powerful farmers' organisations. This coincided with the completion of the Uruguay Round of trade negotiations, and the Korean government's agreement to undertake various agricultural and trade policy reforms.

High support prices, various subsidies to farmers, and trade barriers had in many cases driven food prices in Korea well above world levels. Estimates of the nominal rate of protection¹ suggest movements through time from -15% (when domestic prices were estimated to be below international levels) in 1960, to 30% by the early 1970s and to over 100% by 1988 (Kim, 1995 p180). For some commodities such as rice, beef, apples and dairy products, domestic prices have been well over 100% above world prices, for example over five times as high in the case of rice. Estimates of producer subsidy equivalents (PSEs) for Korean agriculture include 71% for 1991, suggesting that over 70% of farmers' revenues resulted from government policies of one kind or another. For milk and beef, the PSEs were 69% and 76% respectively. While boosting farm incomes, such policies have also imposed considerable costs on Korean consumers and would have suppressed the growth of the domestic market for such foods. Consumer costs for beef and milk, for

¹The percentage by which domestic food prices exceed their import cost.

example, were estimated to have been raised by 72% and 82%, respectively, due to the protective policies (USDA).

In the livestock sector, border measures have been the main instruments used to provide support to farmers with the objectives of maintaining and stabilising prices well above world levels. Prior to the late 1980s, the Korean government in some years would ban the import of beef (such as between 1985 and 1987). The annual volume of beef imports was set by government reflecting their domestic supply and demand projections, and exporters would tender for a share of the quota. Since 1993, the “simultaneous buy/sell” system was allocated a part of the quota, for which suppliers are able to negotiate conditions directly with organisations representing the end-users. However, a “mark-up” had to be applied to prevent undercutting of domestic price levels.

The Korean dairy industry has been effectively shut off from international competition through substantial non-tariff barriers including shelf-life limits, quotas and import licensing. While the tariff rates have been in the order of 20-40%, import volumes have generally been very low. For example in 1993, Korea’s total imports of butter, cheese and milk powders was only 16,000 tonnes compared with imports of 199,000 tonnes by Japan (Podbury et al, 1995). The latter publication also estimated that producer prices for milk in Korea were more than three times the average Australian price in 1993, such has been the effectiveness of the non-tariff barriers to imports. Casein has been New Zealand’s major dairy product export to Korea to which a tariff of 20% applied.

Domestic pressures are building for comprehensive reforms of agricultural policies, in addition to those agreed during the Uruguay Round. The agricultural sector is now a much smaller contributor to national economic activity than was the case in the past, and industrial growth has drawn resources out of agriculture. Farming does not appeal to many rural youth, who migrate to the cities for employment. Urban residents are beginning to demand lower food prices, and support within some government ministries for continuance of past levels of assistance to agriculture appears to be waning. Pressures for reform are also arising from participants in the land market, with growing demand for land for such non-agricultural uses as housing, roads and industrial use.

STRUCTURAL ADJUSTMENT AND DEVELOPMENT PLANS OF THE 1990s

The Agricultural and Fisheries Restructuring Plan (1991)

In response to the changing agricultural policy environment, the Korean government introduced in 1991 a 10-year plan (later shortened to a 1998 completion) that focussed on structural adjustment to improve agricultural productivity, competitiveness and rural living conditions. Named the “Agricultural and Fisheries Restructuring Plan”, it was allocated a total budget of Won 42 trillion (NZ\$74 billion).² The Plan gave major emphasis to land reform as a means toward realising economies of size in farming. “Agricultural promotion zones” were established, and self-employed young farmers within such zones were permitted to own up to 20 ha of farmland, rather than the 3 ha previously allowed. Labour-oriented reforms included special job training programmes for those who wish to leave farming or take part-time work off

² Using an exchange rate of won 567 per NZ\$.

their farm, a retirement and welfare plan for those who wish to leave farming, and the provision of training and long-term credits for young farming successors. Of the Won 42 trillion budget, about Won 36 trillion was allocated to restructuring the farm sector, and its planned distribution across the various programmes is given in Table 2.1.

Table 2.1 Investment Plans for Agricultural Restructuring: 1992-98

Aim	Total funding 1992-98	Main activities
	(Won trillion)	
Fostering full-time farmers	2.4	Supporting future leaders and 150,000 households in full-time farming
Modernised production base	8.6	Land improvement, drainage, irrigation, roading
Mechanisation	3.1	Credit for purchases, formation of machinery-users groups
Increasing farm size	2.5	Purchase and sale of farmland
Improvements to livestock structures	5.5	Breeding, facilities and waste treatment
Development of technology	1.2	R&D and extension
Improvements in distribution	2.2	Wholesale and retail market facilities
Modernisation of horticulture	1.8	Modernising facilities and greenhouses, and distribution support
Other	8.1	Structural improvements in forestry and fisheries
Total	35.4	

Source: Anon (1996)

The Agriculture and Fisheries Development Plan (1994)

In 1994 the Korean government introduced the Agriculture and Fisheries Development Plan. This new package of policies was introduced in response to rural concerns over the domestic impacts of the negotiated Uruguay Round international trade reforms. KREI (1993) for example had estimated a loss in producer surplus over the period 1995-2001 of Won 7.8 trillion (NZ\$14 billion). This Plan is being financed from a special tax on the non-agricultural sector (for example, it is levied on stock market transactions, the sale of certain luxury goods and interest income), is viewed as compensation to agriculture for the effects of lowering agricultural trade barriers, and is to assist its adjustment to increased international competition. It is anticipated that the tax will raise a total of Won 15 trillion (NZ\$26 billion) over the 10 years 1995-2004. New programmes were introduced and government assistance to agriculture has soared, increasing by some 50% per year over the past three years - from around Won 0.4 trillion per year prior to completion of the Uruguay Round, to Won 6.0 trillion in 1994 and Won 8.2 trillion in 1995. Similar rates of increase were expected up to 1997.

The main objectives of these new programmes are structural reform and the achievement of greater competitiveness, involving the encouragement of capital-intensive agriculture, a reduction in the number of farms and an increase in farm size. This is to be achieved through the encouragement of retirement of older farmers and the entry of younger farmers, and enterprise diversification out of rice towards more profitable crops (eg horticulture³) and livestock. A large number of programmes have been designed with the use of such instruments as low interest loans and subsidies, which are compatible with Korea's WTO obligations. Some are classified as "green box", while others are included in Korea's aggregate measure of support (AMS) and therefore subject to a reduction commitment. Of the total planned to be raised from the special tax, 60% is to finance improvements in the competitiveness of farming and fisheries, through activities such as further land market reforms to permit more flexible use of land, modernisation of farm capital and improvements in the marketing system. A further 27% of the total expenditures is planned for improvements to the rural living environment, primarily roading, housing and domestic water supplies. All support programmes are now more transparent, and details have been published and are easily accessible to farmers and others.

The land policy reforms of 1995/96 were aimed at assisting the increase in the scale of farming. The reforms have two main components: (i) formerly, only farmers could own farm land. Under the new legislation any person can own such land, and they need not live on the farm, provided they work for at least 30 days each year on their farm; and (ii) the previous limit on farm size was removed - there is now no limit on farm size in the 'prime land' zones, and a 20 hectare limit for farms situated in the 'poorer' land zones. The prohibition on corporate ownership of farm land has also been removed. The new policy would appear to be encouraging growth in the number of larger farms situated on prime land, and a decline in the total area of farmed land in the poorer land zones as areas are converted to such uses as factory sites, hotels and restaurants.

³For example, the number of greenhouses and glasshouses has increased rapidly over the past five years. A government programme can provide up to 50% of the total investment as a grant and 30% as a subsidised loan. Many of these enterprises, which might target export markets such as Japan, are said to be in financial difficulties due to lack of managerial know-how, appropriate technology, marketing skills and the required product quality.

Table 2.2 Planned Allocations of the Special Agricultural Tax

Aim	Main activities	Total funding
		(Won trillion)
Increasing competitiveness	land improvement	4.3
	marketing restructuring	1.5
	others	3.3
Improving rural living conditions	roads	1.2
	housing	0.8
	domestic water facilities	1.2
	others	0.9
Promoting welfare of farmers	retirement programmes	0.8
	hospitals	0.5
	others	0.5
Total		15.0

Source: Anon (1996)

Rice policy reform

Rice policy is at the heart of Korea's agricultural policy, and has also undergone changes in recent times. For many years, the government has operated a dual price system, setting prices and volumes for rice purchases from producers, with the government's reselling price lower than its purchase price. As a result, huge financial deficits accrued (reaching NZ\$15 billion by 1995) and attracted criticism from the finance ministry. Changes were introduced in 1993, with the object of reducing the level of assistance to, and the volume of, rice production. It was planned to be achieved by reducing the gap between purchase and reselling prices, and using a competitive bidding system to establish a market-based reselling price. The government purchase price was increased by 4% in 1996 after having been frozen for the previous two years, but the quantity of rice purchased by government was reduced by 8% so as reduce direct support in line with Korea's commitment on Aggregate Measure of Support as part of the Uruguay Round Agreement (see below). Further changes were planned for implementation in 1997, with the government to announce a guideline price and a purchase volume. Farmers may enter into a contract with government with 40% of the procurement price paid in advance. At harvest time, farmers may then either sell their crop at the market price, or to the government. This programme has some obvious similarity to the USA "loan rate" system.

Despite the continued decline in per person and total rice consumption in Korea, there exists some concern within government that the diversion of land out of rice production has been too rapid, with stocks reaching very low levels during 1996. While the government is aiming at a self-sufficiency rate of 96% by 2004 (Korea must import the equivalent of 4% of consumption by that year), forecasts suggest that self-sufficiency is more likely to be the range of 80-85% in 2004. The government is attempting to boost production and yields through a number of programmes, such as plant breeding research to improve yields and quality, and requests for diversification grants have been declined recently in an attempt to slow the shift out of rice production. Also, the entry of younger farmers to rice production and the increase in farm size are both likely to provide yield increases. To encourage farm restructuring, a farmer retirement policy was

implemented in 1997 which permits direct annual payments to be made for three years to rice farmers aged 65 or over who wish to retire and rent or sell their land to full-time farmers. Direct payments to compensate for income reductions may also be introduced, perhaps tied to environmental objectives or targeted to farmers in less-favoured regions.

THE URUGUAY ROUND AGREEMENT

A summary of Korea's commitments

Korea, despite its subsequent entry to the OECD, was able to take advantage of developing country provisions in the Uruguay Round (UR) negotiations, and therefore its reduction commitments are less than those applied to developed countries. A 10-year, rather than a six-year implementation period also applies.

The "special treatment" clause was applied in the settlement on rice, and a decision on tariffication has been postponed till the year 2004. Minimum access quotas have been specified, increasing from 1% to 4% of domestic consumption over the period 1995-2004. The in-quota tariff will be maintained at 5% during those 10 years, but has not been bound. This special arrangement is to be renegotiated in 2004. The 64,000 tonnes of rice imported during 1996 were sourced mainly from China.

The Livestock Products Marketing Organisation (LPMO) currently is the major importer of beef, mainly purchased under quota by competitive bidding in world markets. A portion of the quota is imported by other agencies representing end-users through the Simultaneous-Buy-Sell (SBS) system. The quota constraint to imports will be maintained until 2000, but the quota and the SBS share is to be increased each year during the interim period. The quota will increase from 123,000 tonnes in 1995 to 225,000 tonnes in 2000 by which time the SBS share will be 70%. The tariff on imports, which was 20% up to 1994, increased to 43.6% in 1995 but will reduce to 40% in 2004. From the year 2001, no import quota, mark-ups or LPMO involvement will apply (see Table 2.3).

Table 2.3 Korea's UR Commitments for Beef

Year	Quota (‘000 tonnes)	Tariff (%)	Mark-up (%)	SBS share (%)
1994	106	20	95	20
1995	123	43.6	70	30
2000	225	41.6	0	70
2004	na	40	0	na

na = not applicable

Source: Korea's GATT Schedule

Considerable liberalisation has taken place for some dairy products (see Table 2.4). All non-tariff barriers on cheese imports have been removed and a tariff of 40% has been set, reducing to 36% by the year 2004. Limited market access has been provided for butter, increasing from 250 tonnes in 1995 to 420 tonnes in 2004 at a tariff of 40%. Imports above these volumes attracted a bound tariff of 99% in 1995, reducing to 89% by 2004. Minimum access for skim milk powder (SMP) and whole milk powder (WMP) totalled 965

tonnes in 1995 and rise to 1607 tonnes by 2004, with within-quota tariffs of 20% (SMP) and 40% (WMP). Imports of these powders over and above the quotas attracted tariffs of 220% in 1995, reducing to 176% in 2004. These rates were set in line with base period estimates of the difference between domestic and world prices. For whey and whey powders, the tariff quota was set at 23,000 tonnes for 1995, increasing to 54,233 tonnes by 2004, and a within-quota tariff of 20%. Imports outside this quota will be levied tariffs of 99% (1995) falling to 49.5% by 2004.

Table 2.4 Korea's UR Commitments for Selected Dairy Products

Product	Initial quota 1995 (tonnes)	Final quota 2004 (tonnes)	In-quota tariff (%)	Base tariff 1995 (%)	Final tariff 2004 (%)
SMP	621	1,034	20	220	176
WMP	344	573	40	220	176
Whey/powder	23,000	54,233	20	99	49.5
Butter	250	420	40	99	89
Cheese	na	na	na	40	36
Cocoa & food preps.	na	na	na	30-40	19.7-36
Casein/ates	na	na	na	25	22.5

na = not applicable

Source: Korea's GATT Schedule

For apples and kiwifruit, tariffs are to be progressively reduced from a 1995 base rate of 50% to 45% by the year 2004. The tariff reductions for peaches and nectarines are from the base rate of 75% to 45%, and for cherries the tariff is to be reduced from 40% to 24%. However, phytosanitary issues currently prevent the export of products such as apples and stonefruit (codlin moth) and potatoes (nematodes) from New Zealand to Korea. Discussions continue between the New Zealand authorities and those in Korea, and agreement may eventually be reached over control processes in New Zealand that provide the Korean's with an acceptable level of risk.

Korea has also agreed to cut back its domestic support expenditures, as measured by the Aggregate Measure of Support (AMS). Total AMS support was calculated at Won 2.25 trillion (NZ\$4 billion) over the 1989-91 base period, about 90% of which is accounted for by rice expenditures. This amount is to be reduced to a final bound level of Won 1.49 trillion by the year 2004. This total is however only a portion of the total domestic assistance actually received by Korean farmers. This is because many programme payments were classified in the Uruguay Round Agreement as "green box" measures, such as structural adjustment assistance and investment aids, and were exempt from the reduction commitments.

Forecast impacts of the Agreement on Korean agricultural structure and incomes

The assumptions about future price movements (in real terms), on which the following projections depend, are given in the top part of Table 2.5. These recognise that the Korean pork and chicken markets will be liberalised by mid-1997, and that for beef by the year 2001. The domestic prices of animal products are expected to decline by more than those of crops - due for example to the expected growth in beef and dairy

imports. Future growth in imports of fruit, vegetables and rice will be restricted by the minimum market access conditions of the Uruguay Round agreement.

Table 2.5 Uruguay Round Projections: Output Composition

	1993	1998	2004	annual % change
<i>Price assumptions</i> (1990=100)				
rice	108.3	109.7	105.9	-0.20
fruit	107.0	109.1	99.2	-0.69
livestock products	93.0	87.8	77.4	-1.67
of which beef	100.4	98.0	74.2	-2.75
<i>Value of output (Won billion)</i>				
rice	6,237	6,140	6,072	-0.24
fruit	1,533	1,657	1,725	1.07
livestock products	5,033	5,514	5,782	1.26
of which beef	1,405	1,373	951	-3.55
<i>Share of output (%)</i>				
rice	31.9	30.4	28.3	
fruit	7.8	8.2	8.0	
livestock products	25.7	27.3	26.9	
of which beef	7.2	6.8	4.4	

Source: KREI(1994)

The remainder of Table 2.5 gives projections of the future gross value of domestic production of various foods. Intensive horticultural crops, to which Korea producers are currently diversifying, and livestock production with the exception of beef, are projected to exhibit the fastest growth rates - fruits and cash crops by 1.0 - 1.7% annually and some specialist vegetable crops and livestock products (excluding beef) by over 2.5% per year. The value of domestic beef output is projected to fall by over 3.5% per year, as will that of rice by 0.2% annually. The relative contribution of various commodities to gross output changes accordingly. The share of vegetables may rise from 22% in 1993 to over 25% in 2004, while that of livestock products (excluding beef) may rise from 18.5% to 22.5% over the same period. Beef's share of total output is projected to decline from 7% in 1993 to 4.4% by 2004, and the share of rice in total output will also decline.

Value-added in agriculture (at 1990 prices) may increase at the rate of just under 1% annually up to the year 2004, but the rate of growth will be slower for crops than livestock even given the fall in beef production (Table 2.6). While horticultural crops are likely to grow at a faster rate, the reduction in the value of rice and other grains production pulls down the average growth rate for the crops sector. Thus the relative contribution of this sector to total economic activity will continue to fall significantly given projections of 6 - 7% in total Korean GDP growth.

Real incomes per farm household are projected to rise by almost 5% annually up to the year 2004 (Table 2.6). The projected growth in incomes earned from farming is 3.3% annually, reflecting a decrease in the

number of farms, an increase in average farm size and increases in factor productivity, even though agricultural prices are projected to decline. The share of off-farm income in the total income of Korean farm households, which has always been low relative to that in other Northeast Asian economies, shows almost double the rate of growth than does on-farm income. Thus by the year 2004, income earned off the farm may account for nearly 60% of farm households' total income.

Table 2.6 Uruguay Round Projections: Farm Incomes and Value-added

	1993	1998	2004	annual % change
<i>Value Added (Won billion)</i>				
crops	11,850	12,123	13,044	0.87
livestock	1,664	1,835	1,872	1.07
total agriculture	13,762	14,214	15,189	0.90
<i>Farm incomes (Won '000)</i>				
on-farm	6,885	8,063	9,851	3.26
off-farm	6,945	9,777	13,870	6.29
total	13,830	17,841	23,720	4.90
off-farm as % total	50.2	54.8	58.5	

Source: KREI(1994)

Table 2.7 projects major changes in the agricultural labour force, both in terms of total numbers and demographics. The total population living on farms is projected to decline by 5% per year up to 2004, but that of children and teenagers may decline by more than double that rate as farming continues to appear a relatively unattractive career prospect. The total number under the age of 19 years will, by 2004, be only a quarter of the total number in this age group in recent times. Total numbers employed on farms will also decline, by between 4% and 5% per year. The projections suggest that teenage farm workers will number close to zero by 2004. The projections are made for two scenarios - the first assumes continuation of recent trends, while the second takes account of implementation of the farmer retirement policy. Under scenario I, farm employees over the age of 60 years will comprise 53% of the total labour force in 2004, while the proportion may be reduced to 48% under scenario II (compared with 34% in 1993). In either case, the average age of farmers and farm workers will be above that of today.

Table 2.7 Uruguay Round Projections: Agricultural Population and Farm Size

	1993	1998	2004	annual % change
<i>Total farm population ('000)</i>				
<19 years	1,457	1,153	392	-11.94
20 - 59 years	2,684	2,389	1,427	-5.58
>60 years	1,267	1,302	1,273	0.04
Total	5,408	4,844	3,092	-5.08
<i>Agricultural employment ('000)</i>				
15 - 19 years	6	2	0	
20 - 59 years	1,782	1,247	824	-6.77
>60 (I)	930	1,000	934	0.04

>60 (II)	930	934	769	-1.73
Total (I)	2,718	2,249	1,758	-3.96
Total (II)	2,718	2,183	1,593	-4.86
Number of farm households ('000)	1,592	1,486	1,124	-3.15
Persons per household	3.4	3.26	2.75	-1.93
Cultivated area ('000 ha)	2,055	1,975	1,890	-0.8
Average farm size (ha)	1.29	1.33	1.68	2.43

Source: KREI (1994) and authors' estimates

The total cultivated area in Korean agriculture has been projected as a continuation of the past decade's trend and this, combined with a likely 3% annual reduction in the number of farm households, could see the average land area per farm household increase from 1.3 ha in recent years to almost 1.7 ha by 2004.

In summary, the projections clearly indicate that Korean agriculture will become increasingly less labour intensive, as this factor of production is substituted by capital, improved managerial skills and modern technologies. Farms will be somewhat larger in terms of land area, but even with encouraged retirement the proportion of farmers over the age of 60 will be higher in future than is the case today. While household incomes earned from farm production will rise due to productivity gains and shifts away from enterprises likely to be relatively less profitable in the future liberalised market, that earned off the farm will increase even more rapidly so that on average the total earned from non-farm activities will exceed farm income.

Projections of self-sufficiency

Korea's rate of overall agricultural self-sufficiency is expected to continue to decline, and the same applies to all major commodities (Table 2.8). KREI (1994) project a rice self-sufficiency of almost 96% by 2004, but this may reflect the 4% minimum access agreement rather than the reality of Korean farmers' production intentions - self-sufficiency rates as low as 80% have been suggested by other analysts. The rates of reduction in self-sufficiency are particularly marked in the cases of beef (from 56% in 1993 to 17% in 2004) and for milk (from 93% to 70%). Korea may also move from a position of self sufficiency in apple production, to a reliance on imports to fulfil 10% of total consumption. Although starting from a very low base, apple imports by the year 2001 may be over five times as large as the volume imported in 1995. Over the same period, beef imports will increase substantially, perhaps by between 70 - 120%. The projected increase in maize imports reflects continued growth in Korean intensive livestock production, and the 150% projected increase in imports of malting barley is also of relevance to New Zealand exporters.

Table 2.8 Uruguay Round Projections: Imports and Self-sufficiency

	1993	1998	2004	1995-2001 total change (%)
<i>Self-sufficiency (%)</i>				
rice	96.7	96.5	95.8	
apples	100.7	96.4	89.8	
beef	55.5	40.2	17.2	

pork	100.8	90.0	83.0
chicken	98.5	93.9	91.8
milk	93.0	82.6	69.6
<i>Total growth in import volumes</i>			
rice			149
maize			32
malting barley			149
apples			505
beef (a)			72
beef (b)			117

(a) KREI (1993) (b) Doyle et al

Sources: KREI (1993, 1994) and Doyle et al (1995)

The beef, dairy and apple situation

The volume of domestic beef production in 2000 could be only a little below that of 1995, but total consumption will have shown considerable growth on 1995 volumes. The growing gap between the two will be taken up by imports, which could increase by 120,000 tonnes shipped weight (Doyle et al). Korea may in fact import over this period more beef than the minimum volumes agreed to under the Uruguay Round if escalating retail prices of beef are to be avoided. One lesson from the surge in imports following tariffication of the Japanese beef import system was the inability of the distribution system to handle the increased volumes, and the consequent build up of stocks. This problem may be even more severe in Korea. While last year's increase in the maximum shelf-life regulations from 15 to 90 days has assisted trade in chilled beef, very little is actually imported⁴ and the necessary cold-chain distribution system is not yet well developed. But by the year 2001, when the SBS system does not apply and the LPMO has lost its control over the importation of beef, large food distribution and supermarket groups could be importing (chilled) beef directly, and by then such organisations could have the necessary distribution technologies in place.

The price of beef in Korea is likely to drop sharply in 2001 when the import quota is removed and protection is provide only by a tariff of 40%. As a result, total consumption and imports could increase by around 30% and 55% respectively from 2000 to the year 2003. Over this period, beef production in Korea has been projected to decline as producer prices fall in line with retail prices (Doyle et al).

The non-tariff barriers that effectively prevented the import of many dairy products prior to the Uruguay Round were all abolished with that Agreement, and replaced with tariffs and minimum market access commitments. As a result, imports of processed dairy products will increase sharply and domestic prices will fall, encouraging continued rapid growth in consumption. Prospects would appear to be particularly promising for cheese, due to the relatively low tariff of 40% (reducing to 36% by the year 2004) coupled with rapid growth in consumption of 'fast foods'. The level of domestic milk production will fall only moderately, since at present around 85% of the total milk collected goes to the liquid market. However, domestic manufacture of dairy products, which had developed behind considerable protection, will now increasingly face foreign lower-cost competition and some down-scaling appears likely in the years ahead.

⁴ In 1996, total beef imports of 162,504 tonnes included just 32 tonnes of chilled product.

The next decade is likely to see the domestic milk industry focus increasingly on satisfying the growing liquid milk market, with imports gaining dominance in the manufactured products markets.

Table 2.9 indicates that import volumes of some dairy products have increased rapidly following market liberalisation. Total cheese imports increased by 373% over the two years up to 1996, while imports from New Zealand increased by 285% over the same period. While the out-of-quota tariffs on skim and whole milk powders were set at 220%, those on blended milk powders (such as cocoa blends with whey or skim milk powder) were levied much lower rates of 30-40%. As a result, imports of these products were 80% higher in 1995 than a year earlier, and had increased by another 15% by 1996. At the same time, imports of milk powders declined considerably. These blended powders can be used in a variety of food products, including yoghurt, ice cream and bakery products. New Zealand may not be a competitive supplier of blended powders due to the within-NZ cost of the added ingredients, and most of the growth in imports has so far been supplied from the European Union. In 1996 the Korean National Livestock Cooperatives Federation lobbied government to impose additional trade barriers as a safeguard measure in view of the claimed damage to the domestic dairy industry. While the evidence of a causal link between the increased import volumes and domestic industry viability can be questioned, the Korean government nevertheless notified quota restrictions on imported milk powder blends that were introduced on 1 March 1997. Quotas have been set at 20,521 tonnes for the year ended February 1998, increasing to 24,234 tonnes for the year ending February 2001. These compare with the 32,262 tonnes actually imported in the calendar year 1996 (see Table 2.9).

Korean Imports of Selected Dairy Products (tonnes): 1994-1996

Item	Code	1994		1995		1996
		Imports from NZ	Total imports	Imports from NZ	Total imports	Imports from NZ
Sweets	0406	738	3,121	1,574	11,073	2,848
	0401 and 0402	8,225	21,133	5,653	17,560	4,489
powder (a)	1901.90.2000	0	6,836	59	10,857	95
flavour blends	0404.90.0000	1,039	8,724	718	17,150	272

reparations for goods of headings 0401 to 0404
Korea Customs Service

The majority of cheese imports are of processed and mozzarella types for the fast-food industry. Total cheese imports were 255% higher in 1995 than a year earlier, although New Zealand's share declined from 24% to 14% by volume as the USA increased its share from 7% to 27%. Shelf-life restrictions remain a severe impediment to increased imports of dairy products, for example in relation to UHT milk and yoghurts, and future growth in dairy imports will, like those of chilled beef, be constrained by the cold chain distribution infrastructure. A well-publicised problem with Korean milk infection during 1996 led to a substantial drop in consumption, and stocks of manufactured products reached relatively high levels - those of milk powder have recently been about double the normal volumes. These events occurred at the same time as rising feed costs, falling prices for dairy beef and increasing volumes of imports, and put the domestic dairy industry in a vulnerable position. Improved milk hygiene monitoring has been implemented at the farm level. At the time of writing, discussions were underway in Korea on ways to further develop the domestic dairy industry. Ideas at that time included changes to the milk pricing system to encourage improved quality and hygiene, and the establishment of a new independent body "like the New Zealand Dairy Board" to oversee and advise on the milk demand/supply balance and price situation. Another possibility deserving close attention was that of pricing raw milk for powder production so as to allow that product to be "competitive" with imported supplies.

Opening of the Korean market to imports of fresh apples and apple juice will lead to a reduction in domestic production, partly due to imported juice replacing that produced from domestic fruit (KREI, 1993). Over the period 1989-91, wholesale prices of Korean apples were around 2.4 times as high as international prices, which provided a nominal rate of protection to the Korean apple industry of 140%. Korean exports of apples had been exhibiting some growth during the 1980s, but volumes have since declined partly due to loss of the Chinese Taipei market. Between 1995 and 2001, KREI (1993) predicts that production will decline somewhat, but total fresh apple consumption in Korea will increase by 80,000 tonnes (or 12%) with imports increasing five times, or by 100,000 tonnes, resulting in projected self-sufficiency rate between 85-89%.

The future

Uncertainty surrounds the future level of government assistance to Korean agriculture, with the finance ministry appearing unwilling for the current level of spending on agriculture to continue and with the likelihood of weakening of farmers' political influence. A general election is to be held in December 1997, with the new government to be in place by February of the following year. Electoral boundaries are reviewed every four years and the trend has been a reduction in the number of Congress members representing the farmer population as it declines in numbers relative to the total population. But there are also other reasons why the political power of farmers is likely to decline substantially over the next 10-15 years. At present many Koreans have relatives in rural areas and thus maintain rural links, but over time these connections will be weakened as older people pass away or as they lease or sell their farms. The younger generation of farmers appears, relative to older farmers, to less actively seek government support, perhaps because they have alternative employment opportunities available to them. Also, the younger generation of urban dwellers are likely to increasingly show less sympathy for rural affairs and the need for food self-sufficiency. At the same time, the struggle continues between the agricultural ministry and that responsible for the national budget over financial allocations to the agricultural sector and the extent to which public funds should be expended on the support of less-productive sectors of the economy.

A government initiative taken in mid-1995 saw researchers, academics, private sector representatives and farming organisations join with government officials in drawing up a vision for Korean agricultural policies and prospects for the 21st century (Anon, 1996). These were considered in the light of likely developments, both domestic and international. The former included recognition of changing food consumption patterns in an increasingly consumer-oriented society, the resulting demand for high quality and processed foods and for foods consumed away from the home, and the fact that the production sector will have to react to such consumer preferences in the face of increased competition from foreign suppliers. Major international developments were seen to include further WTO-negotiated trade reforms, continuing instability in global grains markets, Korea's international responsibilities as a member of the OECD and APEC, and preparations for increasing interaction between South and North Korea. The long-term projections presented in this report (no detail of their derivation was given) are that the share of agriculture, forestry and fishing in GDP will decline from 6.4% in 1995, to 2.0% in 2020, and between the same two years numbers employed in these sectors will decline from 12.9% to 2.7% of the total labour force and average farm size will increase from 1.2 to 3.3 hectares.

Components of the envisioned plan to meet such developments included increased investment in infrastructure including distribution systems, increasing farm size, investing in human capital, developing high-technology information systems and capital intensive production technologies (including genetic engineering and automatic control technologies), and increasing emphasis on conservation of the natural environment. No estimates were made of the levels of public expenditure required to fulfil such aims, but a greater role would seem to be envisaged for local government, producers' organisations and the private sector. In terms of policy instruments that might be introduced, the report suggests that direct farmer payments be introduced for income support to rice producers, and that such payments might be aimed also at promoting environmental conservation. The introduction of income insurance is also suggested, to cover both production and price risks. The use of such farm support instruments in Korea would not be inconsistent with current trends in several developed economies, and may reflect a recognition on the part of the Koreans that as a member of the OECD, their agricultural policies will in future be under scrutiny as never before.

SUMMARY

The objectives sought by agricultural policy-makers in Korea have changed, from a typical developing country focus on self-sufficiency and income-equality to now emphasise modernisation and competitiveness, infrastructural improvement and environmental concerns. Food production in Korea became heavily protected from international competition through the use of a variety of non-tariff barriers and domestic prices in many cases were well above world levels, and by and large remain so despite recent policy reforms. While providing incentives to producers, such high prices have reduced the well-being of consumers. Furthermore, such high protection was not always sufficient to maintain self-sufficiency at stable prices and in the case of beef for example, rising prices have persuaded government to reduce trade barriers.

Implementation of the Uruguay Round agreement over the period up to 2004 will have significant impacts on some sectors of Korean agriculture. Aggregate output will increase little and the sector will become increasingly capital intensive. Thus agriculture's contribution to national output and employment will continue to decline. On the commodity level, the impacts could be most noticeable in the beef and dairy industries. The extent of these impacts will depend upon how successful will be programmes to transform agriculture into a modern and capital-intensive sector, but prospects appear most promising for intensive horticultural production rather than beef and dairy production or the traditional cropping sector. But even with the improved access conditions in place by the end of the implementation period, the domestic distribution and marketing infrastructure may continue to be a constraint to increased foreign activity in the Korean market.

Pressures for further reform of Korea's agricultural policies will likely intensify in future. On the domestic front, urban links to the countryside will weaken, as will the political power of farmers. Current levels of public support to agriculture may not be sustainable - already, there are conflicts between the agricultural ministry and that responsible for the national budget over this issue. International pressures for further policy reforms will arise through the process of future multilateral trade negotiations in the WTO, with the next agricultural round due to start by 1999. Korea will face additional reform pressures now that it is a member of the OECD, such as regular and transparent examination of its policies and their costs. Pressures for policy change will also continue as APEC works its way through the process of implementing its vision of free trade by 2020. As a result, it could well be that Korea adopts farm support policies similar to those now being adopted in some other OECD countries, and which are encouraged by the OECD and permitted by WTO rules, such as decoupled direct payments to farmers, and support payments that recognise the production by farmers of environmental goods.

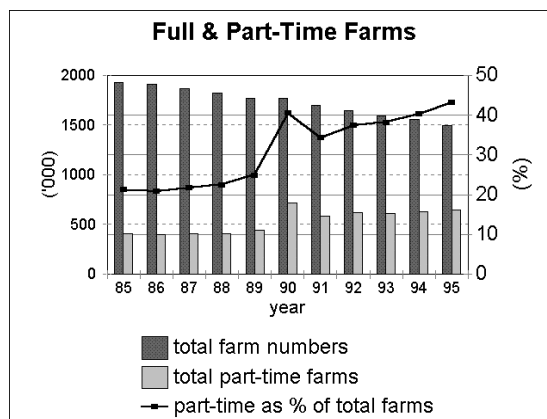
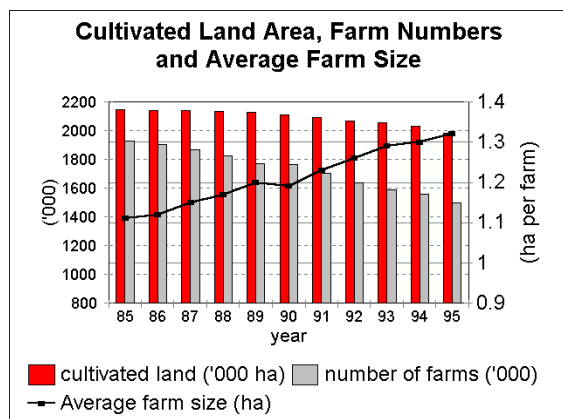
Chapter 4

Food Raw Material Supply: Changes in the Structure and Mix of Domestic Production

DECLINE IN THE NUMBER OF FARMS

The number of farms in Korea has declined from 2.5 million in 1970 to 1.5 million in 1995 (Table 4.1). While the total area of farm land in the country has also fallen, the decline has not been so rapid so that average farm size has risen from 0.9ha in 1970 to just over 1.3 ha in 1995. The Land Reform Act of 1949 placed a ceiling of 3 ha on farm size and prohibited tenancy of farmland to enhance rural peoples' chances of becoming farm owners, but did inhibit the growth of farm size. A recent development has been the increase in the number of farms of over 3 ha in size, encouraged by land policy reforms. Some consolidation of smaller farms is occurring, encouraged by favourable movements in machinery costs relative to wages, as well as the continuing depopulation of the countryside.

The continuing industrialisation of Korea, and urbanisation of the population, has given rise to a sharp increase in the number of part-time farms. While the latter comprised 21% of all farms in 1985, the percentage had more than doubled to 43% by 1995.

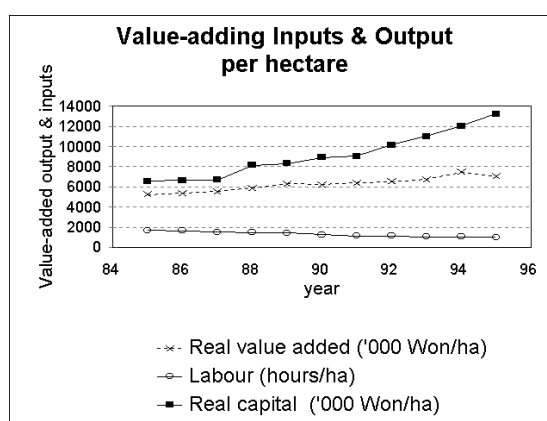
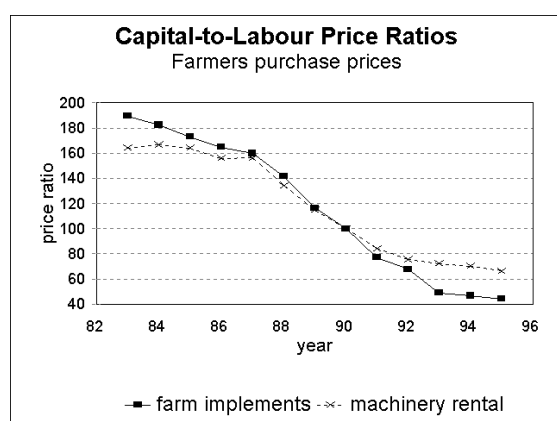


Source: Ministry of Agriculture and Forestry

Figure 4.1 Changes in the Size and Status of Korean Farms

LABOUR AND CAPITAL INTENSITY AND TRENDS IN PRODUCTIVITY

The rapid development of the Korean economy has placed upward pressure on wage rates, and labour has become relatively more expensive than capital. Figure 4.2 shows two capital-to-labour price ratios, where capital costs are measured alternatively as the price index of farm implements and as that of machinery rentals. In either case, over the period 1983 to 1995, the cost of farm labour has more than doubled relative to that of capital. Korean farmers have responded by increasing the capital intensity and mechanisation of their production, substituting capital for labour. Figure 4.2 also shows that over the decade ending with 1995, the real capital input per hectare doubled while the labour input per hectare declined by 40%.



Source: Ministry of Agriculture and Forestry

Figure 4.2 Farmers' Response to Changing Labour and Capital Prices

Table 4.1 Trends in Factor Productivity (Farm household data)

Year	Real value-added per hectare (‘000 Won/ha)	Real value-added per unit capital (Won/Won)	Real value-added per unit labour (‘000 Won/hour)
1985	5,273	0.80	3.57
1986	5,410	0.81	3.77
1987	5,540	0.82	4.15
1988	5,924	0.72	4.64
1989	6,314	0.76	5.30
1990	6,260	0.70	5.97
1991	6,395	0.71	6.59
1992	6,533	0.64	6.65
1993	6,748	0.61	8.37
1994	7,475	0.62	9.47
1995	7,057	0.53	9.35

Notes: Value-added per farm deflated by the farm price received index

Real capital input equals current capital deflated by the machinery rental index

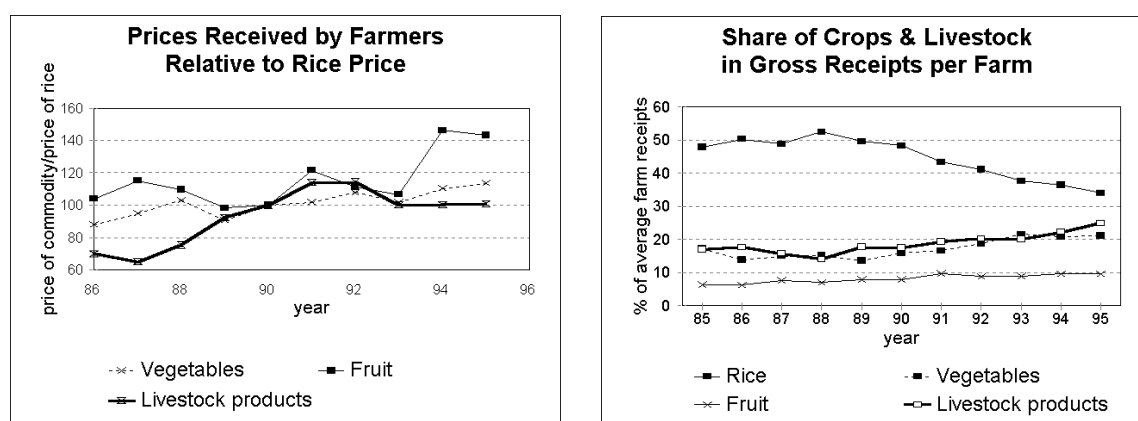
Source: Ministry of Agriculture and Forestry

Table 4.1 shows trends in average factor productivity, computed from average farm household survey data (MAF). Average value-added per farm (gross receipts less intermediate input purchases) has increased more than proportionately to the increase in average farm size, and increased despite the reduction in the average input of labour per farm over the past decade. Thus the productivity of both land and labour, measured as real value-added per factor input, has increased. Land productivity has increased by almost 3% per year over that period, while that of labour has grown at the much faster rate of 10% per year. However the rapid growth in capital intensity of Korean farming has resulted in a decline in capital average productivity of 4% per year.

CHANGING LAND USE AND CROP DIVERSIFICATION

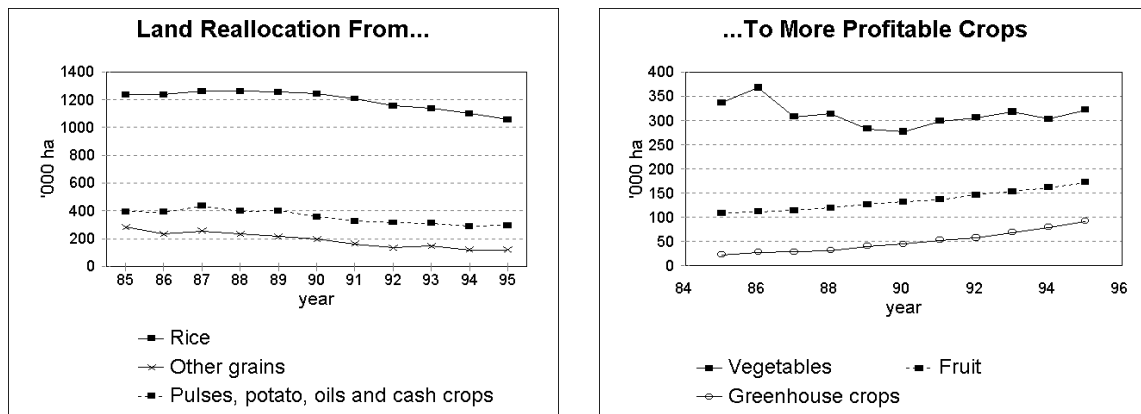
Given Korean agriculture's generally high level of protection from world markets, prices received by Korean farmers have been influenced primarily by domestic factors including changes in demand (see Chapter 3). With income growth the demand for rice and other staple crops has declined, as consumers have increased consumption of fruits, vegetables and livestock products. The rice price in Korea has long been the commodity price on which the prices of almost all other commodities have been based. In Figure 4.3 the farm prices of fruits, vegetables and livestock products are indicated, in each case relative to the rice price. It is shown that over the past decade, the prices received by farmers for these three commodity groups have increased relative to the price of rice.

Korean farmers have reacted predictably to changes in relative prices, and Figure 4.4 shows that land allocated to the staple crops has declined. Some hilly land used for rice production is now being abandoned; rural labour shortages call for mechanised production methods which are ill-suited to hilly terrain. In 1995, around 50,000ha of such rice land was abandoned, compared with an average of 25,000 ha per year previously. At the same time there has been considerable growth in the land area used for horticultural crops; the latter are also relatively capital and technology intensive, so changes in land use reflect Korea's changing comparative advantage. Between 1990 and 1995, the total area of cultivated land declined by 9%, but that used for rice production fell by 15%. On the other hand, the area of land planted in vegetables, fruit, or used for greenhouse crops, increased by 16%, 30% and 104% respectively. Rice production still dominates Korean agriculture however, accounting for 48% of all cultivated land in both 1985 and 10 years later. As a result of crop price changes and the changes in land use, the share of rice in gross farm receipts has fallen markedly in recent times (Figure 4.3). Rice contributed 52% of farm revenues in 1988, but had fallen to 34% by 1995. Over the same time period, the contribution of fruits and vegetables combined rose from 22% to 31%, and that of livestock products from 14% to 25%.



Source: Ministry of Agriculture and Forestry

Figure 4.3 Diversification in Response to Changing Prices

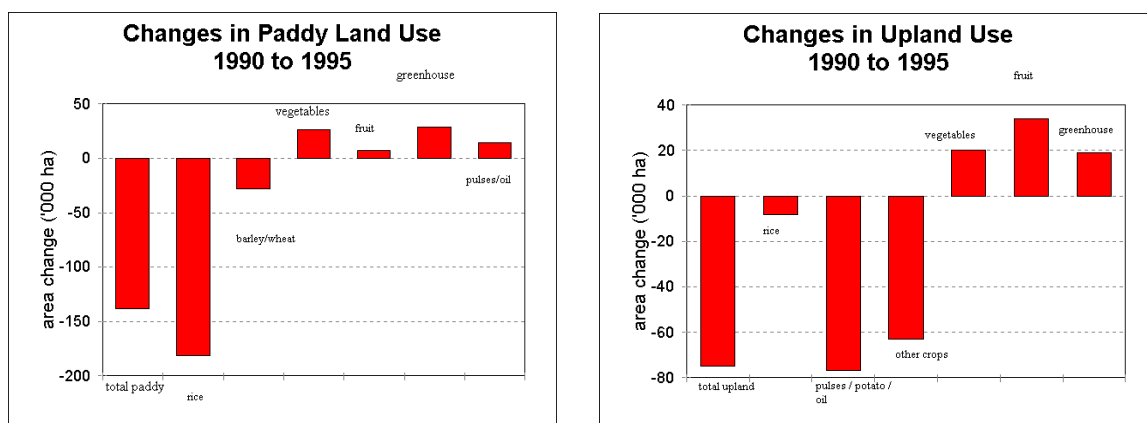


Source: Ministry of Agriculture and Forestry

Figure 4.4 Changes in Land Use

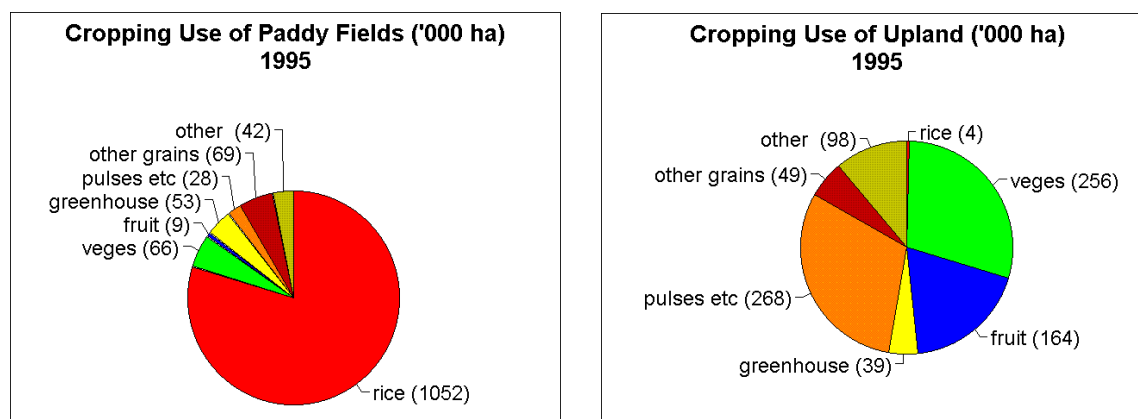
Crop farming in Korea can be divided into paddy cropping and upland cropping. The former is concentrated in the southwestern region of the country and primarily involves rice production (80% of total paddy land in 1995). Production on uplands is more diversified, comprising barley and other grains, and fruits and vegetables. This type of cropping is located mainly in the eastern part of the Korean peninsula. The land use changes described above have impacted on both paddy and upland (Figure 4.5). Over the 5 years ending 1995, the total area of both paddy and upland declined. The decline in the case of paddy was 138,000ha but the area of paddy used for rice declined even more, by over 180,000 ha. This allowed the production of vegetable and greenhouse crops to expand despite the fall in total paddy land area - by 26,000 and 29,000ha respectively. The total area of cropped upland fell by 75,000 ha between 1990 and 1995, and that used for staple crop production declined by 148,000 ha. The area of upland used in vegetable, fruit and greenhouse production expanded over the same period by a total of 73,000ha.

Figure 4.6 indicates the relative importance of various crops on paddy and upland in 1995. The dominance of staple crops other than rice, along with fruits and vegetables on upland is obvious, while greenhouse farming is more evenly distributed across both land classifications. Fruit production is one of the more rapidly expanding sectors within Korean agriculture almost entirely



Source: Ministry of Agriculture and Forestry

Figure 4.5 Changes in Land Use by Land Type



Source: Ministry of Agriculture and Forestry

Figure 4.6 Major Crops on Paddy and Upland

on upland. The area planted in fruit trees expanded from 99,000ha in 1980 to 172,000 ha in 1995. Over the same period, total fruit production rose from 0.8 to 2.3 million tonnes. The fruit industry is dominated by apples, and in 1995 716,000 tonnes were produced off 32,200 bearing hectares. In addition, another 17,900 hectares of apples were yet to come into production. The most rapid output growth however has taken place with grapes and mandarin oranges.

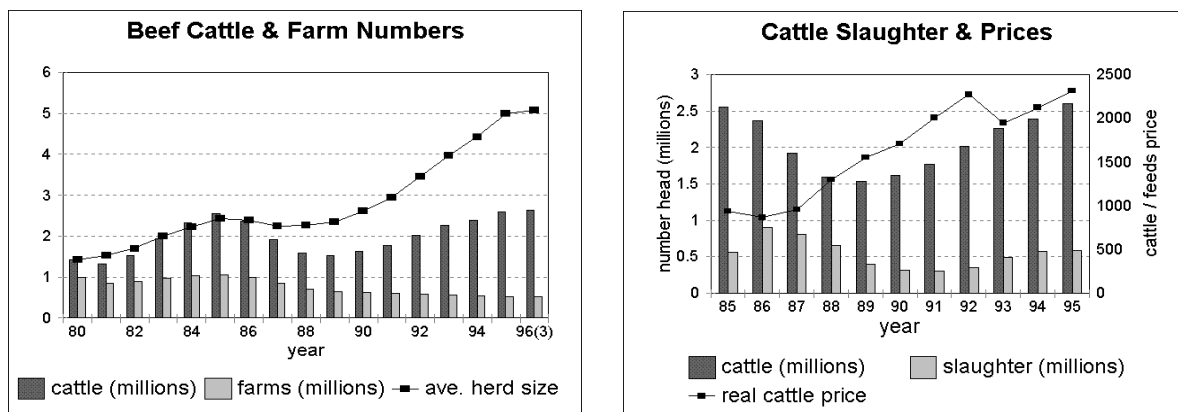
To summarise, Korean crop farming is becoming more specialised as rice farmers (especially on the uplands) move into the production of horticultural crops and at the same time, out of cattle farming.

LIVESTOCK PRODUCTION

In line with changes in consumption patterns and commodity prices, the numbers of livestock farmed in Korea have grown rapidly over the past couple of decades. In all categories except beef, animal numbers have tended to display steady growth - comparing 1995 with 1980, the number of dairy cattle had increased from 180,000 to 553,000 head, pig numbers rose from 1.8 million to 6.5 million, and the increase in chicken numbers was from 40.1 million to 85.5 million. Pig, chicken and egg production receives relatively little government assistance, is large scale, and foreign technology has been successfully adopted.

The beef sector has been heavily protected in the past, and it has not been uncommon for domestic beef prices to have been over three times as high as import prices. Such levels of protection have been falling in recent times however, as the allowed volume of imports has expanded. The Korean beef industry has also been subject to considerable cyclical instability, largely policy-induced. Beef cattle numbered 1.4 million in 1980 but increased to 2.6 million by 1985. Since then cattle numbers fell to a low of 1.5 million in 1989, but again expanded to over 2.6 million in 1996 (Figure 4.7). Government regulations allowed beef imports only during 1978-79, 1981-84 and since 1988, and these periods corresponded to the peaks of the Korean cattle price cycle. Cyclical tendencies were also amplified by loans for the purchase of calves and the Government's ban on the slaughter of certain classes of cattle over the 1977-84 period, and the subsequent lifting of these controls encouraged a rapid increase in slaughterings. A sustained rise in cattle prices relative to feed costs then followed, and slaughterings fell to a trough in 1991 as the national herd was rebuilt.

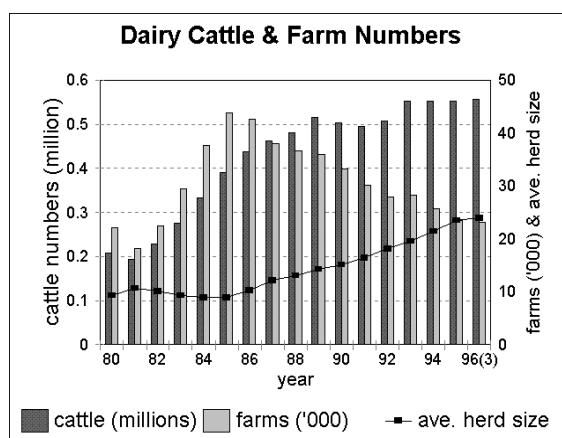
Traditionally, the native beef cattle were fed a diet based on rice bran, straw and other vegetable matter. More recently the trend has been to increased quantities of compound feed in cattle rations, and the traditional farming system involving rice, forage crops and cattle production is disappearing as a non-competitive system for either rice or cattle production. While the number of beef cattle rose by 69% between 1989 and 1995, compound feed usage rose by 102%. However, the domestic feed manufacturing industry is very dependent on imported raw materials. Even leaving aside Korea's low self-sufficiency in compound feedstuffs, her self-sufficiency in beef has fallen in recent times, from over 80% in the 1980s to 51% in 1995.



Source: National Livestock Cooperatives Federation

Figure 4.7 Beef Cattle Statistics

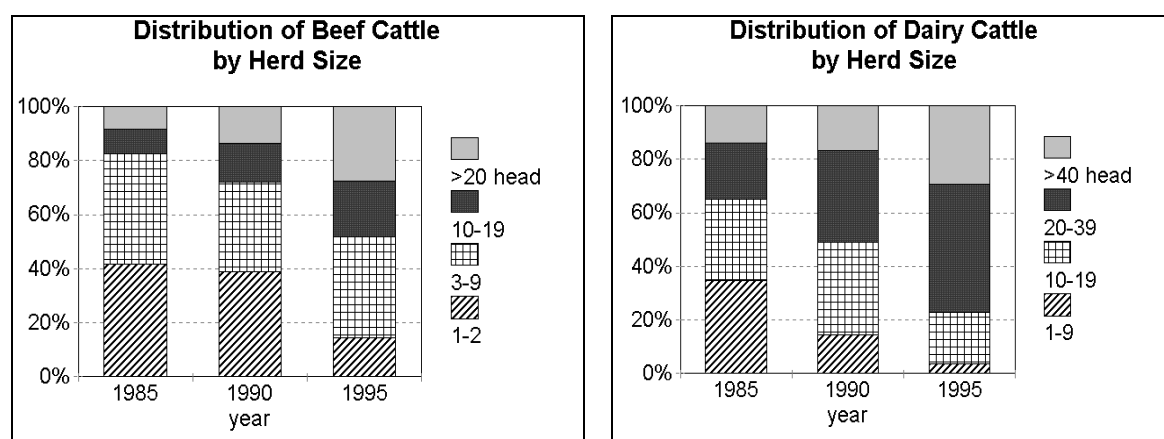
Dairy farming in Korea is a relatively recent development, having commenced in the 1960s and assisted by heavy protection afforded through tight controls over dairy product imports. As shown in Figure 4.8, the numbers of both dairy cattle and dairy farms were still increasing steadily during the first half of the 1980s although the average herd size remained around 10 head. Since 1985, there has been some further increase in the number of dairy cattle, but the more noticeable feature has been a more than doubling of average herd size and therefore a reduction in the total number of dairy farms. The trend to more intensive feeding has been more evident than in the beef sector - between 1989 and 1995 dairy cattle numbers rose by just 7% while the output of dairy cattle compound feed rose by 22%. Between 80-90% of milk production is consumed fresh, and Korea's self-sufficiency has fallen from over 100% prior to 1990 to 93% in 1995.



Source: National Livestock Cooperatives Federation

Figure 4.8 Dairy Cattle and Farm Numbers

Trends in the distribution of beef and dairy herd sizes are evident from Figure 4.9. While only 8% of the beef cattle were farmed in herds greater than 20 head in 1985, this percentage had increased to 28% by 1995. For dairy cattle, the proportion farmed in herds of at least 40 head increased from 14% in 1985 to almost 30% in 1995.



Source: National Livestock Cooperatives Federation

Figure 4.9 The Trend Towards Larger Herd Sizes

Table 4.2 shows recent developments in livestock outputs, and uses production per livestock unit as an indicator of trends in productivity in Korean livestock production. Beef production has followed a similar cyclical pattern to that of cattle slaughtering, while outputs of pork, poultry and milk have increased more steadily. However output per livestock unit appears to have trended downwards in the case of both beef and pork production. While pork output was 2.7 times as large in 1995 as in 1980, the number of pigs farmed in 1995 was 3.6 times the number in 1980. The decline in the productivity of beef production reflects in part a relatively low feed conversion performance due to the dominant use of native cattle and the reluctance to improve their performance through crossbreeding with specialist beef breeds, and inadequate nutrition and other environmental conditions. On the other hand, milk output per cow increased over the 1980-95 period by an average of 3.0% per year.

Table 4.2 Livestock Production and Performance

	Production (‘000 tonnes)				Output per Livestock Unit (kg per animal)			
	Beef	Pork	Chicken	Milk	Beef	Pork	Chicken	Milk
1980	93	235	90	452	68.3	131.7	2.2	2,511
1985	116	345	126	1,006	45.4	120.9	2.5	2,580
1990	95	506	172	1,752	58.6	111.7	2.3	3,476
1991	98	499	207	1,741	55.3	98.9	2.8	3,510
1992	100	601	231	1,816	49.5	110.0	3.2	3,573
1993	130	618	239	1,858	57.5	104.3	3.3	3,360
1994	147	614	245	1,917	61.4	103.1	3.0	3,473
1995	155	639	277	1,999	59.8	98.9	3.2	3,615

Source: National Livestock Cooperatives Federation

SUMMARY

The structure of farm production in Korea is rapidly changing. Urbanisation of the population, and changing relative prices of both inputs and outputs have been major influencing factors. Wage rates have risen relative to capital costs and farm production is becoming increasingly capital intensive. Land is shifting from the production of traditional but relatively less profitable crops towards fruit and greenhouse production alternatives.

Livestock production has been expanding rapidly, although the beef industry has been plagued by cyclical instability and growth in the dairy sector appears to be levelling off. Trends are towards more modern and intensive feeding systems and larger herd sizes in the cattle sector. Output per livestock unit has been steadily increasing in the poultry and dairy sectors, but this has not been the case with beef and pork farming.

In future farming in Korea will be capital and technology intensive, in recognition of the economy's comparative advantages and the imperative to increase competitiveness with respect to imported food supplies and part-time farming will become more prevalent. Recent changes to land market regulations will encourage some increase in farm size and farm amalgamation, and therefore cost reductions due to the realisation of size economies.

Chapter 5

Distribution System For Fruit, Beef, Mussels And Vegetables In Korea

INTRODUCTION

A marketing margin, broadly defined, is the difference between the price received by the farmer and the price for the product paid by the consumer. An alternative definition is that marketing margins are the total cost of all of the various marketing and processing services incurred in order to make a product available to the consumer. The array of services provided in the marketing process are vital to providing products to consumers. Those services are normally divided into four categories of providing market utility: time, form, place and transfer (Downey and Erikson, 1987).

While each of these categories of utility are provided during the movement of a product from where it is produced to where it is sold to the final consumer, the importance of marketing margins becomes more pronounced when a product moves internationally. For those products, most of the marketing costs (marketing functions) involved in exporting a domestic product are repeated at least three times as the product moves from the point of local production, through the domestic marketing system, into the export marketing system and then again into the domestic marketing system, but this last time in the destination country. Time, place, form and transfer utility are created normally only one or two times during the domestic selling process. But when a product is sold internationally, time, place and transfer utility is provided during at least three different periods: in the originating country, during the international movement and finally in the destination country. While form utility (either for a fresh product or a processed product) is normally provided only once, the other utilities

(place, time and transfer) are provided a number of times as the product moves through the marketing channels.

Consequently, for a product to remain competitive in overseas markets, the complete understanding of marketing margins - particularly margins which provide place, time and transfer utility - is important. And, as the understanding of those margins increases, so will the recognition of the significance of potential changes in the institutions which provide those utilities.

When discussing the distribution of foods in Korea, an inescapable fact is the high urbanisation of the country. For example, Seoul and its neighbouring cities account for 40% of the country's entire population. Consequently, it is inevitable that Seoul should be the centre for distribution for imported food and beverage products.

While the economy of Korea has experienced remarkable growth during the past decade, the infrastructure required for a modern distribution system has not kept pace with the growth of the remainder of the economy. This has meant that domestic producers of meat, fruits and vegetables were constrained from selling their products to the urbanised markets. These constraints have also meant that domestic products often were at a price disadvantage to imported products. In addition, even for those domestic products which were not subject to competition from imported products, the high costs associated with delivering products using a relatively inefficient distribution system resulted in some products being priced beyond the reach of many urbanised consumers. As a consequence, the Korean government has established a series of public wholesale markets, operated by municipal and provincial governments, as a step to improve the distribution of products. While the initial intent was to improve the ability of domestic producers to meet the urbanised markets of Seoul, the impact on importers has also been significant.

The Korean government began its programme to improve the agricultural distribution system in the mid-1980s. This effort was increased in 1992 with the implementation of the Agricultural and Fisheries Restructuring Plan (see Chapter 2) to restructure the Korean agricultural and fisheries industries. With the intention of improving the ability of domestic producers to compete with international sources of farm products, this plan has had, and is having, a significant impact in the marketing and distribution system.

Wholesale markets play a very significant role in the Korean food distribution system. While in other countries, including New Zealand, direct marketing is becoming more significant as auction markets decline in importance, central markets - public wholesale markets, private wholesale markets and co-operative marketing centres - remain the predominate characteristic of Korean distribution. Of these three marketing types, public wholesale markets are growing, often with government support, while private wholesale markets are declining in importance.

Public wholesale markets, such as Karak (below) are operated under the rules and regulations established by the Korean government set out in "The Law of Marketing and Price Stabilisation of Agricultural and Marine Products". These public markets are government funded and operated by

local governments or market authorities (Kim, 1996). The significance of these public markets is expected to continue growing, in large part because of the great emphasis placed on these markets by the Korean Ministry of Agriculture, Forestry and Fisheries.

Wholesale Markets

As indicated above, an important characteristic of the Korean economy is its high degree of urbanisation. At the centre of the urbanisation is the capital, Seoul, and it is appropriate that the largest wholesale market in Korea, the Karak Market (also spelled as Garak in some documents) serves Seoul. This market, through which approximately 50% of all wholesale food sold in Seoul is marketed, is administered by the Seoul Agricultural and Marine Products Wholesale Market Corporation (SAMACO). The objectives of SAMACO are to assure the efficient mass-distribution of agro-marine products in Korea, to maintain reasonable prices, and to protect the interests of producers and consumers. Its roles include administration and management of Karak Market, maintenance of fair transaction procedures, supervision of wholesale market corporations and intermediate wholesalers, collection and distribution of marketing information (SAMACO, 1996).

The Karak Market is really a collection of markets and storage facilities: dried fish auction room, related dried marine products market, livestock market, meat direct-sales centre, marine products market, fruit and vegetable direct sales market, vegetable market, dried pepper sales centre, garlic sales centre, fruit market, fruit and vegetable related items market, dried marine products storage and processing plant and freezer storage. An important constraint in the distribution chain is the absence or very limited availability of chilling space or cool stores. While there is some freezer space at Karak and other markets, chillers and/or cool stores either do not exist or are very limited in size. These shortages are not limited to the wholesale markets and constitute a significant problem throughout the distribution chain, including the retail sector.

At the base of the Karak Wholesale Market are wholesale market corporations. These are private wholesale companies, sanctioned by the Seoul Metropolitan government. It is the role of the corporations to collect and assemble goods from producers or shippers and to sell them to intermediate wholesalers and designated buyers through auction. In 1996, there were seven wholesale market corporations, in addition to several co-operatives, operating at Karak.

Wholesale market corporations collect and sell products to either intermediate wholesalers or designated bulk buyers. There are approximately 2,300 intermediate wholesalers at Karak who collect products at auctions and then sell the products to retailers or direct-sale merchants. Designated bulk buyers are large buyers, such as supermarkets or processors. These buyers participate at auctions with wholesalers.

There are two additional merchants at the Karak Market. *Related-Items Merchants* handle various kinds of agro-marine products such as processed foods and packaging material. *Direct-sales merchants* purchase products from intermediate wholesalers and sell them on to retailers or consumers. There are about 1,900 direct sales merchants at Karak.

At the heart of the Karak Market are the 36 auctions conducted almost around the clock (no auctions between 2400 - 0100). The wholesale market corporations pay producers or shippers for the products delivered and receive a commission from the products sold at the auctions. This means that if the shipper is a domestic farmer or an importer, they are responsible for all costs involved in bringing the products to the auction floor. Also, when the products are sold, the shipper must deduct a commission from the selling price. This commission will be paid to the wholesale market corporation.

Once a product is sold, either to an intermediate wholesaler or a designated bulk buyer, the product, for instance fruit, is then moved to retailers. The payment of the cost of transporting the products from the auction to the retailer is normally negotiated. Larger users, such as hotels or supermarkets, depend on the wholesaler to deliver the product. Smaller retailers normally purchase the goods for cash and provide their own transportation.

As in standard business practice, the purchaser may negotiate with the wholesaler the terms of payment. When using the auction company payment to the wholesaler is guaranteed by the auction company. For sales which do not go through the auction market, payment may extend for several months after delivery and even then, default is possible. Consequently, while auction markets may result in a higher price to the purchaser than direct negotiation, risk of payment must be borne by someone. So, with less risk, prices at auctions may be higher while direct sales may be more attractive to buyers, but in direct sales it is the seller who must bear the risks of non-payment.

It is a usual practice for importers to deliver their products to the wholesaler. Transportation costs are normally paid by the importer.

MARKETING MARGINS FOR SELECTED FRUITS, VEGETABLES, SEAFOOD AND BEEF

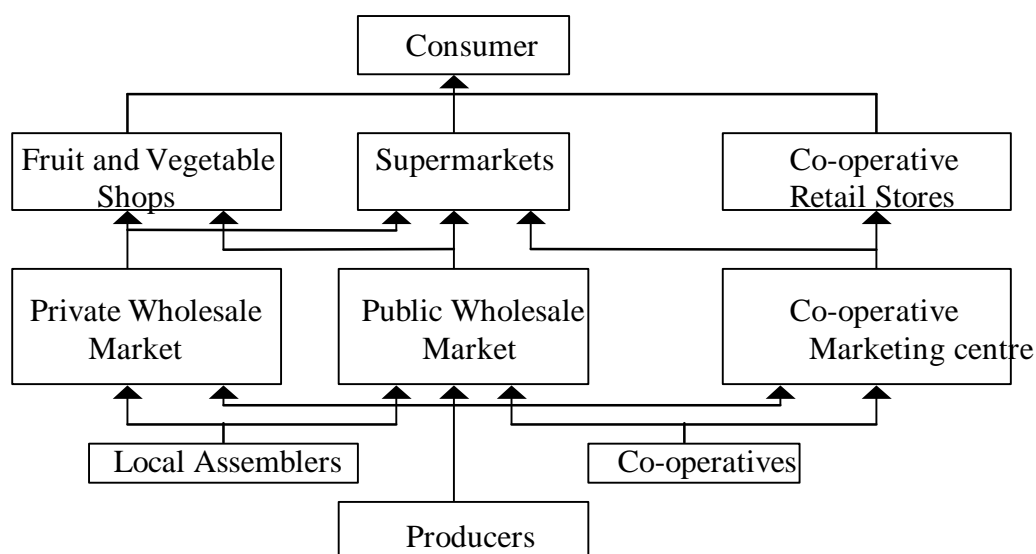
General vegetables

Although vegetables are basically distributed through free markets (Kim, 1995), the system is complicated and varies by type of vegetable - general vegetables, exotic vegetables and imported vegetables.

General vegetables are those which are predominately locally produced such as onions, potatoes, carrots, cabbages, tomatoes and pumpkins. While there may be some variation in the process, the sequence normally is from Producer to Collector to Jobber/Middleman to Wholesaler to Retailer to Consumer.

Because most producers in Korea are small-scale producers, the initial step in the domestic distribution system is taken by local assemblers who collect the product and take it to a wholesale market. It is estimated that about 50% of marketed vegetables are sold through local assemblers

(Kim, 1995). Figure 5.1 indicates the general overview of market channels for fruit and vegetables. However, each fruit or vegetable category often has a unique channel as indicated in Figures 5.2 - 5.5.

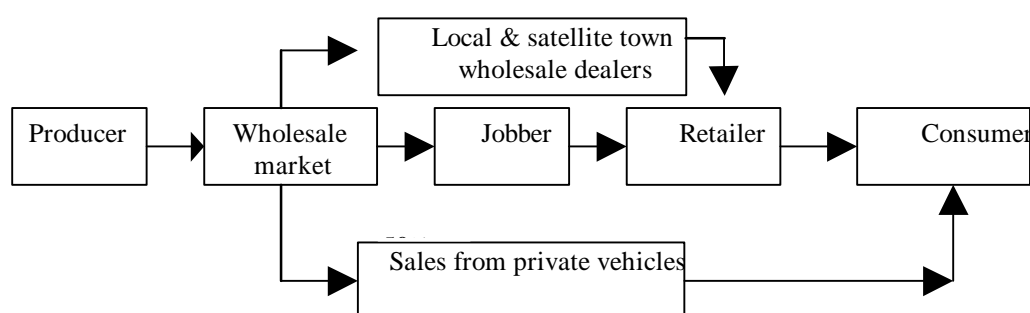


Source: Kim (1996)

Figure 5.1 General Distribution Channels for Domestically Produced Fruits and Vegetables

Pumpkins

About 60% of domestically produced pumpkins are sold through wholesale markets, with about 40% sold in local wholesale markets and then directly on to retailers. Table 5.1 provides an indication of the marketing margins for domestically produced pumpkins. For this product, the farmer receives about 37% of the final retail price. The remainder of the cost to the consumer is taken by those in the distribution process who provide time, place and possession utility.



Source: AFMC (1994)

Figure 5.2 Distribution Channels for Pumpkins (June 1994, Anseong → Seoul)

Table 5.1 Margins by Stage of Pumpkin Marketing (June 1994, Anseong → Seoul)

Classification		Component ratio %	Margin by stages	Component ratio %
Ratio received by household farm		37.3	Total margin	62.7
Distribution margin	Total margin	62.7	Shipping stage	16.5
	Direct cost	27.8	Wholesale stage	3.4
	Indirect & Profit	34.9	Jobber stage	15.7
			Retail stage	27.1

Source: AFMC (1994)

A more detailed analysis of the marketing margin is given in Table 5.2. By the time the pumpkins reach an auction market, the distribution margin has increased to over 50% of the final retail price.

Table 5.2 Analysis of Distribution Margins for Pumpkins (June 1994, Anseong → Seoul)

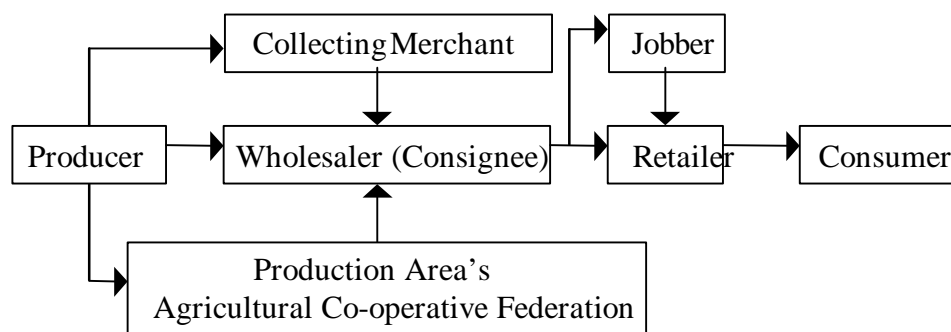
Classification			Amount (Won/kg)	%
Received price by farm household			2,614	37.3
<u>Producer stage</u>	<u>Shipping stage</u>	Loading cost	550	7.9
		Packaging cost	216	3.1
		Freight	300	4.3
		Unloading cost	80	1.2
	Farm household sales price		3,760	53.8
<u>Wholesale stage</u>		Auction fee	240	3.4
		Sales price	4,000	57.2
<u>Jobber</u>		Freight	100	1.4
		Loss rate	80	1.1
		Indirect cost & profit	920	13.2
		Sales price	5,100	72.9
<u>Retail stage</u>		Freight	100	1.4
		Loss	510	7.3
		Packaging cost	6	0.1

	Indirect cost & profit	1,284	18.3
	Sales price	7,000	100.0

Source: AFMC (1994)

Tomatoes

The distribution channel for tomatoes is relatively simple. With only infrequent use of collecting merchants, most of the collection and movement to market is done by co-operative shipping by farmer groups. This means about 70% of tomatoes sold move directly to wholesale markets from local producers. Distribution channels for tomatoes are detailed in Figure 5.3.



Source: AFMC (1994)

Figure 5.3 Distribution Channels for Tomatoes (April 1994, Koreyong → Seoul)

Contrasted with pumpkins, Korean tomato growers receive a higher percent of the final retail price - almost 60% compared with 37% for pumpkin. The retail stage margin is comparable to pumpkins, but the wholesale stage, particularly moving the tomatoes to the wholesale market, is less. Table 5.3 contains information about the distribution margins, and more detailed information is given in Table 5.4.

Table 5.3 Margins by Stage of Tomato Marketing (April 1994, Koreyong → Seoul)

Classification		Component ratio (%)	Margin by stages	Component ratio (%)
Ratio received by farm household		59.8	Total margin	40.2
Distribution margin	Total margin	40.2	Producer stage	6.9
	Distribution cost	9.9	Wholesale stage	5.3
	Indirect & Profit	30.3	Retail stage	28.0

Source: AFMC (1994)

Table 5.4 Analysis of Distribution Margins for Tomatoes (April 1994, Koreyong → Seoul)

Classification			Amount (Won/kg First grade)	%
Received price by farm household			1,495	59.8
<u>Producer stage</u>	<u>Shipping stage</u>	Packaging cost	30	1.2
		Freight	33	1.3
		Unloading cost	9	0.4
		Auction fee	100	4.0
	Sales price		1,667	66.7
<u>Wholesale stage</u>		Freight	9	0.3
		Indirect cost & profit	124	5.0
		Sales price	1,800	72.0
<u>Retail stage</u>		Freight	67	2.7
		Indirect cost & profit	633	25.3
		Sales price	2,500	100.0

Source: AFMC (1994)

Carrots

No marketing channel diagram is available for domestic carrots. It is assumed its marketing channels are similar to other vegetables. The return to the grower, at 43.3% is higher than most other vegetables and the retailer margin of 16.7% is lower than for other vegetables. Tables 5.5 and 5.6 contain details.

Table 5.5 Margins by Stage of Carrot Marketing (September 1993, Pyungchang → Seoul)

Classification		Component ratio (%)	Margin by stages	Component ratio (%)
Ratio received by farm household		43.3	Total margin	56.7
Distribution margin	Total margin	56.7	Producer stage	16.2
	Distribution cost	18.0	Wholesale/jobber stage	23.8
	Indirect & Profit	38.7	Retail stage	16.7

Source: AFMC (1994)

Table 5.6 Analysis of Distribution Margins for Carrots
(September 1994, Pyungchang → Seoul)

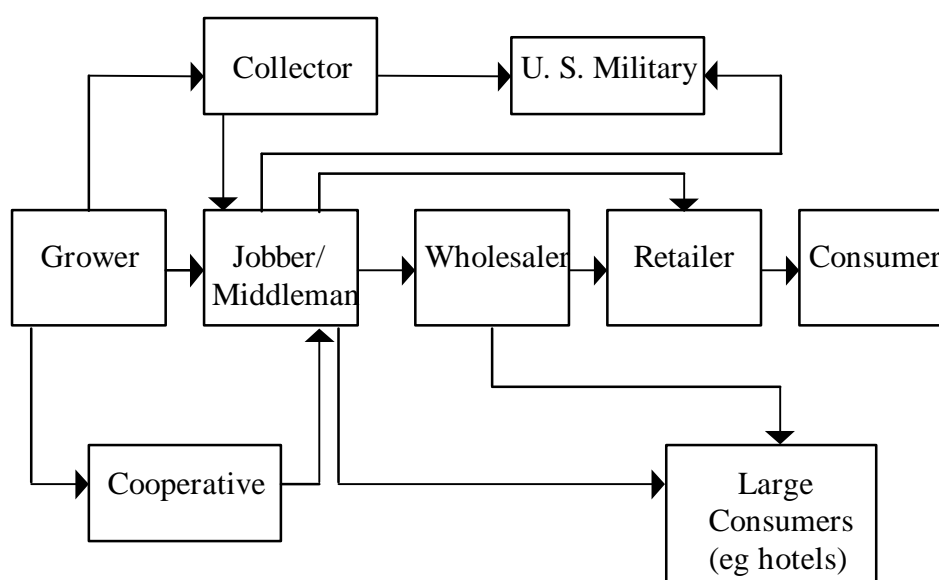
Classification			Amount (Won/kg, Second class)	%
Received price by farm household			650.0	43.3
<u>Producer stage</u>	<u>Shipping stage</u>	Loading cost	65.0	4.3
		Packaging cost	5.0	1.9
		Freight	28.3	0.3
		Other	10.0	0.7
		Unloading cost	4.0	1.3
		Indirect cost & profit	130.7	8.7
	Farm household sales price		893.0	559.5
<u>Wholesale stage</u>		Auction fee	57.0	3.8
		Sales price	950.0	63.3
<u>Jobber</u>	Freight		4.0	1.4
	Selecting & cleaning fee		26.7	1.8
	Other		3.3	0.2
	Loss		98.4	6.6
	Packaging fee		3.0	0.2
	Indirect cost & profit		164.6	11.0
	Sales price		1,250.0	83.3
<u>Retail stage</u>	Freight		12.5	0.8
	Packaging cost		10.0	0.7
	Packaging cost		6.0	0.1
	Indirect cost & profit		227.5	15.2
	Sales price		1,500.0	100.0

Source: AFMC (1994)

Exotic vegetables

As opposed to general vegetables, most of the domestic production of 'exotic' vegetables (capsicum, broccoli and cauliflower) is initially sold directly to wholesalers, rather than through wholesale

markets. A significant participant in the marketing channel, for these vegetables, is the United States military. The industry has also experienced the increasing importance of large buyers such as the hotel and restaurant trade. The impact of distribution reforms on these marketing channels will be important, but not as significant as for other domestically produced 'non-exotic' vegetables because of the limited volume sold through wholesale markets.



Source: AFMC (1994)

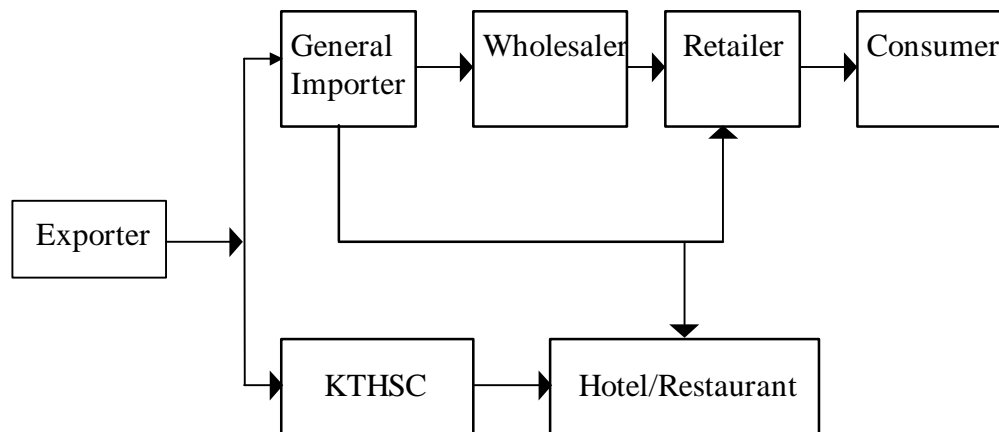
Figure 5.4 Distribution Channels for Local “Exotic” Vegetables

Imported vegetables

The distribution channels faced by imported vegetables are similar to domestically produced vegetables, except the collection is done by the importer and the product moved directly to the wholesale market. As with locally produced vegetables, some of the imported produce moves directly to large buyers. Also, the Korean Tourist Hotel Supply Centre (KTHSC) purchases imported vegetables directly for the hotel and restaurant trade.

A significant difference between imported vegetables brought to the wholesale market and domestically produced vegetables at the same market is the uniformity of size, quality and packaging of imported products. Kim (1995) notes that grading and packing is very poor at the local collection level where there are no standards for grading products. In fact, local producers often ship their products unpacked and ungraded. Consequently, because value is added by importers when they assist transfer of the vegetables by grading, classifying and boxing of their products, imported vegetables often receive higher prices. These higher prices may reflect some quality differences but more probable, they reflect the additional costs incurred in grading, classifying and boxing. However, as wholesale markets increase in size and volume, it is expected that locally produced

vegetables will begin to become more standardised in their presentation and packaging. This means a price premium which may be received by imports for superior packaging, labelling, etc. may begin to disappear as auction markets grow in size.



Source: AFMC (1994)

Figure 5.5 Distribution Channels for Imported “Exotic” Vegetables

Fruits

Unlike other types of farm production such as major vegetables, barley and rice, fruit production is predominately a secondary product for farmers. As a consequence, production is small scale and marketing and distribution costs are significant. In some countries the move toward direct farmer-retailer link is replacing the auction market system; however in Korea, the auction market system is seen as a preferred method to sell fruits.

Because small scale fruit production is common in Korea, there must be assembly of a significant volume of fruit for auction markets to function properly. This means the fruit must be collected from a variety of locations and moved to a central market. As with vegetables the first step, after harvest, is for the fruit to be collected. These collectors are normally either co-operatives or individual fruit collectors. In some countries, increasingly large-scale retailer chains such as department stores collect fruit directly from growers. In Korea, such relationships are not the predominate way in which fruit is sold to retailers and, contrary to the experience in other countries, it is believed this trend will not grow in Korea. Also, the practice of a farmer growing fruit under contract for a particular retailer, as is done occasionally in New Zealand, is very rare in Korea. The goal of a retailer which chooses to by-passes the collector and wholesaler is to capture the margins associated with the functions performed by the collector and wholesaler. The marketing functions of place, time and transfer utility are still performed, but a fewer number of times.

Regardless of whether the product is produced domestically or imported, most fruit that is marketed in Korea progresses through the marketing chain with a stop at a wholesale market. The exception, as noted above, are those products purchased directly by retailers. Examples of the process and costs of marketing margins for fruit are given below.

Kiwifruit

As with many other products, New Zealand exporters face competition from Korean-produced products, including kiwifruit. Approximately 30% of imported kiwifruit are sold through the Karak auction market (AFMC, 1996). It is estimated that 25-30% move directly to large distribution chains (department stores) with the remaining imported kiwifruit auctioned in wholesale markets other than Karak. Industry observers believe the volume sold directly to large distribution chains and department stores will decline as larger quantities are sold through conventional means, perhaps as the popularity of kiwifruit increases and prices decline. This will place imported kiwifruit more directly into competition with domestically produced kiwifruit as the majority of the latter are auctioned. As a consequence price, rather than non-price factors, will become the primary driving factor of products sold in Korea. Tables 5.7 and 5.8 provide detail of distribution and marketing margins for domestically-produced kiwifruit.

Table 5.7 Marketing Margins for Kiwifruit Produced in Korea - by Stage (February 1995)

Classification		Component ratio (%)	Margin by stages	Component ratio (%)
Ratio received by household farm		52.0	Total margin	48.0
Distribution margin	Total margin	48.0	Collector stage	24.0
	Direct cost	17.2	Wholesale stage	8.0
	Indirect & Profit	30.8	Retail stage	16.0

Source: Various, including author's estimates.

Table 5.8 Analysis of Marketing and Distribution Margins for Kiwifruit Produced in Korea (February 1995)

Classification		Amount (Won/kg)	%
Farmer's price to collector		1,295	52.0
<u>Collector</u> <u>stage</u>	Packaging cost	95	3.80
	Labour cost	80	3.28
	Transportation cost	80	3.12
	Commission for auction	115	4.56
	Indirect cost & profit	230	9.24
	Sales price	1,895	76.00
<u>Wholesale</u> <u>stage</u>	Transportation cost	10	0.48
	Indirect cost & profit	185	7.52
	Sales price	2,090	84.00
<u>Retail</u> <u>stage</u>	Freight	50	2.00
	Indirect cost & profit	350	14.00
	Sales price	2,490	100.0

Source: Various, including author's estimates.

Table 5.9 reflects margins by stage for imported kiwifruit. Note that the imported price is only 26% of the consumer price, compared with 52% for Korean kiwifruit. When tariffs are included (from 1994) the landed price is about even with the farm price received by Korean producers of kiwifruit. Table 5.10 provides additional detail for imported kiwifruit margins. Compared to domestic kiwifruit, margins, particularly retailer margins, are much higher.

Table 5.9 Margins by Stage of Imported Kiwifruit Marketing

Classification		Ratio of margin (%)
Ratio of import price		26.1
Distribution margin		73.9
Margin by stages	Import stage	28.5
	Wholesale stage	12.1

Retail stage	33.3
--------------	------

Table 5.10 Analysis of Distribution Margin for Imported Kiwifruit (January 1994)

Classification		Amount (Won/kg)	%
Imported unit cost	C. I. F.	1,344	26.1
Importer	Tariff	672	13.0
	Other expenses & profit	797	15.5
	Sales price	2,813	54.6
Wholesaler	Other expenses & profit	625	12.1
	Sales price	3,438	66.7
Retailer	Other expenses & profit	1,718	33.3
	Sales price	5,176	100.0

The European landed price for kiwifruit (Tables 5.10 and 5.11) as a percent of retail price, is much greater for New Zealand kiwifruit than the landed price percent for imported kiwifruit in Korea. For New Zealand kiwifruit into Europe, landed costs are slightly over 53% of the total retail price. In Korea, landed costs for kiwifruit (of which New Zealand accounted for most imports), are only 26% of the retail price. The European margin is certainly better than the Korean margin, on a percentage basis, for imported kiwifruit. However, improvements in the Korean distribution system could provide relatively greater opportunities to improve the margin for imports into that country than into Europe.

Table 5.11 Margins by Stage of Kiwifruit Marketing, Europe, 1995

Classification		Ratio of margin (%)
Ratio of import price		53.9
Distribution margin		46.1
Margin by stages	Import stage	13.8
	Wholesale stage	3.7
	Retail stage	28.6

Source: NZ Kiwifruit Marketing Board.

Table 5.12 Analysis of Distribution Margin for Kiwifruit, Europe, 1995

Classification		Amount (NZ\$/Tray)	%
Imported unit cost	C. I. F.	7.82	53.9
Importer	Tariff	0.68	4.7
	Other expenses & profit	1.32	9.1
	Sales price		
		9.82	67.7
Wholesaler	Other expenses & Profit	0.54	3.7
	Sales price		
		10.36	71.4
Retailer	Other expenses & profit	4.14	28.6
	Sales price	14.50	100.0

Source: New Zealand Kiwifruit Marketing Board

The data contained in Tables 5.8 and 5.10 indicate that imported kiwifruit are priced, at the retail level, over twice that of domestically produced kiwifruit. While the import duty is a significant factor in this difference, margins for imported kiwifruit, particularly retailer margins, are substantially higher than margins for domestic products. If changes in the Korean distribution systems are effective in reducing distribution and marketing costs, one possible outcome would be that the distribution costs of imported products would equal domestic marketing and distribution costs. Using data from Tables 5.8 and 5.10 as a base, the impact of lower distribution costs on the price of imported kiwifruit was assessed. Tables 5.13, 5.14, 5.15 and 5.16 compare two different outcomes: lower distribution costs are absorbed into domestic margins either

- (a) as a fixed monetary amount in each step in the marketing and distribution process after the products are landed in Korea (Tables 5.13 and 5.14); or
- (b) maintaining a fixed percent in each step in the marketing and distribution process after the products are landed in Korea (Tables 5.15 and 5.16).

If the marketing and distribution costs for imported products equal domestic margins as in Tables 5.13 and 5.14, there will be a reduction of approximately 40% in the retail price of imported kiwifruit. If the percent share of each margin remains constant as in Table 5.15 and 5.16, there could be a reduction of about 32% in the retail price from that of Table 5.10. Either way, improved distribution and marketing systems in Korea will create downward pressure on prices at the retail level for both imported and domestic kiwifruit.

Table 5.13 Margins by Stage for Imported Kiwifruit, Assuming Constant Costs

Classification		Component ratio (%)	Margin by stages	Component ratio (%)
Import price		43.2	Total margin	56.8
Distribution margin	Total margin	56.8	Importer stage	37.7
	Direct cost	32.2	Wholesale stage	6.3
	Indirect & Profit	24.6	Retail stage	12.9

Table 5.14 Analysis of Distribution Margins by Imported Kiwifruit, by Stage, Assuming Constant Costs

Classification		Amount (Won / kg)	%
Import price		1,344	43.20
<u>Importer stage</u>	Import duty	672	21.60
	Clearance cost	75	2.41
	Inland transportation cost	80	2.57
	Commission for auction	115	3.70
	Indirect cost & profit	230	7.39
	Sales price	2,516	80.87
<u>Wholesale stage</u>	Transportation cost	10	0.32
	Indirect cost & profit	185	5.95
	Sales price	2,711	87.14
<u>Retailer stage</u>	Transportation cost	50	1.61
	Indirect cost & profit	350	11.25
	Sales price	3,111	100.0

Table 5.15 Margins, by Stage, for Imported Kiwifruit, Assuming Constant Percentage of Margin

Classification		Component ratio (%)	Margin by stages	Component ratio (%)
Import price		38.0	Total margin	62.0
Distribution margin	Total margin	62.0	Importer stage	38.0
	Direct cost	31.3	Wholesale stage	8.0
	Indirect & Profit	30.7	Retail stage	16.0

Table 5.16 Analysis of Distribution Margins for Imported Kiwifruit, Constant Percentage of Margins

Classification		Amount (Won / kg)	%
Import price		1,344	37.98
<u>Importer stage</u>	Import duty	672	18.99
	Clearance cost	75	2.11
	Inland transportation cost	110	3.12
	Commission for auction	161	4.56
	Indirect cost & profit	327	9.24
	Sales price	2,689	76.00
<u>Wholesale stage</u>	Transportation cost	17	0.48
	Indirect cost & profit	266	7.52
	Sales price	2,972	84.00
<u>Retailer stage</u>	Transportation cost	71	2.00
	Indirect cost & profit	495	14.00
	Sales price	3,539	100.0

Lemons

As a comparison to kiwifruit, margins for imported lemons are given in Tables 5.17 and 5.18. Similar to kiwifruit, the landed price is slightly more than 25% of the final price. The retailer

receives a larger percent of the margin for lemons than for kiwifruit. Retailer margins for kiwifruit were well above retailer margins for pumpkins, carrots and tomatoes. However, even at a retail margin of 33.3% for imported kiwifruit, the retail margin for imported lemons was higher at 44.3%.

Table 5.17 Margins by Stage of Lemon Marketing

Classification		Ratio of margin (%)
Ratio of import price		27.6
Distribution margin		72.4
Margin by stages	Import stage	22.9
	Wholesale stage	5.2
	Retail stage	44.3

Table 5.18 Analysis of Distribution Margin for Imported Lemons (January 1994)

Classification		Amount (Won/kg)	%
Imported unit cost	C. I. F.	882	27.6
Importer	Tariff (40 %)	353	11.1
	Other expenses & profit	376	11.8
	Sales price	1,611	50.4
Wholesaler	Other expenses & Profit	167	5.2
	Sales price	1,778	55.7
Retailer	Other expenses & profit	1,416	44.3
	Sales price	3,194	100.0

Source: AFMC (1994)

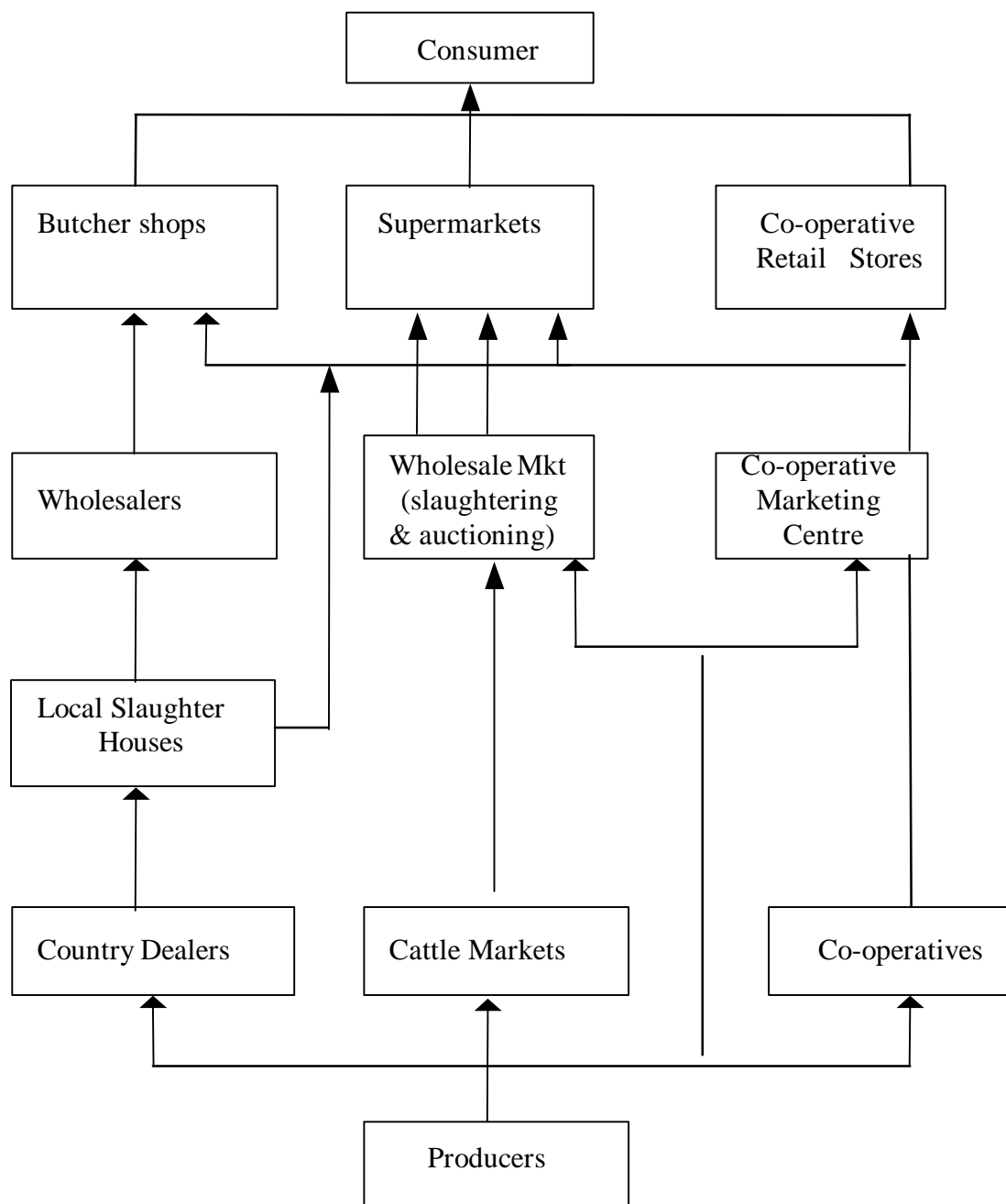
Beef

Domestic Beef

The system for marketing beef has been, in the recent past, a reasonably simple process for domestic producers and a complex process, bordering on Byzantine, for imported beef. For a variety of reasons, discussed briefly below, the marketing system for domestically-produced beef is separate from the marketing system for imported beef.

The market for domestic beef in Korea can be broadly categorised as a free market. Cattle producers have a choice about how to sell their products - to local assemblers, to wholesale markets, or on consignment to a co-operative or slaughter house. Figure 5.9 is a diagram of domestic marketing

channels for beef in Korea. Domestic beef producers have considerable flexibility about how to sell their beef. Although about 30% is marketed through wholesale markets, in a manner similar to fruit and vegetables, a considerable amount of cattle are marketed outside the wholesale market chain. In this situation, the product goes directly to butcher shop owners or private meat suppliers which cater to restaurants. Instead of title transferring at a wholesale market, this local beef is sold at local markets, often purchased by a meat supplier acting as an agent for a customer.



Source: Kim, 1996

Figure 5.6 Marketing Channels for Beef in Korea

Imported Beef

Imported beef has significantly different distribution channels than has domestic beef. This separation of domestic and imported beef is driven by a recognition that "For consumers it is difficult to distinguish low price imported beef from Hanwoo beef, or even from imported grainfed beef" (NLCF, 1991). Because of this difficulty, it was believed that some butcher shops were selling imported beef as higher-priced domestic beef and taking an unfair profit in the process. Consequently, separate distribution channels were established to assure maintenance of product identity for domestic and imported beef. Imported beef channels were further separated into grassfed and grainfed channels. Government officials believed that by establishing separate channels (1) the consumption of beef would increase among lower income consumers; (2) price information would be provided to Korean cattle farmers so they could estimate if their production was unduly underpriced; and (3) butchers would be prevented from gaining improper profits from selling mislabelled meat, that is selling imported beef as higher-priced domestic beef.

Table 5.19 gives a comparison of the marketing margins for imported beefgrassfed carcass beef and grainfed beef. An interesting aspect of the cost data is that retail margins for imported beef are very similar to retail margins for domestically-produced fruits and vegetables. However, the retail margins for imported beef are considerably below retail margins for imported lemons and kiwifruit. Whether this difference, which is considerable, may be attributed to the ability of fruit and vegetable marketers to effectively differentiate their products, and as a result receive a higher price, is unclear. What is clear is the significant margin for imported lemons and kiwifruit captured by retailers.

**Table 5.19 Comparison of Marketing Margins for Beef Imported in Korea
in Percent of Wholesale Price, 1995**

	KCSC		Wholesale
	Grassfed Carcas	Grainfed	Grainfed
Wholesale costs			
CIF	47.6	47.6	47.6
Boning	12.1	11.2	2
Tariff	9.5	10.8	9.4
Consignment Fee for sale			3
Listing Charge at Market			1.5
Sales Agent Commission	4	4.5	
NLCF Consignment Fee	2.2	2.5	
LPMO Operating Expense	0.8	0.8	
Other	2.3	1.6	
Total Cost	78.5	79	63.5
LDF	21.5	21	36.5
Wholesale	100	100	100

CIF = Cargo, insurance and freight

LPMO = Livestock Products Marketing Organisation

LDF = Livestock Development Fund NCLF = National Livestock Co-operative Federation
Wholesale = Retail price-retailer margin-transport cost-Brokers commission at auction
KCSC = Korea Cold Storage Corporation

Source: NLCF (1991)

Mussels

Until the late 1970s, the Korean seafood market was effectively closed to imported seafood. Progressively, the market has opened during the past two decades. Similar to fruits and vegetables, the auction market system is significant in the marketing of seafood. Until recently, the Korean government required that all locally caught fish be sold through producer markets or government authorised wholesale fish markets. These requirements were established in an attempt to assure effective monitoring of fish as a resource and to collect taxes. Changes in the marketing system have taken place. It is noteworthy that, unlike fruits and vegetables, the Korean government seems to be encouraging a range of marketing alternatives to the auction marketing system to improve marketing efficiencies (Smith et al, 1996).

While alternatives to auction markets are in the process of being developed, which would place imported fish more directly into price competition with the domestic catch, all imports must meet inspection and labelling requirements, regardless of how they are marketed. These labelling and inspection requirements are different than those required for the domestic catch. For instance, unlike imported fruits and vegetables, foreign analysis of imported fish is not accepted as an alternative to domestic inspection of the product. The Korean authorities undertake their own inspection of each shipment. This means imported seafood products are inspected twice - once in the exporting country and again when entering Korea. If problems with three consecutive import shipments appear, then all shipments will be detained while tests are completed by Korean authorities. This inspection and testing process takes about 10 days and effectively prevents shipments of fresh, chilled or live products to be made at a competitive price under these conditions. Further, a failed consignment must be returned to the country of origin which further increases the cost of landed product in Korea. Domestic catches, which also must meet similar standards, are also subject to inspection but only on a random basis.

Although the delays and associated extra costs incurred with these inspections can be met by the importer, the lack of control over the storage and handling during inspection, or delays during inspection, remain a significant problem for importers. The risks associated with this step of the marketing process can be considerable. As discussed with other products, when risk is involved, the person holding that risk expects to receive a price premium for holding the risk. With inspection delays adding risk to imported fish products, the shipper can hold the risk and receive a higher price for the product. However, because the inspection process does not add much value to the product, it is difficult to pass higher costs on to the next buyer. So the exporter is left with the choice of holding all risks internally and remaining price competitive, or attempting to shift the costs on to another buyer and possibly no longer being price competitive.

Complete marketing margin information for mussels was not available. However, marketing margin information for clearance from point of entry to the importer/distributor is in Tables 5.20 and 5.21.

Table 5.20 Margins, by Stage, for Imported Mussels

Classification		Ratio of margin (%)
Ratio of import price		41.6
Distribution margin		58.4
Margin by stages	Import stage	23.4
	Wholesale stage	15.0
	Retail stage	20.0

Source: AFMC (1996)

Table 5.21 Analysis of Distribution Margin for Mussels (January 1994)

Classification		Amount (Won/kg)	%
Imported unit cost	C. I. F.	2,080	41.6
Importer	Tariff (20 %)	416	8.3
	Other expenses & profit	754	15.1
	Sales price	3,250	65.0
Wholesaler	Other expenses & profit	750	15.0
	Sales price	4,000	80.0
Retailer	Other expenses & profit	1,000	20.0
	Sales price	5,000	100.0

Source: AFMC (1996)

Note the import price for mussels, as a percent of the total retail price, is identical to beef. The fact that over 40% of the final retail price is composed of a landed price means that less than 60% of the consumer price is captured by marketing margins in Korea. This indicates that even with the considerable restructuring taking place in the Korean distribution system, such increased efficiencies may not lead to New Zealand mussels becoming more price competitive with domestically produced seafood because of the high landed costs of the product.

Chapter 6

The Korean Food Distribution System - Current Reforms and Future Trends

The marketing costs involved in moving a product can be the difference between a profitable and sustainable commercial relationship or one that ends quickly when sufficient profit is no longer available. The difference in marketing margins between imported products and domestically produced products constituted, in this study, between 40% and 75% of the final consumer price. This difference is certainly sufficient to make a New Zealand exporter unprofitable unless the New Zealand produced product can receive a premium price from Korean consumers.

For New Zealand products which are moved into Korea, the difference between the landed price of a product and the final retail price in Korea (the distribution margin) is normally very significant. Further, the difference between the farm level price for products produced in Korea and the retail price is much smaller than that of imported products. For example, for Korean producers of kiwifruit, the distribution margin accounts for less than 50% of the final price. For kiwifruit imported from New Zealand, the landed price is approximately 25% of the retailer price - that is if the retail price of New Zealand kiwifruit is \$1.00/kg, the landed price is only \$0.25 while the remaining \$0.75 is collected by those in the marketing chain who provide time, place or transfer utility. For domestic tomato producers, however, less than 50% of the final price is devoted to off-farm marketing. This means the domestic tomato producer can absorb a significant change in marketing margins and still be price competitive.

How best for an exporter to handle the difference between the landed price of an imported product and the farm-gate price of domestically-produced products is a very significant part of any marketing

strategy for selling New Zealand products into Korea. While both the imported and domestic product must pass through the marketing chain, an inefficient domestic marketing framework will work toward the disadvantage of smaller domestic producers more than larger importers, even though domestic producers will normally have an absolute price advantage. This means that increased efficiencies in the distribution chain will accrue most directly to the benefit of local producers. However, all involved in the marketing chain, including the consumer, will benefit from increased efficiencies.

KOREAN GOVERNMENT STRATEGY FOR DISTRIBUTION MARGINS

In recognition of the opportunity for increasing the competitiveness of domestic farmers and increasing the welfare of the consumer marketing margins have attracted attention from the Korean government. The government believes that improvements in the marketing and distribution chain will lead to reduced food prices to consumers and work to keep domestically produced products competitive with imported products as trade barriers are reduced. The adoption of this strategy reflects the recognition by the government of Korea that as international trade negotiations reduce production distorting subsidies for Korean producers, the Korean government views improved domestic marketing channels as an appropriate tool to keep Korean food production competitively priced against imports.

The Korean government, as discussed below, has turned its focus to the distribution industry as a way to reduce costs of consumer products and encourage fair competition. This governmental initiative can be divided into five categories:

1. Expansion and innovation of distribution facilities;
2. Building a large number of distribution centres;
3. Encouraging the opening of more low price stores;
4. Building additional wholesale centres;
5. Opening of additional markets to imported items in order to reduce consumer costs.

It is recognised that for the Korean government to be successful in the above categories will be neither easy nor inexpensive. In an attempt to address these challenges, the Korean government has taken several steps. These steps include streamlining of governmental approval for building new distribution centres and encouragement for the expansion of price discount centres. Further, in recognition of the role of greater competition, the Korean government has indicated it will take efforts at every step of the distribution process to encourage price competition. It is believed that such competition will promote innovation and efficiency of the entire physical distribution system.

As noted above, the Korean government is devoting considerable resources to improve the distribution system, particularly the marketing of agricultural and fishery products. The goal of the Korean government is to improve the marketing and distribution system of agricultural products. It is believed that this goal can be reached through the following:

1. Construction of local shipping facilities to increase the volume of products shipped through co-operatives thereby reducing the importance of local assembly merchants
2. Construction of public wholesale markets to meet the expected demand for greater opportunities for marketing to assure that almost every metropolitan area is serviced by public wholesale markets;
3. With agricultural co-operatives having a significant role in the construction of the markets, these co-operatives will become increasingly active in food marketing.

Kim (1996) details these major investment plans:

- (a) Improving marketing of agricultural products at the first handler level to include:
 - More active participation of producers' associations in marketing;
 - Investment on marketing infra-structure to enhance sorting, packaging, storing and joint marketing;
 - Construction of 4,000 shipping points and 160 packing houses;
 - Quality assurance programs to develop producers' own brands.
- (b) Diversify marketing channels to reduce marketing costs and provide producers with more outlets to sell agricultural products. These efforts include:
 - Construction of 34 public wholesale produce marketing centres by 1998;
 - To supplement marketing channels, 16 distribution centres will also be constructed by 2001.

CHANGING KOREAN RETAILING SECTOR

There are fundamental changes taking place in the distribution system of Korea. These changes are driven, in part, by a view that marketing margins in Korea are too large. The Korean government is planning to spend US\$12.8 billion on construction of shipping and packing facilities in producing areas and on distribution facilities in urban areas (Kim, 1995). While there are obvious indications that large retail stores are becoming more important in the food industry, today Korea remains a country with more food stores per capita than any other country in the world. For example, there is one food store per 142 persons in Korea compared to 199 in Japan and over 1,400 persons in the United States (Kim, 1996). While larger retail stores may reduce distribution costs, the reality is that a food exporter to Korea will probably have product in a large number of smaller stores, rather than a large volume in fewer stores.

Nevertheless, trends in Korea's retailing sector are noteworthy. Following the gradual reduction of government control of the retail sector over the past several years, a variety of discount stores, membership wholesale clubs, and hypermarkets have been started. The focus of these stores is

similar to other retailing stores of similar size elsewhere in the world - low prices, high volume and good quality. The growth is not limited to Seoul. The Makro Joint Venture Company opened a membership wholesale club in Incheon during January, 1996. According to Lee (1996), the number of low price stores throughout Korea, as of August 1996 were:

Discount Stores:	44
Membership Wholesale Clubs	13
Hypermarkets	2
Super Centres	2

In addition, it has been reported that over 30 conglomerates have expressed an interest in starting new stores in the near future (Lee, 1996).

However, existing department stores in Korea remain a strong retailing force showing an increase in sales of 13% from 1994 to 1995. The 132 department stores in Korea had sales of US\$162 billion in 1995. Recent trends indicate continued growth for department stores, despite the increase in competition from low price stores.

KOREAN IMPORT REGULATIONS

Korea has, over the past several years, moved steadily toward a more free and open trading system, reducing import restrictions and protection of fair trade (KOTRA, 1993). Under existing World Trade Organisation guidelines, this trend will continue. However, there remains a complex set of rules and regulations to bring food products into Korea. These rules and regulations affect marketing margins and consequently their impact on place, form and transfer utility.

The Korean Customs Act provides direction for customs systems and procedures regarding transportation facilities, bonded areas, transportation, customs clearance, etc. "The importation of goods requires a series of procedures ranging from the conclusion of a contract to import payments. Other general import procedures include the securing of import permission and customs clearance. Procedures included in the optional category depend of the type of transaction and the nature of the good to be imported" (Lee, 1996). In addition to the Korean Customs Act there are other laws related to customs formalities Quarantine Act, Agricultural Product Inspection Act and Marine Product Inspection Act. Liberalisation of the Korean import regime means that all of the above Acts, and others, are being modified or have recently been modified to become consistent with the Uruguay Round.

CONCLUSIONS

There are a large number of small shops in Korea many with limited or no refrigeration. This means that inventories of any product which requires special cooling or freezing must be kept quite small. Consequently, considerable dependence is placed on the distribution system to assure products are made available to the stores quickly and frequently. Despite the enormous dependence on the distribution system, the efficiency of the physical distribution system in Korea appears to be low. This apparent lack of efficiency in such a vital component of making products available to consumers holds great promise, then, for government reform. It is very likely that the improvements in the distribution system which the Korean government is undertaking will lead to greater system efficiencies, lower distribution costs and, in turn, lower consumer prices.

An improved distribution system will encourage continued growth in the amount of retail sales generated by modern and larger scale retail stores. This means that considerable stress may be put on the continued viability of small neighbourhood food stores. Although this competitive pressure may take a long time to have a noticeable impact on retailing in Korea, the trend is clearly being established.

The growth in the amount of food sales which will take place in new and large retail stores will probably reduce the need for large wholesale auction markets. It is believed that new marketing relationships will develop as larger retail stores capture a greater percentage of consumer sales. These developments will most likely be similar to those formed in the marketing chain, in other countries. In those countries traditional auction markets have been replaced with other non-market co-ordinating mechanisms such as contracts.

The huge amount of money spent by the Korean government is directed toward an area of the Korean economy which is in considerable need of modernisation. However, the emphasis on new and large wholesale markets is not consistent with market trends in other parts of the world. It is believed that the interests of increasing price transparency, reducing consumer food costs and increasing the competitiveness of Korean-produced food products are positive and important interests addressed by the reforms. However, market trends are away from large central markets to more direct farmer-to-retailer links, driven by the needs of large retail stores. These needs cannot be met as efficiently through wholesale markets as with other marketing structures.

Greater funding of improved infrastructure such as new cold stores, chilling facilities or other refrigeration capabilities is needed. The current distribution system was established to quickly serve many small stores which had limited storage space and often no freezers or refrigeration. Consumer food products increasingly require refrigeration. If these smaller stores are to remain competitive with new mega-stores, they must increase their refrigeration capacity. Indications are that exporters from New Zealand have been very limited in their success for some products because of the lack of refrigeration capacity in Korea.

The importance to New Zealand of the improvements in Korea's distribution system is not completely straight forward:

- a. More narrow domestic margins mean domestic products will become much more price competitive with imported products
- b. It will be difficult for New Zealand products to compete against domestic production sold through an auction market where price is the only factor involved in transferring title.
- c. Because it will be increasingly difficult for imported products to compete against domestic products based only on price, New Zealand exporters must look to establish non-market methods to sell their products. For instance, a large amount of beef is purchased directly by the hotel and restaurant trade outside of auction markets. Such a model, wherein a direct link between suppliers in New Zealand and final customers in Korea is established, will provide non-price-related opportunities for increased sales.

The impact of changes in Korea's marketing and distribution system on the ability of New Zealand products to be competitive in Korea depends on the product imported. However, the research indicates that improved distribution and marketing systems in Korea will create downward pressure on consumer food prices at the retail level.

References

- AFMC (1994), *Actual Condition of Distribution of Agricultural Products*, Agricultural and Fishery Marketing Corporation, Seoul, Republic of Korea.
- AFMC (1996), *Marketing Margins*, Agricultural and Fishery Marketing Corporation, Seoul, Republic of Korea.
- Anon (1996), *Korean Agricultural and Rural Prospects in the 21st Century: Policy Issues*, Republic of Korea (in Korean).
- Choi, J-H and Lee, K-I (1995), *Changes in Food Consumption in Korea*, R335, Korean Rural Economics Institute, Seoul, Republic of Korea (in Korean).
- Choi, J-H and Lee, K-I (1996), "Income and socio-demographic impacts on household food expenditures away from home in Korea", *Journal of Rural Development* 19(1):37-52.
- Downey, W. and Erickson, S. (1987) *Agribusiness Management*, McGraw-Hill, Inc., New York.
- Doyle, S., Bui-Lan, A., Rodriguez, A., Benard, A. and Wish-Wilson, P. (1995), "Pacific Basin beef trade: the influence of South Korea", *Australian Commodities* 2(3):326-339.
- Far Eastern Economic Review (various issues).
- Huang, J. and David, C.C. (1993), "Demand for cereal grains in Asia: the effect of urbanisation", *Agricultural Economics* 8:107-124.
- IMF (various issues), *International Financial Statistics*, Washington, DC.
- Kim, D-H. (1995), "Structure and features of food distributors in Korea", *Journal of Rural Development* 18(2):155-168.
- Kim, D-H. (1996), "Food Marketing System in Korea: A Development Perspective", presented to Asian Agricultural Economics Society Meeting, Indonesia.
- Kim, J-S. (1995), *Korean Agriculture 1995*.

- Koo, W-W, Yang, S-R and Lee, C-B. (1993), “Estimation of Demand for Meat in Korea” *Journal of Rural Development* 16: 205-222.
- Korea Customs Service (various issues), *Statistical Yearbook of Foreign Trade*, Seoul, Republic of Korea.
- KOTRA (1993), *How to Trade with Korea*, Korea Trade Promotion Corporation, Seoul, Republic of Korea.
- KREI (1993), *Effect of the Uruguay Round Agreement*, P9306, Korean Rural Economics Institute, Seoul, Republic of Korea (in Korean).
- KREI (1994), *Mid-Long Term Projections of the Agricultural Sector's General Indicators*, R314, Korean Rural Economics Institute, Seoul, Republic of Korea (in Korean).
- KREI (1995), *Food Balance Sheet, Republic of Korea*, Korean Rural Economics Institute, Seoul.
- Kwock, C-K (1996), “Republic of Korea” Ch.8 in *Changing Dietary Intake and Food Consumption*, Asian Productivity Organisation, Tokyo.
- Kwock, C-K. (1996), “The Food Industry in Korea”, in *Quality Control in Processed Foods*, Korea Food Research Institute.
- Lee, Kwang-Jong (1996), “Deciding what to import”, presented to Asia Food Marketing Institute Conference, Hong Kong, September.
- Ministry of Agriculture and Forestry (various issues), *Statistical Yearbook of Agriculture, Forestry and Fisheries*, Seoul, Republic of Korea.
- Ministry of Agriculture, Forestry and Fisheries (1996), *Korean Agriculture*, Republic of Korea.
- Ministry of Foreign Affairs and Trade (various issues), *New Zealand's External Trade Statistics*, Wellington, New Zealand.
- Naran, R. (1996), “Korean Development, Agriculture and the Dairy Sector with Specific Reference to Cheese”, BAgEcon(Hons) thesis, Massey University, New Zealand.
- National Livestock Cooperatives Federation (various issues), *Materials on Price, Supply and Demand of Livestock Products*, Seoul, Republic of Korea.
- National Statistical Office (various issues), *Annual Report on the Family Income and Expenditure Survey*, Seoul, Republic of Korea.

- National Statistical Office (various issues), *Annual Report on the Price Survey*, Seoul, Republic of Korea.
- NLCF (1991), *Beef Marketing in Korea*, The Marketing and Distribution Subcommittee Report, Joint Study Team, March (unpublished), Seoul, Republic of Korea.
- PECC (1996), *Pacific Economic Outlook*, US National Committee for Pacific Economic Cooperation, Washington, DC.
- Podbury, T., Ladlow, S., Roberts, I., Felton-Taylor, L. and Chaimun, S. (1995), "East and South East Asian dairy markets: issues and challenges" *Australian Commodities* 2(3):340-357.
- Rae, A.N. (1995), *East Asian Food Consumption Patterns: Projections for Animal Products*, Agricultural Policy Paper No.18, Centre for Applied Economics and Policy Studies, Massey University, New Zealand.
- Rae, A.N. (1997), "The effects of expenditure growth and urbanisation on food consumption East Asia: a note on animal products", (mimeograph).
- Rae, A.N. and Meister, A.D. (1995), *Environmental Constraints to Pacific Rim Agriculture*, Agricultural Policy Proceedings No.18, Centre for Applied Economics and Policy Studies, Massey University, New Zealand.
- SAMACO (1996), *Total Wholesale Market*, The Seoul Agricultural and Marine Products Wholesale Market Management Corporation, Seoul, Republic of Korea.
- Smith, P., Dennis, F. and Proctor, W. (1996) *South Korean Market for Seafood*, Research Report 96.3, Australian Bureau of Agriculture and Resource Economics, Canberra, Australia.
- UNCTAD (various issues), *Handbook of International Trade and Development Statistics*, United Nations, Geneva.
- USDA (internet), Estimates of Producer and Consumer Subsidy Equivalents, Economic Research Service, Washington, DC, www.econ.ag.gov.
- World Bank (various issues), *Trends in Developing Countries*, Washington, DC.

Also of interest

Environmental Constraints to Pacific Rim Agriculture: Further Evidence
edited by Anton D Meister and Allan N Rae

1997 Paper No. 130 pages ISSN 0111-6339

Food Consumption Patterns in Indonesian Households:
Segmenting the Market

1996 Allan N Rae
Agricultural Policy Paper No. 19
60 pages ISSN 0110-5558

East Asian Food Consumption Patterns:
Projections for Animal Products

1995 Allan N Rae
Agricultural Policy Paper No. 18
75 pages ISSN 0110-5558

Environmental Legislation in Europe
The European Union Nitrate Directive
Lessons for New Zealand

1995 Anton D Meister
Natural Resource Discussion Paper No. 18
58 pages ISSN 0110 2044

For order and other information, please write to:

Centre for Applied Economics and Policy Studies
Massey University
Palmerston North
NEW ZEALAND

September 1997

Agricultural Policy Paper No. 20
ISSN 0110-5558
Price: \$15.00

