Reviews

A Review of Recent Developments in Japanese Agriculture and Agricultural Policy

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This paper aims to review major recent developments in Japanese agriculture policy and to evaluate what these changes are likely to mean for the agricultural sector. An overview is provided of the Japanese economy, the position of agriculture in the economy and some of the important characteristics of Japanese farm households. The discussion then focuses on trade related policy developments, particularly those that have received most attention outside Japan. Recent important policy developments are then described for the rice industry, the focus of foreign criticism of Japan's agricultural policies, and the beef industry, an example of an industry to have recently lost protection against imports.

1. Introduction

According to the Japanese Economic Planning Agency (1990), at the end of the 1980s, the Japanese economy entered a new phase in its history. The Agency lists the principal characteristics of this new phase as being a "boost in sophistication of both industry and daily life" (p.2), an increase in the globalisation of the Japanese economy and an accumulation of assets.

At the end of the 1980s, Japanese agriculture also entered a new phase. The number of commodities protected against import competition by quantitative restrictions dropped substantially (included in the commodities was beef, a commodity of considerable symbolic importance to Japan and the United States (US) in their trading relations); support prices for the politically important dairy and rice industries have experienced declines; and the number of small scale farms in industries like the dairy and beef industries have fallen as farmers are increasingly pooling their resources to achieve economies of scale on cooperatively run farms or are leaving agriculture.

However, not everything has been positive. Young Japanese continue to see little future in agriculture and so the running of Japanese farms continues to be left in the hands of elderly farmers. As well, Japanese negotiators in the Uruguay Round of trade negotiations, being conducted under the auspices of the General Agreement on Tariffs and Trade (GATT), have made the familiar food security argument a central plank in their efforts to deflect international criticism of the remaining protection of Japan's agriculture. This combined with the reluctance of the European Community to give an undertaking to reform its Common Agricultural Policy had, by the latter part of 1991, not led to the much needed reform of international agricultural markets.

The purpose of this paper is to review recent major developments in Japanese agriculture policy and to evaluate what these changes are likely to mean for the agricultural sector. As this article is the first in a series of reviews designed to provide topical information on agriculture and agricultural policy in Japan, a detailed overview is provided of the more important features of the Japanese economy, comparing these developments to other major economies. Developments in the agricultural sector need to be considered in light of changes in, and against the background of, the overall economy.

Section 2 will be followed by a discussion of the position of agriculture in the economy; some of the important characteristics of Japanese farm households will also be described in this section. Trade related policy developments, those changes which

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have received most attention outside Japan, are discussed in section 4, while recent important domestic policy developments in the rice industry and in the beef industry are described in section 5. These examples are provided because rice is still the key agricultural industry in Japan and one which has become the focus of foreign criticism of Japan's agricultural policies in the Uruguay Round, while the beef industry is an example of an industry to have recently lost the protection against imports provided by quantitative restrictions.

2. Developments in the Japanese Economy

2.1 Japan's income levels

Japan's gross national product in 1989 was US $ 2889 billion, or about US$23 472 per person. Compared to other countries, Japan was second behind the US (US$5 200 billion) on the basis of gross national product but ahead of the US and other major industrialised countries on the basis of per person GNP. Compared to all OECD countries, Japan's per person GNP was higher for all years shown in Table 1, with the gap widening over time. As the data indicate, Japan's per person GNP in 1989 was more than two and one half times its level in 1979 while for all OECD countries, per person GNP in 1989 was only slightly more than two times as high as the 1979 figure.

According to the Japan International Agricultural Council, Japan's rapid economic growth since the mid-1950s has had a number of effects in the agricultural sector. First, the appreciation of the yen which has accompanied the growth in recent years has caused a widening of the gap between international prices and those in Japan and this has resulted in an increase in agricultural imports. Second, the growth of the economy has created employment opportunities outside agriculture with the result that the agricultural workforce has declined and the number of part time farm households has increased. Third, the enlargement of farm size has been hindered by the rapid increases in land prices of the late 1980s. Fourth, there has been migration of people from rural areas to urban areas, and this depopulation of rural areas has created social problems for these areas (Japan International Agricultural Council 1991).

The rapid growth of the Japanese economy has affected Japan's relations with a number of its trading partners. A country that grows more rapidly than others will, on average, export at a volume

Table 1: Gross National Product at Current Prices: Japan and Selected Countries (US$ billions)[a]

Country	1979	1984	1987	1988	1989
Japan	1012	1267	2423	2916	2890
	(8736)	(10555)	(19847)	(23786)	(23472)
USA	2508	3772	4516	4874	5200
	(11144)	(15916)	(18511)	(19787)	(20907)
Federal Republic of Germany	760	620	1114	1200	1194
	(12376)	(10136)	(18242)	(19543)	(19265)
Korea	64	87	129	173	210
	(1696)	(2152)	(3101)	(4112)	(4957)
Australia	128	176	202	257	295
	(8286)	(11286)	(12432)	(15517)	(17526)
OECD nations	5402	8207	9992	10865	11798
	(6987)	(10227)	(12188)	(13163)	(14161)

Notes: [a]Figures in parenthesis are per person GNPs in US dollars.
Source: Bank of Japan (1991)

and a growth rate that are hard for the other economies to accommodate without complaints from the domestic industries that must bear the brunt of the adjustment. According to Bhagwati (1989), Japan has been up against this phenomenon since the 1930s, but it is only in recent years that it has become an important political issue for the world economy, particularly for the US.

2.2 The Japanese trade balance

Through the 1980s, Japan's share of the world's exports ranged from 8.02 per cent in 1982 to 10.44 per cent in 1986, while its share of imports ranged from 6.11 per cent in 1986 to 7.38 per cent in 1981. Japan's exports have been dominated by machinery and transport equipment, chemicals and other industrial products, while imports have been dominated by raw materials, fuels and food and beverages.

Japan's trading position with the rest of the world has been in surplus since 1981, reaching a peak in 1986 of US$82.7 billion. Since then, the trade surplus has declined, reflecting to some degree Japanese government policy initiatives designed to expand imports. These initiatives included allowing the value of the yen to rise against the US dollar, stimulating domestic demand, the provision of concessionary loans to firms engaged in importing and the opening of some of Japan's domestic markets to foreign firms. As Table 2 shows, imports have increased since 1986 by about 86 per cent in value terms while exports have increased by about 37 per cent.

It is unclear what the future holds for Japan's trade balance, dominated as it is by Japan's trade surplus with the US. Harris (1989) focussed on the US-Japan trade imbalance and predicted that Japan's trade surplus with the US is likely to remain a feature of the international landscape for some years. Some support for this proposition comes from a recent study reported in the *Economist* (1991a) which found that Japan's merchandise trade surplus in the first half of 1991 with all countries had increased to an annual rate of US$89 billion. This reflects a slowing in import growth (caused by higher interest rates and a fall in stock market prices) and a more vigorous approach to export markets by Japanese firms.

The issue of Japan's trade balance is important because in the latter part of the 1980s and in the early 1990s, it contributed to friction between the US and Japan and provided a rallying point for

Table 2: Japan's Trade with the Rest of the World (US$ billions)

Year[a]	Exports	Imports	Balance
1970	19.3	18.9	0.4
1975	55.8	57.9	-2.1
1980	129.8	140.5	-10.7
1981	152.0	143.3	8.7
1982	138.8	131.9	6.9
1983	146.9	126.4	20.5
1984	170.1	136.5	33.6
1985	175.6	129.5	46.1
1986	209.2	126.4	82.7
1987	229.2	149.5	79.7
1988	264.9	187.4	77.6
1989	275.2	210.8	64.3
1990	286.9	234.8	52.1

Notes: [a]Data are on a calendar year basis.
Source: Japan Tariff Association (1991)

advocates of protectionism in the US Congress. It also resulted in a number of intergovernmental meetings between the two countries in an effort to bring about more balance in their trade.

This series of meetings, known as the US-Japan Structural Impediments Initiative, concluded in June 1990 with the publication of a final report, details of which can be found in JETRO (1991, pp. 70-1). During these talks, negotiators from the US and Japan focussed on the weaknesses which each side perceived to exist in the others economy, a feature which, according to Butler (1991), differentiated the talks from other international discussions. US attention was focussed on Japan's distribution system, the high rate of savings and the weakness of Japan's antimonopoly laws, all of which the US side regarded as implicit trade barriers. Details of many of these features of the Japanese economy are contained in Matsushita and Schoenbaum (1989).

Japan on the other hand was critical of the US because of its low savings rate, its education system, the low rate of research and development spending by US firms and certain features of its trade policy, particularly restrictions on exports of telecommunications technology. As a result of the talks, the Japanese government agreed to increased spending on social overhead capital, some revision to import procedures, taxation incentives for Japanese firms to encourage imports and some changes to the laws affecting the distribution system. The agreements reached in these talks amounted to "understandings" to attempt policy change rather than firm commitments. Thus far, Japan appears to have done more than the US to resolve the trade imbalance between the two countries; it has undertaken, for example, to increase public works spending over the coming decade to US$430 billion (*Economist* 1991b).

2.3 Prices

Over the last few years, the rate of increase in wholesale prices in Japan has been well below the rate of increase in Japan's major trading partners and in fact the wholesale price index in 1990 was actually below its level in 1983. The prices of raw materials and intermediate inputs both declined

Table 3: Price Indexes: Japan and Selected Countries

Country	Index	1983	1985	1989	1990
Japan	WPI[a]	100.7	100.0	93.6	95.0
	Raw materials	104.5	100.0	64.4	69.6
	Intermediate inputs	102.1	100.0	90.7	92.4
	Final goods	99.5	100.0	95.0	96.2
	Export price index (yen)	100.8	100.0	82.3	84.0
	Import price index (yen)	106.1	100.0	60.5	65.7
USA	WPI	98.2	100.0	108.8	112.7
Federal Republic of Germany	WPI	94.9	100.0	99.3	101.0
Korea	WPI	98.4	100.0	103.2	107.5
Australia	WPI	89.0	100.0	129.8	137.6
OECD	WPI	92.4	100.0	110.9	115.7

Notes: [a]WPI denotes the wholesale price index.
Source: Bank of Japan (1991)

over this period, raw materials by about 40 per cent and intermediate inputs by about 11 per cent (Table 3). As noted earlier, raw materials are a substantial part of Japan's import bill. The decline in raw material prices which has occurred since 1985 could be attributed to a large degree to the appreciation of the yen which saw the yen/US dollar exchange rate go from 254 in 1985 to 150 in 1990.

2.4 Population and labour force

Japan's population in 1990 was 123 610 000, an increase of 5.5 per cent over the 1980 population. The dependency ratio, the proportion of the population aged 65 years and older, increased from 13.5 per cent to 17.3 per cent over this same period. Even with this increase, Sterland *et al.* (1991) report that at present Japan has one of the lowest dependency ratios of any OECD country. They cite this as one possible explanation for Japan's high rate of savings since relatively poor government pension schemes in Japan have meant that there is a strong incentive for the average Japanese to save for consumption in retirement.

Japan's labour force in 1980 was 56 500 000 and in 1990 it was 63 840 000, an increase of almost 13 per cent. Unemployment between 1980 and 1990 was between 2 per cent and 2.8 per cent (Table 4). According to the Economic Planning Agency (1990), the most conspicuous new development in employment has been "the onslaught of women into the labour market. From 1980 to 1988, the number of employees increased 14.3%, but whereas male workers increased only 9.6%, female workers rose 23.3%.." (p.48). The entry of women into the labour market has had an impact on overall household income as well as on the pattern of consumption. For example, it is one of the factors which has contributed to the increase in household expenditure allocated to eating out and to prepared food.

Agriculture provides employment to a declining percentage of the workforce, with the share in 1990 being 7.3 per cent, down from its 1975 level of 10.4 per cent and its 1960 level of 30.2 per cent. Manufacturing employment has been relatively static at around 25 per cent over the last several years, while employment in the service industries has expanded from 12.9 per cent to 22.3 per cent over the period 1975 to 1990 (Table 5).

As mentioned earlier, the population of Japan in 1990 was estimated to be about 123 million living in 40 273 000 households. Of these about 60 per cent were nuclear households. One person house-

Table 4: Characteristics of the Japanese Population and Labour Force

Year	Estimated population ('000)	Dependency ratio[a] (%)	Labour force ('000)	Wages index[b]	Unemployment rate (%)
1980	117 060	13.5	56 500	69.2	2.0
1981	117 900	13.9	57 070	72.9	2.2
1982	118 730	14.2	57 740	76.1	2.4
1983	119 540	14.4	58 890	78.8	2.6
1984	120 310	14.6	59 270	82.3	2.7
1985	121 050	15.1	59 630	84.6	2.6
1986	121 670	15.4	60 200	86.9	2.8
1987	122 260	15.8	60 840	88.6	2.8
1988	122 780	16.2	61 660	91.7	2.5
1989	123 250	16.7	62 700	95.5	2.3
1990	123 610	17.3	63 840	100.0	2.1

Notes: [a]The dependency ratio is the ratio of the number of people in the population aged 65 years and over to the number aged between 15 years and 64 years.

[b]The wages index is for all regular employees aggregated for all industries.

Table 5: Employment by Industry (%)

Year	Agriculture forestry & fisheries	Manufacturing	Services	Other[a]
1960	30.2	21.3	12.9	35.6
1965	23.5	24.3	13.7	38.5
1970	17.4	27.0	14.7	40.9
1975	12.7	25.8	16.4	45.1
1980	10.4	24.7	18.1	46.8
1985	8.8	25.0	20.2	46.0
1990	7.3	24.1	22.3	46.3

Notes: [a]The other category is made up of mining; construction; electricity, gas, heat supply and water; transport and communications; wholesale and retail trade, eating and drinking places; financing and insurance, real estate; and government (not elsewhere classified).
Source: Statistics Bureau (1991) for 1985 and 1990 data, and Statistics Bureau (1986) for 1960 to 1980 data.

holds were the next most common (21 per cent), followed by three generation households (13.5 per cent) (Table 6). Average household size in 1990 was three persons. The most important development shown in Table 6 is the increase in the proportion of nuclear households. This would be expected to influence food consumption, particularly in light of the increased participation of women in the workforce mentioned earlier because the opportunity cost of time spent in preparing food in a nuclear household, where both adults work, would almost certainly be high.

3. Agriculture's Position in the Economy

3.1 Significance of the agricultural sector

Agriculture's importance in the Japanese economy has shown an unwavering downward trend over the past 35-40 years. In terms of both gross and net domestic product the decline has been steep with agriculture's contribution to GDP falling from 15.1 per cent in 1960 to 2.8 per cent in 1990. Exports too have fallen sharply in importance in recent decades

Table 6: Structure of Japanese Households

Year	Total ('000)	One person (%)	Nuclear families[a] (%)	Three generation (%)	Other (%)
1970	30297	20.26	56.73	13.32	9.70
1975	33596	19.53	59.47	13.35	7.65
1980	35824	19.83	60.28	13.90	5.99
1985	37226	18.40	61.10	15.24	5.26
1990	40273	20.97	59.98	13.48	5.57

Notes: [a]Nuclear households comprise households with a married couple only, households with a married couple and one or more children and households of one parent and one or more children.
Source: Statistics Bureau (1991)

with agricultural, forestry and fisheries products contributing 4.5 per cent of the value of Japan's total exports in 1970 but less than 1 per cent in 1990 (MAFF 1991a).

Although agricultural imports also declined in relative importance, from over 33 per cent to less than 20 per cent of total imports during the 1970-1990 period, there has been a substantial increase in the volume and value of imports. In 1960 imports were valued at US$1.7 billion and by 1989 had risen to US$29.7 billion, an 8.8 fold increase in real terms (Saeki 1991). As Saeki pointed out, this increase can be attributed to three main factors: the rise in the domestic price of agricultural products accompanying agricultural growth; border adjustments for agricultural products such as reduced tariffs and increased quotas; and the general trend of an increasing exchange rate over the 30 year period.

A further illustration of agriculture's declining importance is reflected in the falling share of food expenditure in total household expenditure. Food accounted for more than 35 per cent of total expenditures in 1960 but had fallen to less than 24 per cent by 1988 (Taniguchi 1991). As well as this relative decline of food expenditures as a proportion of total expenditures, the composition of food expenditures has also changed markedly in recent decades. In the period 1980 to 1988 the relative share of grain milling (mainly polished rice), for example, dropped from 9.5 per cent to 7.3 per cent and the share of other crops (including fruit and vegetables) fell from 8.8 to 7.7 per cent. Conversely, the shares of highly processed foods showed a general increase, with seafood products increasing from 7.5 to 8.4 per cent, beverages from 10.7 to 11.3 per cent and meat and dairy products from 11.3 to 11.6 per cent. The share of the restaurant sector also increased, from 24.0 to 28.5 per cent over the eight year period (Fujita 1991). As Fujita suggested, these changes can, by and large, be attributed to the gradual Westernisation of the Japanese diet with an accompanying shift to higher value-adding production and the trend toward more frequent eating out.

The contribution of agriculture to the economy and the community can be described in broader terms than just share of GDP, proportion of the labour force and the other standard economic indicators. Increasingly, agriculture is being recognised for "the various social benefits it contributes accruing from agricultural land use and normal agricultural production (such as conservation of the national land and natural resources, the health and rehabilitative functions offered by the abundant resources of the countryside, the educational function, etc.)" (Nagata 1991, p.189). Nagata refers to one estimate by the Ministry of Agriculture, Forestry and Fisheries which valued the social benefits of agriculture and forestry at approximately three times the gross product of the agriculture and forestry industries. Unsurprisingly, these types of estimates are often cited in support of Japan's protectionist agricultural policies.

3.2 Agricultural employment and farm household characteristics

Farm households are the key decision units in Japanese agriculture. In 1990 the average Japanese farm household had 4.25 members, of which 0.98 members worked on the family farm cultivating an average of 1.34 hectares[1]. Over the past 20 years the number of farm households has declined by almost 30 per cent from 5.4 million in 1970 to 3.8 million in 1990. These 3.8 million households support almost 16.3 million people (13.5 per cent of the population), a considerable decline from 1970 when over 25 per cent of the population were members of farm households (Table 7).

In 1950, 48.3 per cent of the total employed population was employed in primary industries (including forestry and fisheries) (Nakayasu 1991). By 1985 this had declined to 8.8 per cent and to 7.3 per cent in 1990 (Table 5). To an extent these figures are deceptively high because of the traditionally large proportion of part-time farmers in the industry. In 1960 only about 34 per cent of all farmers were full-time and by 1990 this proportion had dropped to just 15 per cent. Of the part-time farmers most were mainly engaged in off-farm employment (Table 8).

1 A farm household is a household managing ten ares (1000m²) or more of cultivated land in Eastern Japan or five ares or more of land in Western Japan. A household is also classified as a farm household if it does not meet the area criteria but has receipts from the sale of agricultural products above some benchmark. In 1985 it was Y100 000 (ABARE 1988, p.68).

Table 7: Number of Farm Households in Japan

Year	Farm Households		Farm Household Members	
	Number ('000)	Proportion of all households (%)	Number ('000)	Proportion of total population (%)
1970	5402	19.3	26595	25.6
1980	4661	12.9	21366	18.3
1990	3830	9.8	16278	13.5

Source: ABARE (1988), Nakayasu (1991)

Not only has the number of farm households declined in recent decades but so too has the area of land available for cultivation. Over the 30 years since 1960 the amount of cultivated land has decreased by 13 per cent. However, because the agricultural labour force has declined at a greater rate, it has meant that the average area cultivated per farmer has increased. For example, the number of farms larger that two hectares increased from just 3.6 per cent of all farms in 1955 to 9.3 per cent in 1990. More significantly, the proportion of cultivated land comprising farms greater than two hectares increased from 11.9 per cent in 1955 to 32.7 per cent in 1990 (Table 9).

Table 8: Proportion of Full-time and Part-time Farmers - Japan (%)

	1960	1990
Full-time Farmers	34.3	15.0
Part-time Farmers I[a]	33.6	18.2
Part-time Farmers II[b]	32.1	66.7
TOTAL	100.0	100.0

Notes: [a]Mainly engaged in agriculture.
[b]Mainly engaged in off-farm jobs.
Source: Egaitsu (1991b, p.4)

Table 9: Farm Households and Cultivated Land by Farm Size (%)

Year	Percentage of Households Farm size (ha)				Percentage of Cultivated Land Farm Size (ha)			
	<0.5	0.5 -2.0	2.0 -3.0	>3.0	<0.5	0.5 -2.0	2.0 -3.0	>3.0
1955	39.3	57.1	3.1	0.5	14.1	74.0	9.5	2.4
1975	41.4	52.1	4.9	1.6	13.6	64.2	14.3	7.8
1990	41.6	52.1	5.9	3.4	12.7	54.6	15.9	16.8

Source: MAFF (1991c)

Despite this increase in farm size over the past three decades, farm viability declined from already extremely low levels. In 1960 it was estimated that only 8.6 per cent of farm operations were viable farm units. In 1990, this proportion had declined to just 6.3 per cent of the total number of farm households. "Viable units account for a 26 per cent share of total arable land, 39 per cent of gross agricultural output and 28 per cent of agricultural fixed capital. However, in the pig raising, chicken raising, dairy farming, and cattle raising sectors, viable units account for the majority of output in their sectors. In the rice growing sector, viable units account for only 10 per cent of its gross output" (Nakayasu 1991, p.144).

The gross and net income positions of the average family farm are given in Table 10. Clearly, non-agricultural earnings form a significant part of agricultural households' disposable income. In Japanese fiscal year 1990, 65 per cent of total farm household income (net, before tax) was derived in the non-agricultural sector. A further 21 per cent came in the form of annuities, gifts, etc. An average of only 14.2 per cent of total farm household income was earned in producing agricultural commodities. This percentage is slightly lower than for fiscal year 1980 (17.4 per cent) and is extraordinarily low compared to that of, for example, Australia, which averaged 77 per cent over the three years to 1989/90 (Peterson *et al.* 1991, p.350).

Rice continues to be the most important single commodity for Japanese farm households, providing over 25 per cent of average agricultural gross income (Table 11). Vegetables and livestock and livestock products are also significant components of agricultural gross income, both contributing over 20 per cent of the total in Japanese fiscal year 1990. Compared to a decade earlier the contribution of rice to gross income has changed little, that of vegetables has increased from 16.9 per cent to 22.0 percent, and that of livestock and livestock products has fallen from 23.3 to 20.5 per cent. The possible future liberalisation of the Japanese rice market would reduce the importance of rice in rural households' gross agricultural income with a likely increase in the significance of vegetables, fruit and

Table 10: Japanese Farm Household Income and Expenditure, National Average 1980 and 1990[a] (Y'000)

	1980	1990
Agriculture		
Gross income	2350.8	3007.0
Expenditures	1414.4	1841.0
Net income	926.4	1166.2
Non-agriculture		
Gross income	3721.9	5653.3
Expenditures	252.6	303.8
Net income	3469.3	5249.5
Annuities, gifts, etc	979.7	1720.4
Total farm household Income	5385.4	8236.1
Taxes & other public charges	751.9	1389.9
Disposable income	4633.5	6846.2
Living expenditures	3891.5	5229.9
Surplus over living expenditures	742.0	1616.3

Notes: [a]Japanese fiscal years 1980 and 1990 (i.e. April 1980-March 1981 and April 1990-March 1991, respectively).
Source: MAFF (1991a)

Table 11: Japanese Farm Household Agricultural Gross Income, Commodity by Commodity National Average, 1980 and 1990

Commodity	1980 Income (Y'000)	Share (%)	1990 Income (Y'000)	Share (%)
Rice	587.8	25.0	757.4	25.2
Wheat & barley	33.9	1.4	47.3	1.6
Potatoes & sweet potatoes	33.7	1.4	42.9	1.4
Vegetables	397.4	16.9	662.8	22.0
Fruit & nuts	188.5	8.0	266.1	8.8
Industrial crops	131.1	5.6	151.4	5.0
Sericulture	44.2	1.9	15.1	0.5
Livestock & livestock products	548.3	23.3	616.6	20.5
Others	199.5	8.5	296.2	9.9
Own consumption	186.4	7.9	151.2	5.0
TOTAL	2350.8	100.0	3007.0	100.0

Source: MAFF (1991a)

nuts and some of the minor commodities such as flowers and ornamental plants.

Agricultural expenditures by rural households are detailed in Table 12. Following depreciation, feed, fertilizers and agricultural chemicals are the most important expenditure items. As these are statistics for average rural households the actual proportions

Table 12: Japanese Farm Household Expenditures, National Average, 1980 and 1990

Expenditure Item	1980 Expenditure (Y'000)	Share (%)	1990 Expenditure (Y'000)	Share (%)
Wages	22.2	1.6	38.1	2.1
Seeds, seedlings, etc.	38.0	2.7	62.1	3.4
Livestock	49.4	3.5	57.2	3.1
Fertilizers	135.4	9.5	148.4	8.1
Feed	282.8	19.9	272.1	14.8
Agricultural chemicals.	82.0	5.8	118.6	6.4
Misc. materials	84.1	5.9	105.0	5.7
Lighting, heating and power.	62.4	4.4	70.6	3.8
Charges & fees	96.9	6.8	116.4	6.3
Others	162.0	11.4	273.2	14.8
Depreciation	403.0	28.4	579.7	31.5
TOTAL	1418.2	100.0	1841.4	100.0

Source: MAFF (1991a)

Table 13: Rate of Food Self-Sufficiency in Japan (%)

	1960	1970	1980	1989
Calorie basis	79	60	53	48
Staple grains	89	74	69	68
All grains	82	46	33	30
All agricultural products	91	81	75	68

Source: MAFF (1991b)

are quite different for individual farms specialising in any particular commodity, e.g. rice, vegetable or livestock production. Nevertheless, the comparatively minor proportion of total expenditures paid to employees (2.1 per cent in 1990) does re-emphasise the part-time nature of Japanese agriculture for the majority of farm households. In the decade to 1990 there were few significant changes in the structure of expenditures reflecting an absence of any new and significant technologies and a relatively stable level of input prices (Table 12).

3.3 Agricultural self-sufficiency

The increasing volume of agricultural imports into Japan, brought about largely by high economic growth, a strengthening exchange rate, reduced availability of arable land and a gradual Westernisation of the Japanese diet, has resulted in Japan becoming the largest net importer of agricultural products in the world (MAFF 1991b). This growing dependence on imported food products is typically illustrated with various food self-sufficiency ratios. On a calorific basis, Japan's self-sufficiency ratio fell from 79 per cent in 1960 to 48 per cent in 1989 (Table 13), the lowest level among the major developed countries (Fujita 1991). While self-sufficiency in rice has been maintained at or above 100 per cent over the past three decades (Table 14), the increasing diversity in dietary patterns means rice's contribution to total calorific supply has declined. For staple grains as a whole, the self-sufficiency ratio fell from 89 per cent in 1960 to 68 per cent in 1989, while for all grains, including feed grains, the drop from 82 per cent to 30 per cent over the same period was even more dramatic. The high self-sufficiency ratio for rice, the result of Japanese government restrictions on rice imports, can be contrasted with the very low self-sufficiency rates for other grains.

As Fujita (1991) observed, advances in transportation and food preservation techniques have lessened the 'non-tradeable' attributes of many primary products resulting in a gradual reduction in self-sufficiency ratios over time. Fruits and, to a lesser extent, vegetables have benefited from such technological advances and had, in 1988, self-sufficiency ratios of 57 per cent and 91 per cent, respectively, down from 100 per cent for both commodities in 1960. The self-sufficiency ratio for eggs has remained extremely high (98 per cent in 1988) because of the importance of freshness. Similarly, milk and dairy products have maintained a relatively high self-sufficiency ratio because of freshness considerations, in addition to import restrictions imposed by the government. Easing of these restrictions in recent years has led to a slight reduction in self-sufficiency, a trend likely to continue in the future. A similar pattern can be observed for meat. Beef in particular has experienced a sharp decline in self sufficiency in recent years and is forecast to fall below 50 per cent in the near future.

4. Trade Related Policy Developments

4.1 Reduction in quotas

The GATT, of which Japan has been a member since 1955, permits the use of quotas and other quantitative restrictions on agricultural imports in

Table 14: Rate of Food Self-Sufficiency in Japan by Commodity (%)

	1960	1970	1980	1989
Rice	102	106	100	100
Wheat	39	9	10	16
Potatoes	100	100	96	93
Starch	76	41	21	15
Pulses	44	13	7	9
Vegetables	100	99	97	91
Fruits	100	84	81	67
Meat	91	89	81	72
Beef	96	90	72	54
Pork	96	98	87	77
Eggs	101	97	98	98
Milk & milk products	89	89	82	80
Fish	111	108	97	80
Seaweed	92	91	74	76
Sugar	18	22	27	35
Fats & oils	42	22	29	33

Source: Agriculture and Forestry Statistical Association (1991)

some cases, such as when government policies seek to reduce production of the commodity. According to Runge and Stanton (1988), the rules governing these exceptions are relatively clear and strict, but they have largely been ignored by countries maintaining quotas.

Under Article 52 of the Foreign Exchange and Foreign Trade Law, the Ministry of International Trade and Industry is authorised to establish a system of quotas. According to Matsushita and Schoenbaum (1989), the original purpose of the legislation was to promote exports and restrict imports, together with foreign exchange control. One salient feature of the Japanese legislation is that no procedure is provided for an individual or a private corporation to petition the government to impose a quota on imports, as is provided for in the US under the Trade Act of 1974. Imposition of a quota is therefore solely left to the discretion of the government, "and a private party who wishes to have the import quota imposed on a commodity must resort to a 'political approach' and try to persuade the relevant agencies to initiate one" (Matsushita and Schoenbaum 1989, p.74).

Japan has made use of quantitative restrictions on agricultural imports for a variety of reasons including food security, farm income support, the provision of jobs in rural areas and the maintenance of the rural environment. These quantitative restrictions, which are usually combined with domestic measures to influence prices, have been a source of foreign criticism of Japan particularly by the US but also by Australia, Canada and a number of the developing countries in Asia and South America.

A GATT Panel, set up following complaints by the US to the GATT, ruled in the early part of 1988 that Japan's use of quantitative restrictions on a number of products was a violation of the GATT's article XI, which prohibits quotas (with certain exemptions) for agricultural products on which domestic production is limited. Although Panel rulings are not binding, Japan agreed to remove quotas on eight of the commodities considered by the Panel. The products included fruit pulp, tomato ketchup and sauce, processed cheese and beef and pork products. Details of the products are in ABARE (1988).

In June 1988 Japan decided to remove quantitative restrictions on beef and orange juice by April 1991 and April 1992, respectively. These decisions mean that by April 1992, the number of product groups containing items still protected by quotas will have fallen from 22 in April 1988 to 12.

4.2 Farm prices

ABARE (1988) describes in some detail the operation of the government's support policies for a number of Japan's agricultural industries. Deficiency payments, for example, are used to support producer prices for a number of products. Producers are paid by the government the difference between the target price and the market price. In the case of soybeans and rapeseed, the deficiency payments are financed entirely from the budget, while for milk they are financed by profits from state trading in dairy products and from levies on imported beef (ABARE 1988, p. 38).

For many industries, including rice, wheat and dairy, the price support policies could not operate except in the presence of quantitative restrictions on imports. The reason for this is that without restrictions, lower priced imports would enter the Japanese market and undermine government supported prices provided to these industries.

For a number of commodities, the support prices are very high in comparison to the prices received by farmers in the US and Australia. In the 1980s, for example, farm gate prices in Japan were at least four times as high as farm gate prices for rice and wheat in the US, while milk prices were, on average, about twice as high (Egaitsu 1991a). Recently though, the Japanese government has taken the politically difficult step of reducing support prices. The argument the government has used to justify this is that such reductions are needed to force Japanese agriculture to improve its efficiency. It is also likely that the Japanese government was concerned that its negotiating position in the Uruguay Round may have been harmed if it had increased support prices while the Round was in progress. Finally, it is apparent from Table 15 that the period of most rapid price increase occurred between 1960 and 1975 when the Japanese government attempted to achieve "parity" between agricultural incomes and the rapidly increasing incomes earned by workers outside agriculture. Prices in the 1970s were also influenced by the oil price increases engineered by the OPEC countries.

4.3 Implicit trade barriers

While the removal of quantitative restrictions means that a number of explicit trade barriers have been reduced, a continuing contentious issue between Japan and some of its trading partners involves implicit trade barriers. These have been the subject of bilateral discussions between Japan and the US, such as the Market Orientated Selected Sector talks

Table 15: Average Yearly Rate of Change in Support Prices: Selected Commodities (%)

Year	Rice	Wheat	Milk[a]	Potatoes[b]	Sugar cane	CPI
1960-65	9.4	4.7	-	3.2	-	5.9
1965-70	4.8	4.8	3.3	3.7	2.3	5.5
1970-75	13.4	18.8	12.9	17.7	19.6	11.3
1975-80	2.5	5.6	2.0	-0.5	5.3	6.6
1980-85	1.1	0.7	0.2	0.5	0.6	2.8
1985-90	-2.4	-3.6	-2.8	-3.5	-0.9	1.3

Notes: [a]Manufacturing milk
[b]For starch
Source: Egaitsu (1991a)

of the mid 1980s and the Structural Impediment Initiative talks mentioned earlier. Examples of the implicit trade barriers said to exist in Japan include health and phytosanitary regulations, the inadequacy of the infrastructure for the processing of imports (in particular for high valued agricultural commodities at Tokyo's Narita airport), quality standards, laws restricting the operation of retail establishments and government procurement policies. The Japanese government has made attempts to overcome some of these barriers, and these are discussed in Government of Japan (1990) and Higashi and Lauter (1987), but there is sufficient anecdotal evidence (see, for example, Bruce 1991) to conclude that implicit barriers have made it sometimes difficult for foreign agricultural products to penetrate the Japanese market.

4.4 Arguments in support of border protection

The Japanese government has justified its protection of agriculture by arguing that such protection is necessary to ensure food security, to maintain the rural environment, to provide employment opportunities in rural areas and to provide Japanese consumers with access to safe Japanese produced food. As noted earlier, the food security argument has been an important part of Japan's defence of its rice policy during the Uruguay Round of trade negotiations. The food security argument used by Japan has been evaluated by a number of authors (for example Sanderson (1978) and ABARE (1988)), but Egaitsu (1991b) and Kada (1990) indicate that the views about the issue held by Japanese academic agricultural economists, like the views held by officials in the Ministry of Agriculture, Forestry and Fisheries, have not changed. Food security is still an important justification for Japan's rice policy.

Japanese public opinion polls on agricultural trade issues are difficult to interpret. In June 1990, Komeito, an opposition party (although often allied with the ruling Liberal Democratic Party on key issues), indicated it would consider supporting the partial liberalisation of rice. *The Wall Street Journal* (1990c) reported at the time that polls showed a majority of the public backed such a move "reversing the results of a similar survey from two years ago" (p.A8). Consumer groups and housewives' organisations have campaigned against liberalisation, despite the retail price of rice being almost twice the price in major American and European cities (Bank of Japan 1991, p.103). Their opposition is based on the view that foreign produced rice may be unsafe and also that Japan needs to maintain a policy of food security (*Wall Street Journal* 1990c).

The safety and quality of food is a major issue in Japan and it may be attributed to a number of incidents where contaminated food has resulted in deaths. The most well known incident, and one which attracted world wide attention at the time, occurred in the Minamata area of western Kyushu in the 1950s. Several hundred people died as a result of consuming mercury contaminated fish. Food security has also been given high priority by the Japanese public because of its war time and post war experiences and more recently because of the world food crisis of the early 1970s and the US suspension of grain exports as a diplomatic weapon against the USSR in 1980.

The Japanese Federation of Employers' Organisation, Keidandren, has been critical of Japan's agricultural policies. In 1990, the federation released a report which argued that the lifting of restrictions on agricultural imports, the lowering of petrol taxes and reducing wholesalers' mark-ups would lower food prices by 17.5 per cent. Keidandren also considered the effect of removing all government restrictions on imports of agricultural products. The report predicted food prices would fall by 11 to 12 per cent, lowering consumer prices overall by 2 per cent (*Wall Street Journal* 1990a). Keidandren has also called on the Japanese government to ease restrictions on rice imports to help ensure the success of the Uruguay Round of trade negotiations (*Wall Street Journal* 1990b).

5. The Impact of Trade Liberalisation on the Beef and Rice Industries

5.1 Beef liberalisation and Australia

As indicated in Table 14 above, Japanese dependence on imported beef has been increasing rapidly in recent years, and the 384 000 tonnes of beef

imported in the 1990 fiscal year accounted for 50.2 per cent of total demand[2] over that 12 month period. Although Australia and the US have held over 90 per cent of the import market share during the last two decades, Australia's share has fallen at the expense of the US. Australia's share fell from 87 per cent (by weight) in 1970 to under 52 per cent in 1990, while the US share increased from only 2 per cent to almost 43 per cent during the same period.

The dramatic growth in Japan's current account surplus with the US during the 1980s led to the intensification of pressure from the US on Japan to open its doors to foreign goods. Pressure from the US concerning beef imports has been applied in various forums of negotiation since the mid 1970s and met with significant success in 1978 when the high quality beef (HQB) quota was put into effect. Although this quota (which had to be grain fed beef) was a portion of the total quota and was officially "global" (that is, not country specific), Longworth (1983), George (1984) and others have argued that the US has a significant advantage over other suppliers in this grade of beef. As a result, as the HQB portion of the total quota has steadily increased over the past decade, the US has significantly increased its share of the Japanese market at the expense of the traditional suppliers of grass-fed beef, in particular Australia (Morison 1991).

In response to these changing market conditions production of grain fed beef in Australia has accelerated in recent years, as too has Japanese investment, particularly since the Japanese government's announcement to liberalise the beef market. There were 72 feedlots with a turn off of over 1000 cattle per year in 1990 (ALFA 1990). In 1989 10 per cent of industry capacity was wholly or partially owned by Japanese interests with many feedlots holding plans for substantial expansion of existing capacity (Young and Sheales 1991). Grain fed beef, however, still accounts for less than 10 per cent of total slaughterings in Australia mainly because of Australian consumers' preference for grass fed beef and the limited access exporters have to other markets where the grain fed product is popular. In addition to the feedlot sector, Japanese firms have also made substantial investments in the Australian slaughtering and processing sectors since the beef market liberalisation decision in 1988. While only about 14 per cent of export slaughtering capacity is owned or part owned by Japanese interests, AMLIPC (1989) estimated that in 1989 23 per cent of beef exported to Japan came from these Japanese owned abattoirs. These abattoirs comprise 15 of the 77 licensed export abattoirs in Australia (Young and Sheales 1991).

The liberalisation of the beef market has meant, among other things, that restrictions on which firms are allowed to engage in trade and on the type, quantity and price of product traded have been lifted. As noted above, this has already had important implications for the way in which firms traditionally operating in the Japanese beef trade are operating now and how they will operate in the future. This changing environment has allowed them to become directly involved in the production and processing of imported beef "in order to better control the quality and characteristics of the product" (Young and Sheales 1991, p.69), and this type of involvement, particularly direct investment, is likely to influence, to a certain extent at least, the level of individual country's market share.

Nevertheless, it is still too early to tell how the major exporting countries' market shares will change as a result of liberalisation. In the eight months after the April 1 1991 liberalisation, Australia's share had increased to 53.5 per cent, up from 51.7 per cent over the previous 12 months. The US share was 43.6 per cent in the same eight month period, up from 42.8 per cent, while New Zealand, the other supplier of any consequence, experienced a fall in market share from 3.5 per cent to 1.5 per cent over the same period (LIPC 1992).

5.2 The Japanese domestic beef sector and beef market liberalisation

In the Japanese beef industry there are several types of farms involved in the production process. Within the Wagyu (Japanese native cattle) sector, there are three segments: breeding farms, fattening farms and breeding and fattening (integrated) farms. Although breeding farms are the largest in number,

2 Stocks increased by around 6 000t during fiscal year 1990, a large proportion of which was imported beef. Consequently, actual consumption of imported beef accounted for just under 50 per cent of total consumption.

they are the smallest in terms of average herd size. Those that had less than four cattle accounted for 84 per cent of the total number of breeding farms in 1988. These farms kept 51 per cent of the total number of Wagyu cows (MAFF 1991d).

There are also three segments within the dairy beef sector of the industry. The first type of farm raises dairy breed calves which are a by-product of dairy farming. These calves are sold at around 7-8 months as feeder cattle for finishing in feedlots. The dairy steer feedlots, the second type of dairy sector farm, have developed as major suppliers of beef in Japan. The third type of farm, the integrated calf rearing and fattening operation, has developed rapidly in recent years and in 1986 about 5 per cent of dairy farms raising dairy cattle were of this type (Arai 1989).

Despite increasing levels of imported beef the importance of dairy cattle as a source of beef has increased rapidly since the 1970s. By 1989, dairy beef accounted for two-thirds of Japan's total beef production compared to less than one-third in 1970. Nevertheless, Wagyu beef is still regarded as higher quality beef because of its marbling and tenderness attributes and it is traded at far higher prices than dairy beef. For example, the average wholesale price of Wagyu beef at the Tokyo market on the 21st of October 1991 was 1799 yen per kilogram (carcass weight) at grade B-3, while the equivalent price of dairy steer was 1030 yen at the same grade. At A-4 and A-5 grades, into which over 50 per cent of Wagyu beef was classified, the prices were 2343 yen and 2717 yen respectively.

It is clearly in the dairy beef sector where domestic producers are finding competition from imported beef the toughest, particularly those producing 2nd and 3rd grade dairy steers (Takahashi 1990). This is reflected in the trend for many dairy steer fatteners to move into Wagyu or F1 cross steer fattening enterprises, and the corresponding slump in dairy steer calf prices and the fall in dairy steer prices at the farm gate (and wholesale) level. The average dairy steer price in the April-September 1991 period was down 13.5 per cent over the same period in the previous year. In comparison, the Wagyu steer average price was holding just above the previous year's level (LIPC 1992, p.18).

Ironically, the impact of the newly opened market was first felt in the import sector itself. The companies dealing in imported beef have been forced to reduce prices and incur trading losses due to the pressure of surplus stocks *(Nikkei Shinbun* 1991). The volume of beef under the expanded quota arrangement more than met real demand in the market with a resultant increase in stocks. However, with decreasing import beef prices, prices of beef from dairy culled cows and dairy steers have also gradually decreased. On the other hand, Wagyu beef prices have shown an increasing trend because of the strong demand for better quality beef among consumers. This is partly due to the general upward trend of the economy in Japan.

As mentioned earlier, dairy feeder calf prices have fallen. While Wagyu calf prices sky-rocketed, dairy bobby calf prices almost halved from the peak of 130 000 yen per head in March 1990 to 60 910 yen in August 1991. Revenue from selling cattle, e.g. dairy bobby calves and culled cows, contributed approximately 20 per cent of total gross revenue of dairy farms in 1990. Consequently, the price collapse of dairy cattle together with depressed milk prices will substantially lower dairy farm income levels in 1991.

Calf prices, other than black Wagyu, are also sharply declining, while black Wagyu calf prices have maintained a relatively high level. The Price Stabilisation Fund (described in the following section) started to make up the price differences for beef breed calves other than black and brown Wagyu in September 1990 and dairy breed calves in April 1991. The average market prices calculated by the Fund, which were below the basic support price and the rationalised target price (also described in the following section), are shown below in Table 16.

5.3 Beef liberalisation and the political response

In addition to the beef import quota being lifted in April 1991, the LIPC (Livestock Industry Promotion Corporation, the semi-governmental organisation which controlled about 80 per cent of total beef imports before the liberalisation occurred) levy was also removed and the 25 per cent *ad valorem*

Table 16: Average Market Prices for Calves Calculated for the Price Stabilisation Fund: Non-Wagyu Breeds (Yen per head)

	1990 Oct-Dec.	1991 Jan-Mar.	1991 April-June
Other beef breed	181000	172900	162000
Dairy breed			147900

tariff was raised to 70 per cent. This will be reduced to 60 per cent in Japanese fiscal year 1992 and to 50 per cent in 1993. From April 1994, the tariff level will be adjusted to be consistent with the results of the negotiations in the Uruguay Round.

One of the major political responses to ameliorate the impact of beef liberalisation on domestic beef producers was to re-establish the Beef Calf Price Stabilisation Fund in 1990. The Fund, established voluntarily at a prefectural level by agricultural cooperatives in the 1960s, was set in law in 1983. This Fund was established to overcome financial difficulties experienced by beef cattle farmers caused by widely fluctuating prices. Under this system farmers can be expected to be paid if calf prices decline below a certain level. To receive this benefit, producers are required to enter into a contract with a prefectural Price Stabilisation Fund and pay a producers' levy before the calf is two months old. Provided these conditions are met, the central government contributes to the Fund twice the amount of the producers' levy and the prefectural government contributes the same amount as the producers.

There are two major differences between the new and old systems. Firstly, beside the basic support price, the government sets a rationalised target price, an import parity price adjusted for quality differences. Secondly, the government directly subsidises the Fund using the beef import tariff. When average calf prices fall below the basic support price, producers are paid the difference between the average price and the basic support price. Payment is made not from the Price Stabilisation Fund but from a separate government fund which in turn is funded from the beef import tariff. The government justifies directly subsidising the Price Stabilisation Fund, arguing that falling prices down to the level of the rationalised target price can be regarded as the direct result of beef liberalisation. If market prices continually decline below the rationalised target price, the Price Stabilisation Fund is used to make up 90 per cent of the price difference between the average price and the rationalised target price (Table 17). The basic support price is set annually while the rationalised target price is revised every five years by the central government for the different beef breeding groups, such as the black and brown wagyu and dairy calves. This, however, is only the general rule and in practice can work quite differently. For example, the rationalised target price was reduced from 142 000 yen to 140 000 yen for dairy calves in 1991 as the price of imported beef (calculated as a three month average) declined.

5.4 Rice cropping sector under deregulation

Rice cropping has traditionally been the most important sector in Japanese agriculture and its liberalisation is a continuing and controversial issue at the GATT Uruguay Round. Although the sector has been long regarded as one of the most highly protected among Japan's agricultural industries, it has been subjected to an ongoing process of deregulation over the past two decades. For example, the setting of retail prices was liberalised as long ago as 1972 (ABARE 1988). Further, the buying price for government marketed rice (*i.e.* that bought directly from producers by the government) has been declining since 1987 and, also since 1987, the difference between the selling (retail) and buying (farm gate) prices has been positive (George 1988). A further example of industry deregulation is the voluntary marketed rice system, a program outside the control of the government. The program was

Table 17: Calves Price Stabilisation Fund (1990-91) (yen per head)

	Black & Brown Wagyu Calves	Other Beef Breeds' Calves	Dairy Calves (beef)
Support basic price	304 000	214 000	164 000
Rationalised target price	267 000	188 000	140 000
Levy per head	9 900	7 000	5 300
Levy by producers	2 475	1 750	1 325

established in 1969, and in 1990 accounted for nearly 50 per cent of total rice production, while the share of government marketed rice had fallen to less than 20 per cent (Table 18).

In 1987, a category of "special rice" was approved. Producers and consumers are able to trade this rice directly without any government intervention. Although the traded volume amounted to only 6306 tonnes in 1990, consumer groups value the system highly as it enables them to obtain some particular types of rice, such as organic rice, directly from producers.

In 1990, the Voluntary Marketed Rice Price Formation Organisation was established in order to introduce a tendering system as a part of the voluntary marketed rice system. The participants in the system are limited to the second level rice collectors such as the prefectual agricultural cooperatives and the National Federation of Agricultural Cooperatives, known as Zen-Noh. The participants are required to register annually. The tenders are held in Tokyo and Osaka, four times in each location per year and the price variation at each tender is limited to plus or minus 5 per cent of the corresponding average price of the previous tender. There is also a limitation on the annual price variation.

From October 1990 to May 1991 eight tenders were held in Tokyo and Osaka. As a result, 508 000 tonnes and 32 brands of rice were traded and five of the 32 brands in the Tokyo market hit the upper annual limitation for price variation. Due to the success of the system, the tenders are to be held five times in each market in the 1991 rice year.

Since the introduction of the rice tendering system, competition among rice producing areas has become more intense. An ongoing process of deregulation of the domestic market, in ways similar to this, will enhance the competitiveness of the do-

Table 18: Categories of Marketed Rice in Japan, 1970-1990 ('000 tonnes)

Year	Government Marketed Rice	Voluntary Marketed Rice	Other	Total Rice Production
1970	6775	1692	4222	12689
1975	6385	2993	3787	13165
1980	3668	2865	3218	9751
1985	4328	3582	3457	11367
1990	1766	4569	3679	10014

Source: MAFF (1991)

mestic industry, focus producers' efforts on consumers' needs and, in so doing, ensure the industry's survival in the face of possible future competition from imported rice.

6. Conclusions

The current implementation of agricultural policy reform in Japan is having a tremendous impact on Japanese agriculture. The easing of restrictive border measures has opened the market in many agricultural sectors to free competition between imported and domestic products. If the rate of reform continues and if the various price support and other protective measures are abolished, it is certain that the level of food self-sufficiency in Japan will continue to decline. This decline will, however, be tempered to a certain extent by the opportunities available to farmers remaining in agriculture to increase their scale of operation and improve their production efficiency.

Whether the reform process will extend in a substantial way to the rice sector is yet to be seen, although pressure both domestic, especially from business circles, and external, particularly from the US, is continually being exerted. As George (1990, p.133) put it "the 1990 election victory [for the ruling Liberal Democratic Party] has placed the party in a strong position to weather the storm of rice liberalisation. It is not required to face another Lower House election until 1994 or an Upper House election until 1992. A shift in LDP domestic rice marketing policy is already taking place".

In addition to active agents working for agricultural policy reform, there are more benign factors which could facilitate substantial change in agricultural structure, contribute in a "natural" way to the declining level of food self-sufficiency and thereby force further reform in agricultural policy. These factors include the aging of the farm population, the general lack of appeal of agriculture to young Japanese caused largely by the greater income earning opportunities off-farm and the gradual change of the Japanese diet.

The agricultural policy reforms implemented by the Japanese government in recent times will provide considerable benefits to Japanese consumers in the form of cheaper and a more diverse selection of agricultural products, as well as benefits to exporting countries in the form of greater access to the Japanese market. Further, the shift from quota based protection to tariffs, such as for oranges and beef, increases the transparency of these policies.

Even in the face of complete liberalisation, however, it is unlikely that the Japanese agricultural sector will cease to exist, as there are many industries which can continue to be competitive with imported products. These are likely to be industries with large capital requirements relative to land usage, industries that utilise a high level of technology and produce high valued products that are relatively income elastic. Additionally, the production of perishables, such as fresh fruit and vegetables, will continue to have a high level of natural protection given the high cost of shipping. Further, the exacting requirements of Japanese consumers, in terms of high and consistent quality products, free of additives, hormones and other chemicals, should give the better attuned and more persuasive domestic producers a comparative advantage over imported products.

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