Explanatory note

The present note has been prepared by the secretariat in accordance with Article IV:1 of the Arrangement and Rule 29 of the Rules of Procedure, and with the aim of facilitating the work of the Council and the Committees at their meetings in March 1991.

In preparing the note, the secretariat based itself mainly on replies to questionnaires, other information submitted by participants and observers as well as various information arising from the operation of the Protocol Regarding Certain Milk Powders, the Protocol Regarding Milk Fat and the Protocol Regarding Certain Cheeses. Furthermore, the secretariat used supplementary information available to it from various national and international sources, notably documentation from the FAO, the IDF, the UN/Economic Commission for Europe, the OECD, the Commission of the European Communities, Agriculture Canada and the United States Department of Agriculture.

The note provides information on production, consumption, trade, stocks, and prices for milk and principal dairy products and covers developments in dairy policies up to 1990, and the outlook for 1991. The note should be read in conjunction with the statistical information circulated in the following documents:

DPC/W/104 - Milk Deliveries and Production - Statistical Note by the Secretariat

DPC/PTL/W/37 - Committee of the Protocol Regarding Milk Fat - Summary Tables

DPC/PTL/W/38 - Committee of the Protocol Regarding Certain Cheeses - Summary Tables

DPC/PTL/W/39 - Committee of the Protocol Regarding Certain Milk Powders - Summary Tables
Delegations wishing to suggest modifications, corrections, or to provide additional information are invited to make relevant submissions to the secretariat, preferably in writing as soon as possible. Such submissions might cover both the present note, and the statistical information mentioned above. It should be noted that the drafting of the present note was completed on 15 February 1991.

TABLE 1

Levels of Minimum Export Prices

(US$/metric ton f.o.b.)

<table>
<thead>
<tr>
<th>Pilot products</th>
<th>Effective since</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skimmed milk powder</td>
<td>425</td>
</tr>
<tr>
<td>Whole milk powder</td>
<td>725</td>
</tr>
<tr>
<td>Buttermilk powder</td>
<td>425</td>
</tr>
<tr>
<td>Anhydrous milk fat</td>
<td>1,100</td>
</tr>
<tr>
<td>Butter</td>
<td>925</td>
</tr>
<tr>
<td>Certain cheeses</td>
<td>800</td>
</tr>
</tbody>
</table>

The minimum export prices are fixed for pilot products defined in the Arrangement taking account, in particular, of the current market situation, dairy prices in producing participants, the need to ensure equitable prices to consumers, and the desirability of maintaining a minimum return to the most efficient producers in order to ensure stability of supply over the longer term. New minimum prices for all pilot products became effective on 20 September 1989 and have since then remained unchanged. Minimum export prices must not be considered as market prices, but merely the floor price levels which the participants have agreed to observe.
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Overview of the Situation

Some points regarding the economic situation in general

1. The value of world merchandise trade in 1990 increased by 13 per cent to a new record level of US$3.5 trillion, boosted by the inflationary "valuation effects" of the dollar's depreciation last year against major European currencies. The volume growth of world merchandise trade slowed from 7 per cent to just under 6 per cent.

2. The slowdown in the volume growth of world merchandise exports in 1990 was the result of a fairly generalized deceleration in the export and import volume growth of the major regional markets of North America and Western Europe. Export volume growth also fell in Latin America and the Middle East. The recovery of export volumes continued in Asia in 1990, while countries in Central and Eastern Europe, and the USSR continued to suffer export volume declines as intra-regional trade shrank. While data is scarce for Africa, indicators point to a recovery in export volume growth, although the figure remains well below the world average.

3. Developing countries as a whole maintained their share in world merchandise exports in 1990, with sharply higher earnings for exporters of fuels and a recovery in export volume growth among the group's leading exporters of manufactures. Lower growth in export volumes for OPEC countries - demand for crude petroleum and related products declined in major export markets - was more than offset by the 25 per cent increase in fuels prices in 1990, boosted by uncertainties concerning future supplies from the Gulf region in the wake of the crisis that erupted 2 August. In contrast, countries where exports are largely concentrated in non-fuel primary commodities - food, raw materials, ores and minerals, non-ferrous metals - generally recorded lower rates of growth than other developing economies due to depressed demand and lower prices for most products.

4. The rate of growth of world GDP slipped from 3.5 per cent to just under 3 per cent, indicating a continuation of the slowdown that began in 1989. The Gulf crisis appears to have had a slight negative impact on the world economy in 1990, and it was felt primarily through a higher degree of consumer and business uncertainty concerning the future. However, the underlying inflation rate in OECD countries rose again in 1990 to just under 5 per cent. Unemployment rates began to rise in a number of OECD countries, particularly in the second half of the year, as economic activity slackened. On balance, the world economy in 1990 entered a period of slower economic growth which is expected to persist in 1991.
World dairy situation

Highlights

5. - World milk production increased by 1 per cent from 1989 to 1990, as the downward trend was halted in the European Communities and output increased in the USSR, the United States and India. The outlook for 1991 was a slight growth in world milk production.

- In 1990 the balanced market situation for dairy products came to an end, with a rebuilding of stocks and strong downward pressure on prices notably for butter and skimmed milk powder.

- World butter production grew in 1990 at a rate of 1.4 per cent amounting to 7.70 million tons and was projected to remain at that level in 1991. A vigorous demand for light products in many countries entailed a substantial surplus of milk fat which together with a continued low butter consumption in many countries resulted in increased exportable availabilities. In particular, higher retail prices in Eastern Europe entailed a strong decline in domestic butter demand. Additional quantities of butter were offered on international markets in 1990/91, resulting in pressure on market prices and in increased need for intervention purchases.

- Cheese production grew by another 2 per cent in 1990, and the trend was likely to continue in 1991. Increased growth in cheese consumption in 1990 led to a lively import demand and further expansion in cheese trade.

- Throughout 1990, prices for dairy products remained under pressure in international markets and some offers and sales of butter and skimmed milk powder were reportedly made at prices below the agreed minimum export prices. Depressed market prices for butter also adversely affected sales and prices of other dairy products, notably powders, as sales of dairy products are often linked or handled by the same operators. However, at the end of 1990 the market situation for milk powders and cheese improved and prices firmed while the situation for milk fats remained under pressure.

- Concerns were expressed at the unsatisfactory situation dominated by a fragile butter market. Participants were urged to ensure full observance of the minimum export prices. An appeal was also made to non-participants not to offer or sell dairy products at prices below prevailing market prices and in any case not below the agreed minimum export prices. Minimum export prices have been maintained unchanged since September 1989.
- In light of developments in the international butter market and in particular the situation with respect to imports into the USSR, the Committee of the Protocol Regarding Milk Fat decided in December 1990, that some provisions of the Arrangement should not apply to butter exports to the USSR, provided certain conditions were complied with.

**Dairy policies**

6. Various measures related to milk prices remained important elements in dairy policies in 1990 and 1991. Further efforts were made to contain public expenditure on dairy price support. Support prices, target prices and advance payments were maintained at the previous level or even lowered. Quota systems were made effective through the application of two-price systems, penalty payments on production in excess of quotas and levies on production collected to provide funds for market intervention and to cover losses on exports of surpluses.

7. Efforts were also continued in many countries to encourage or facilitate structural changes and raise the productivity in the dairy industry. While in some countries the aim was to raise productivity and efficiency in the industry, in others it could be to preserve the current structure, for instance by restricting herd size and thereby facilitating a limitation of total milk deliveries or otherwise adapt the capacity to the market. However, the number of dairy farms and cows continued to decline in many countries.

8. In line with the general aim of improving nutritional standards and diversifying agriculture, high priority continued to be given to production, marketing and consumption of milk and dairy products in agricultural and development plans of developing countries. Imports of high yielding breeding stock during recent years and the introduction of better feeding practices have resulted in increasing milk production in many developing countries. As an example, India has plans to double its milk output by the year 2000, to a level of 80 million tons.

9. Further efforts were made to encourage improvements in product quality and to adapt the product range to prevalent trends in demand and consumption. Efforts to prevent contamination accidents of any kind have been stepped up to keep dairy products safe for human consumption.

10. Political developments in Central and Eastern Europe had a strong impact on the dairy market. Changes in economic policies resulted in higher retail prices adversely affecting domestic demand. Export_availabilities of dairy products increased substantially, notably for butter. Persisting balance-of-payments problems led to exports at reduced prices and to new markets in search of convertible currencies.

11. Developments in the Near East, notably the embargo on trade with Iraq and Kuwait, were adversely affecting dairy trade in 1990/91. The situation was further aggravated by transportation difficulties and increased costs. These markets took some 50 thousand tons of powders, 20 thousand tons of
cheese and 10 thousand tons of butter and anhydrous milk fat in recent years. However, at the same time, increased purchasing power in other OPEC countries following increased petrol prices may have stimulated import demand of dairy products by some countries.

12. Concerns persisted that a currently receding consumption notably of butter, and an expansion of production, might result in greater supplies available for exports. Views have been expressed that the milk production potential in the medium term could be much greater than what projections and forecasts might have indicated. The danger was obviously persisting that supplies were again about to increase faster than a relatively steady but nevertheless limited growth existing for import demand and consumption, and it would remain imperative that production should not be unnecessarily stimulated through support and protection. Concerns have also been expressed that quota systems had not always discouraged over-quota production.

13. Production could rise strongly due to genetic improvements, ample feed supplies and technological progress, not least due to extended application of hormones. The authorization to commercialize hormones was still pending in major dairying countries. A strong consumers' opposition to their use indicated a possible adverse reaction on demand following extended use of hormones to dairy cows.

14. The steadily growing demand for certain dairy products, notably cheese and dairy proteins, and the increase in their prices have also entailed an upsurge in output and sales of a wide variety of dairy imitations and substitutes. These developments have caused, or threatened to cause, certain problems to fair marketing of traditional dairy products and to the protection of consumers' interests. Imitations are often to a variable degree containing milk components such as casein, whey and skimmed milk powder, extensively used as ingredients in a variety of food products. Furthermore, the modern dairy tree has a number of branches and new products. In a number of milk products such as the range of light products, milk components, mostly fat, may frequently have been replaced by something else, notably ingredients of vegetable origin. Consequently it is difficult to draw a line between what should be designated as a milk product and a non-milk product.

Milk and dairy production

15. In 1990, world milk production amounted to 537 million tons (including sheep, goat and buffalo milk), 1 per cent up on 1989 due to improved dairy practices, ample feed supplies, genetic developments and remunerative prices. Community milk deliveries showed a marginal increase of 0.2 per cent in 1990. Milk production showed only marginal changes in other European countries and in countries in Africa and Latin-America. Milk production increased also in Oceania. In the United States growth rates increased significantly in 1990 as feed costs decreased while strong domestic demand for cheese and milk proteins resulted in relatively high returns to producers. Output continued to expand in the USSR and India.
In the USSR, there was a further increase of 1 per cent in milk production in 1990. In India, milk production was estimated to have increased by as much as 7 per cent in 1990, and there was substantial increases in some other Asian developing countries.

16. For 1991, a slower growth in milk production was expected. In Oceania, assuming normal weather conditions, milk production would probably increase slightly. A relative stability in production was forecast in the Community and other European countries as well as in Africa and Latin America. United States output was expected to experience a further significant growth while USSR production might drop due to decreasing cow numbers. Efforts were being made in many developing countries to increase milk production, but gains were partly offset by adverse effects of tight feed supplies and higher feed costs. The increase in output would mainly come from India and several other developing countries in Asia in 1991.

17. Considerable uncertainty was attached to medium-term. Bovine somatotropin may already be commercially available in several countries and its application might together with scientific progress, improved breeding and production management, boost productivity in milk production over the next five-year period.

18. World butter and butter oil production increased by 1.4 per cent in 1990 amounting to 7.70 million tons. Butter production expanded in the Community, the USSR and Oceania. This was, however, partly offset by a decrease in butter production in North America and a relative stability in the Nordic countries. World butter production in 1991 was forecast to remain relatively stable despite the continued shift in consumption towards light dairy products. Further developments in production and sales of light products resulted in increased supplies of butter becoming available for export, a tendency notably apparent in Europe and North America.

19. World cheese production continued its upward trend in 1990, totalling 14.72 million tons (all kinds of cheese). The trend was very similar in all regions, but with variations from one country to another. In most countries cheese production was encouraged by a generally favourable market outlook for cheese, and the expansion continued in 1991.

20. After having declined for three consecutive years, world skimmed milk powder production increased in 1990 by 5 per cent to 4 million tons in relation to 1989, with a further recovery in Western Europe and Oceania offsetting declines in North America. However, world production in 1991 was forecast to show little change from the 1990 levels. World production of whole milk powder might have continued to decrease in 1990 at about the same rate as in the previous year, i.e. by 1.5 per cent, a recovery in New Zealand output offsetting strong declines in Community and Australian production.

21. Environmental regulations preventing whey to be disposed of as waste and increased supplies of cheese stimulated production of whey powder notably in the European Communities, Australia, Canada and the United States.
22. World production of condensed and evaporated milk declined in recent years, being increasingly replaced by whole milk powder in the market. For 1990, declines were reported for the European Communities while production recovered in North America and Australia.

23. World casein production reached a level of 214 thousand tons in 1990, 5 per cent down on 1989. This decline was mainly due to a reduction in Community output which continued to fall in 1990. In spite of high prices obtained for casein, it seemed to be more profitable to produce skimmed milk powder. There were also uncertainties as to the future of the casein market. Steps taken in the Community late in 1990 to stimulate casein production might result in increased supplies in 1991.

**Consumption**

24. World consumption of milk and fresh milk products, which had increased at an annual rate of about 1 per cent over recent years, showed a stronger increase of 1.5 to 2 per cent in 1989 and 1990. There was a lively demand for low-fat milk products in most regions of the world. For a number of countries, consumption of fresh milk followed variations in supplies of milk.

25. Throughout the 1980's, butter consumption showed very little change on average, and world per capita consumption of butter remained at a level of 2.8 kgs. The trend remained unaffected by an increasing substitution of blended spreads of butter and vegetable oil. However, in 1990, world consumption declined by 2 per cent, with sharper decreases registered in particular regions. However, consumption in the United States, the USSR and India was reportedly up on 1989. The trend toward blended spreads and low fat spreads had accelerated in 1989 and 1990. This development resulted from a combination of factors such as changes in consumer preferences toward products with less or no fat and cholesterol and changes in legislation permitting the sale of blended products to consumers. In the short and medium term it was likely that this trend would continue or even accelerate. In 1990, increased retail prices in Central and Eastern European countries affected adversely the consumption of butter, which in some cases fell to only one half of its previous level.

26. The upward trend in cheese consumption continued in 1990, with further advances in most countries. However, in general, increases for speciality cheeses were significantly above the rate of growth for traditional cheeses. The great variety of cheese available, further active product development (i.e. low fat cheeses) and brand advertising were the main reasons for these positive developments in cheese consumption. World per capita cheese consumption has been increasing at an average annual rate of 2 per cent since the early eighties, and might continue to increase at that rate in the near future. Per capita cheese consumption showed great variation from one country to another, it being particularly high in some countries of Western Europe and in North America, which also showed the strongest annual increase in consumption. At close to 14 kgs., per capita consumption of cheese in the United States in 1990 was about 30 per cent higher than in the early 1980's. Average consumption per head in the
Community, though rising more slowly than in the United States, reached nearly 15 kgs. in 1990. The general upward trend would be maintained in 1991 although the growth rate might fall slightly.

27. World consumption of skimmed milk powder fell in 1989, reflecting the tighter supply situation for milk powder. However, it remained stable in 1990 and this stability was likely to be maintained in 1991. Consumption of whole milk powder decreased in 1989 and this downward trend continued in 1990.

28. In the medium term, world butter consumption might decrease further as the trend towards a diet with less fat will persist and remain irreversible. It is notably the consumption in households that would decline, while industrial use of butter could be stimulated through various actions. The comparatively strong rate of growth in cheese consumption was expected to continue at a rate in excess of population growth, with the strongest growth found for low fat cheeses. Both for cheese and fermented milks and products such as yogurt and fresh and frozen desserts, an increase in consumption in a range of 2 to 3 per cent could be expected. Also demand for fresh liquid milk could increase at rates between 1 and 2 per cent a year and a range of new dairy products could be introduced. Health concerns and concerns related to intake, or avoidance of fat and cholesterol, would remain important factors for future demand of dairy products.

Trade

29. After having reached the record level of 1 million tons in 1988, world exports of butter declined in 1989 to some 800 thousand tons. However, all sales were normal commercial transactions in 1989, while in 1988, a large part of exports had consisted of deliveries under derogations. From late 1989 on, import demand weakened, reflecting a continued decline in milk fat consumption in many countries. As a result of a further deterioration of the market for butter, world exports in 1990 decreased to some 700 thousand tons. Taking into account the emergency situation in the USSR with an urgent requirement for imports of food, including butter, on special terms, a derogation for sales of butter to the USSR was granted in December 1990. Sales contracts concluded by several participants under this derogation amounting to some 311 thousand tons could make total USSR imports of butter in 1991 close to the levels of 1988 and 1989 possible.

30. Cheese trade expanded further in 1990, world exports reaching 887 thousand tons. This was due to higher imports into the European Community and the United States and stronger import demand by OPEC countries and other developing countries such as Brazil, which more than outweighed a certain stagnation in imports into Japan. The general expansionary tendencies continued in 1991.

31. There was a further decline of 5 per cent in world exports of skimmed milk powder in 1990, when they amounted to 900 thousand tons. Sharp decreases registered by the European Communities and the United States were not offset by increases in New Zealand and Australian
exports. However, import demand in some developing countries such as Mexico and Brazil remained strong.

32. The upward trend in whole milk powder exports was halted in 1989, when world exports decreased to 880 thousand tons. In 1990, exports decreased again to some 800 thousand tons. The European Communities covered more than 60 per cent of the world market and New Zealand some 15 per cent. Other major suppliers to the world market were Australia, Argentina and to a lesser extent Finland and Austria.

33. The international whey powder market continued to be supply-driven in 1990. Although demand was stimulated by reduced skimmed milk powder supplies, feed compounders were not able to absorb the greater supplies of whey. World trade of condensed milk continued to decline in 1990. World exports of casein recovered in 1990, notably as imports into the United States recovered to around 95 thousand tons.

Food aid

34. Reduced supplies and declining surplus stocks adversely affected the amount of dairy products available for donations under food-aid programmes. The volume of dairy products provided as food aid, notably by the European Communities and the United States (the major donators) was further reduced in 1989 and 1990. Food-aid shipments of dairy products, which had averaged nearly 400 thousand tons (product weight) in the early eighties, were estimated to have fallen below 100 thousand tons in 1989 and 1990. The increase in prices would at the same time aggravate expenses and make the financing of food aid in dairy products more difficult. Moreover, probably because of the reduced needs of India and China, dairy food aid to developing countries remained at a low level in 1990. In this context, views have been expressed that it might be appropriate to get away from the idea of surplus stocks being acceptable sources for food aid, and that more realistic international dairy prices might provide an incentive to expand production in developing countries.

Stocks

35. Butter stocks in the European Communities, North America and Oceania on 1 January 1990, at 383 thousand tons were 8 per cent lower than their level of one year earlier, and skimmed milk powder stocks, were at the same time, very low at 164 thousand tons. While there had been some rebuilding of butter stocks in 1989, stocks of skimmed milk powder had remained low. In any case, public intervention stocks remained low, except for some accumulation of CCC butter stocks in the United States. Community intervention stocks of butter started to build up in 1990 as a result of strongly reduced domestic demand and inability of Community exporters to compete in international markets. Aggregate butter stocks in the European Communities, North America and Oceania on 1 January 1991, estimated at 643 thousand tons, were 68 per cent higher than a year earlier. On the same date, skimmed milk powder stocks at 460 thousand tons, had almost trebled in relation to their level on 1 January 1990, mainly due to the increase in Community and United States stocks. Concerns were expressed that stocks of both products would be increasing as a result of the fall in
demand. However, it was expected that the sales of butter to the USSR under the derogation adopted in December 1990, would significantly alleviate the situation.

International prices

36. Reduced supplies and lower carry-over stocks resulted in continued improvement in prices for milk fats in the first nine months of 1989, but prices began to weaken towards the end of the year, ranging between US$1,650 and US$2,000 per ton f.o.b. for butter and between US$2,050 and US$2,200 per ton f.o.b. for anhydrous milk fat.

37. Butter prices in international markets continued to weaken in 1990 and certain offers and sales had reportedly been made at prices below the minimum prices. During the fourth quarter of 1990, prices were in the range of US$1,350 to US$1,500 per ton f.o.b. for butter and US$1,625 to US$1,880 per ton f.o.b. for anhydrous milk fat; only little trade was effected at these prices. At meetings of the Protocol Committees in 1990, participants reaffirmed their determination to defend the existing level of minimum export prices and to abide by their obligations under the Protocols. Participants were urged to take the necessary steps to ensure full observance of all the provisions of the International Dairy Arrangement, notably those related to the minimum export prices. An appeal was also made to non-participants not to offer or sell dairy products at prices below prevailing market prices and in particular not below the agreed minimum export prices. At the annual review of the level of the minimum prices in September 1990, the minimum export prices of butter and butter oil were maintained at their present levels and participants were again urged to respect them. In December 1990, a derogation was granted permitting sales of butter to the USSR at prices below the minimum export price, upon certain conditions. Sales under that derogation might help to stabilize the world butter market and prices could improve during 1991.

38. Cheese prices which had remained fairly high in 1989 eased in the first nine months of 1990, ranging between US$1,500 and US$1,950 per ton f.o.b. in the third quarter. At the September 1990 review, the minimum export price was maintained unchanged. Prices firmed slightly in the fourth quarter of 1990 and fluctuated between US$1,550 and US$2,000 per ton f.o.b. Prices were expected to continue to further firm up in the coming months.

39. Powder prices weakened slightly in the fourth quarter of 1989, ranging between US$1,700 and US$1,900 per ton f.o.b. for skimmed milk powder and between US$1,750 and US$1,950 per ton f.o.b. for whole milk powder. Prices of milk powders fell further in the first three quarters of 1990, as international demand weakened and as additional supplies became available from some Eastern European countries at very low prices. Consequently, in the third quarter of 1990, prices of skimmed milk powder decreased to US$1,300-US$1,450 per ton f.o.b. and those of whole milk powder to US$1,250-US$1,400 per ton f.o.b. Some milk powder had reportedly been offered and traded at prices below the minimum export price. At the September 1990 review, the minimum export prices of milk powders covered by the Protocols were maintained unchanged. The market situation for milk
powders improved in the fourth quarter of 1990 and prices firmed. In the fourth quarter, prices of skimmed milk powder were between US$1,300 and US$1,540 per ton f.o.b., and those of whole milk powder in the range of US$1,350 to US$1,475 per ton f.o.b. Prices continued to improve early in 1991.

40. Prices for condensed milk were raised in early 1989 and again in 1990, but remained stable throughout that year. A persisting tight supply situation for casein entailed a continuous price hike throughout 1988, with prices around US$5,600 per ton in December 1988, almost twice the price recorded one year earlier. Quotations remained at that level in the first half of 1989. However, prices of casein for technical use and of edible casein eased from the end of 1989 and were in December 1990 down to US$3,900 per ton, probably because of users' reaction to high prices. Whey prices were under pressure of affluent supplies in mid-1989, amounting to half their levels in 1988 but they recovered towards the end of 1989. However, they declined again in the first nine months of 1990 both in Europe and in the United States. Towards the end of 1990, the decline continued in the United States but a recovery was registered in Europe.

41. The market outlook for 1991 indicated that the prices for some dairy products notably cheeses and milk powders might remain at current levels or even increase somewhat. However, some uncertainty persisted as to the situation for butter and anhydrous milk fat despite the sales of butter to the USSR under derogation which might alleviate the situation allowing a certain recovery in prices in 1991.

42. The Arrangement has been in operation for nearly twelve years and is considered to be a valuable means of imposing a concerted measure of discipline on export price fixing thus effectively limiting the application of export subsidies, contributing to the maintenance of a certain stability of markets and returns and alleviating adverse effects of temporary difficulties in the market. During the period, market prices have gone through various phases. At the beginning of the 1980's the world dairy market was in reasonable balance. From 1982 followed a period with increased world milk production not being accompanied by increased demand and the accumulation of surplus stocks notably of butter and skimmed milk powder, which remained high and continued to have a depressive impact on the prices of all dairy products more or less until 1986-87. Thereafter a general recovery came about, first for powders and cheese and later for butter and anhydrous milk fat. The prices for powder and cheese reached new record levels in 1988, while those for butter and anhydrous milk fat although improving appreciably, did not reach their levels of the early 1980's. Early in 1990, prices weakened in the case of milk fats and to some extent also for powders and cheeses. However, late in 1990 and early in 1991, the market situation for milk powders improved and prices firmed. The cheese market was characterized by balanced supplies and slightly firming prices. As to the market situation for milk fats, prices continued to weaken, following a continued decline in butter consumption in many countries and generally increasing production. Recent steps agreed upon under the Arrangement might hopefully help to restore the balance in the butter market.
43. Milk proteins have few substitutes and are still, even at the higher price level, in a strong competitive position price-wise, compared to, for instance, vegetable proteins. That is not the situation for milk fat, which is facing a stiff competition from vegetable fat. Furthermore, demand for fats in general is being contained through prevailing dietary philosophy and advice which on the other side favour demand for milk protein illustrated by recent developments in powder prices, with skimmed milk powder for recombination catching a premium compared to whole milk powder. Developments in market prices, and changes in the agreed minimum export prices, clearly illustrate the difference in market trends for various milk components.

DAIRY PRICE INDICES *
(Basis: 1st quarter 1981=100)

INDEX

* Upper level of price range.
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<td>Anhydrous milk fat</td>
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<td>1,900-2,300</td>
<td>2,050-2,500</td>
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<td>Butter</td>
<td>1,100-1,880</td>
<td>1,750-2,000</td>
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<td>Cheddar cheese</td>
<td>1,400-2,400</td>
<td>1,900-2,400</td>
<td>1,900-2,300</td>
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**In 1990, certain sales of skimmed milk powder for animal feed were made at lower prices than the ranges indicated, by derogation under Article 3:5 of the Protocol Regarding Certain Milk Powders.**

**In 1988, a substantial quantity of old butter and anhydrous milk fat was sold at prices lower than the ranges indicated, by derogation under Article 7:1 of the Protocol Regarding Milk Fat.**

**Up to the end of 1988 and in early 1990, some sales of cheese below normal export quality were made at lower prices than the ranges indicated according to Article 7:2 of the Protocol Regarding Certain Cheeses.**
44. World milk production (including buffalo, sheep and goat milk) at 537 million tons in 1990 showed an increase of 1 per cent over the previous year. In most Western European countries and Canada, production remained subject to quotas. Among the four biggest producers, which together accounted for two thirds of the world total, the downward trend was halted in the European Communities, while production increased to record levels in the United States, the USSR and India. Production rose also in Oceania. Milk output decreased in Eastern Europe as a result of insufficient feed supplies and general economic difficulties.

45. For 1991, a slower growth in production was expected from an estimated 537 million tons in 1990 to 538 million tons, i.e. an increase by only 0.2 per cent. This increase in output would mainly come in Asia, thanks to rapid expansion in India and several other countries of South and East Asia. Community production might remain relatively stable. Production could stagnate in other West European countries, Africa and Latin America. United States output was expected to experience further significant growth. While the USSR, where cow numbers have decreased in recent years, might not be able to raise productivity levels at the pace of past few years, recovery of output in East Europe would presumably occur only in the longer run. In Oceania, milk output would probably increase modestly if not decline following persisted drought in New Zealand early in 1991.

46. Milk deliveries in the European Communities, reached 98.80 million tons in 1990, 0.2 per cent more than in the previous year. Cow numbers fell by 1.9 per cent but productivity per cow increased by 1.6 per cent in 1990. For 1991, milk deliveries were expected to increase by 0.1 per cent to 98.90 million tons. In the medium term, milk deliveries were expected to stabilize. Cow numbers would continue to fall, not least in light of measures implemented to encourage some farmers to give up milk production. Yields were expected to increase by 1.8 per cent a year, and might, together with improved feeding techniques, tend to increase production. Following German unification, total Community milk delivery forecasts would have to be revised upwards by around 6 per cent.

47. The Community quota system has been prolonged until March 1992. The limitations to the intervention system for butter and skimmed milk powder have been extended for the same period. The suspension of 5.5 per cent of reference quantities shall remain in place, with compensations to be paid to producers. In order to accommodate the needs of the so-called "SLOM" producers, allocations of 502,000 tons out of a total of 600,000 tons that were eligible for re-assignment were granted.

48. In December 1989, the Community quota reserve was increased for the 1989/90 dairy year by a little more than 1 million tons to be allocated by member States to "priority" cases in each country. Certain measures were adopted to counteract the effects of increase in quota reserve such as a
2.5 per cent cut in the intervention price for butter, a 0.75 per cent cut in the intervention price for skimmed milk powder as of 1 March 1990 and an increase in the amount of the super levy from 100 per cent to 115 per cent of the target price as from 1 April 1990. It was also decided to suspend permanently 1 per cent of the 5.5 per cent of quota which had been temporarily suspended. The amount of the compensation paid to producers per percentage point suspended would be adjusted upwards allowing the net amount of compensation to remain unchanged.

49. For the 1990/91 dairy year, the target price for milk was set at ECU 26.81/100 kgs., 3.7 per cent less than in 1989/90. The co-responsibility levy remained unchanged at 1.5 per cent of the target price. Under the quota buy-out scheme, quotas would be redistributed to small producers in all areas, instead of just to the less-favoured and mountain areas. A date would be set for completing arrangements for the temporary leasing of milk quotas, as part of the general review of the quota system. According to a Eurostat study on the effect of the quota, the financial situation of the dairy sector had improved considerably since the introduction of milk quotas in April 1984.

50. In Finland, milk deliveries in 1990 at around 2.66 million tons were 1.7 per cent higher than in 1989, due mainly to higher yields per cow as a result of an exceptionally good harvest year. In 1991, milk deliveries were expected to decrease by 11 per cent because of the measures taken to reduce production under the milk bonus scheme. The Milk Quota Act had been revised, with the result that the penalties for exceeding quotas had been reduced and the share of free quotas had been increased. Current legislation had with some amendments been extended until the end of 1990, and the two-price system was continued.

51. In Norway, total milk deliveries decreased by 4 per cent to 1.90 million tons in 1990. Reductions in milk quotas and a tightening of the two-price system were expected to squeeze supplies so that milk deliveries in 1991 would be reduced by a further 4 per cent.

52. Milk deliveries in Sweden at 3.42 million tons in 1989, were reckoned to have increased to 3.49 million tons or by 2 per cent in 1990. The two-price scheme, introduced on a three-year trial basis for the period July 1985 to June 1988, was intended to discourage surplus production. Its effects in practice had, however, been stronger than was initially expected. Thus, milk production had decreased, reducing costs of surplus disposal and producers were paid a higher price for their milk. The scheme was abolished on 1 July 1989 and subsequently milk deliveries increased. They were, however, expected to stabilize at a level of 3.45 million tons thereafter. A new food policy based on the principle that agriculture should be subject to the same conditions as other sectors had been laid down in June 1990. The Parliament agreed that consumer subsidies for milk and dairy products will end as of 1 January 1991. In case of dairy producers, there will be a transitional period of five years during which time internal price controls (including export subsidies) will be abolished. In addition, the internal controls include a profitability equalization scheme designed to eliminate differences in the profitability
of different products. Complete abolition of the equalization scheme as from 1 July 1995 would mean that prices would be set in relation to production costs.

53. In Switzerland, milk deliveries in 1989 at 3.07 million tons were 2.5 per cent up on the previous year. In the first ten months of 1990, however, deliveries were down by 3.1 per cent compared to 1989. For the milk year running from 1 November 1989 to 31 October 1990, deliveries totalled 2.99 million tons compared to 3.05 million tons in 1989/90, a decline of 2.22 per cent. Dairy cow numbers were expected to decline in the coming years while yields would increase further. Premiums were paid for non-marketing of milk and for processing of milk into cheese which had a relatively higher price in domestic and international markets. The basic price of milk was increased as from 1 February 1990 by 5 centimes to SwF 1.07. Domestic prices of cheese were consequently raised but prices of table butter remained unchanged and prices of cooking butter were reduced. Import charges for cheese remained unchanged.

54. In New Zealand, climatic variations continued to have a major impact on milk production. In the 1989/90 season, production totalled 329 million kgs. of milk fat, or 7 million tons of milk. This was 5.8 per cent higher than in 1988/89 but 6 per cent lower than the peak year 1985/86 and close to the average level of production in the past five years. Good pasture conditions were expected to result in an increase of 3 to 5 per cent in milk production in the 1990/91 season. For the medium term, it was forecast that cow numbers would remain steady, yields per cow would stabilize at 3,400 kgs. per year and milk production would remain stable averaging 7.5 million tons a year. The New Zealand Dairy Board's price for manufacturing milk produced during the 1989/90 season was finalized at NZ$5.80 per kg. milk fat. In light of the market situation, the advanced price for milk for the 1990/91 season was reduced to NZ$4.00 per kg. milk fat and then to NZ$3.60 as of 3 November 1990. Producer prices for milk continued to be determined directly by export market realizations.

55. The level of milk production in New Zealand was determined by the export performance of the dairy industry relative to other alternative uses of the land, with short-term variations resulting from changing climatic conditions. Although there were no subsidies or other regulations which could be manipulated to control production, a number of steps had been taken to influence it by special measures, such as a "butter realization differential" scheme introduced in 1987/88, which was later provided for on a continuing basis. Under this scheme, payments to dairy companies by the New Zealand Dairy Board for export butter and butter oil beyond a base production level would be made on the basis of marginal rather than average market realizations.

56. In Australia, milk production in 1989/90 was down marginally by 0.4 per cent to 6.45 million tons. It was expected to remain at about the current level for 1990/91. Dairy cow numbers were expected to continue to decline, but production per cow was projected to increase through genetic and management improvements. The dairy policy introduced for 1986/87 aimed at the development of a more efficient market-oriented dairy industry responsive to market conditions.
57. **Japanese** milk production in 1990 at 8.22 million tons was 2 per cent higher than in 1989. The increase was mainly due to a further improvement in yields, while dairy cow numbers continued to fall. The forecast for 1991 was that output would be at least 1 per cent higher than in 1989 in spite of a decline in cow numbers. However, the demand for drinking milk was also increasing at almost the same rate. The general balance between supply and demand for dairy products was being maintained by the LIPC mainly through substantial imports of all additional domestic requirements. The guaranteed price for milk for manufacturing had been reduced from 79.77 to 77.75 yen per kg. for the 1990/91 fiscal year, because of lower feed prices and better calf prices. The quantity of raw milk to which the guaranteed price was applied had been increased by 50 thousand tons to 2.35 million tons for fiscal year 1991.

58. In **South Africa**, improved climatic conditions led to a recovery in milk output which increased by 4.7 per cent in 1989 to 1.89 million tons, in spite of an 11.3 per cent decrease in dairy cow numbers. Production for 1990 increased further to 1.96 million tons due to improved yields.

59. In **Argentina**, milk deliveries in 1989 at 7.01 million tons were 8 per cent higher than in 1988. However, a decline of between 7 and 8 per cent was estimated for 1990. Various issues related to the overall quality of raw milk, such as composition, microbial count and other sanitary aspects were under consideration, and work was going on with the aim of establishing a new basis for payments of the milk delivered to dairies. In **Uruguay**, milk deliveries continued to increase in 1989 at the rate of 5.2 per cent, reaching a level of 642 thousand tons, entailing a further significant increase in the output of dairy products. For 1990, a further increase of 5 per cent was estimated. Uruguay had in recent years been the largest net exporter of dairy products among the developing countries. It sold mainly milk powders to other Latin American countries where improved prices and market conditions provided a boost to exports. Thus, in 1989, exports of dairy products were estimated to have increased by as much as 50 per cent in volume and by almost 75 per cent in value due mainly to the improved situation in the international dairy market. Exports of Argentina also increased in 1989 when they doubled in volume in relation to 1988 with a record value close to US$146 million. Exports of both Argentina and Uruguay had reportedly decreased sharply in 1990.

60. In **Egypt**, certain changes had been made to the import regime of certain dairy products. Total production of milk (including buffalo milk) in 1989 at 2.44 million tons was 1.7 per cent higher than in 1988. Efforts were being made to develop and increase dairy production. The target for milk production in year 2000 was 4 million tons, and the aim was to achieve full self-sufficiency of liquid milk and fresh milk products. Efforts were being made to reach the objectives through increased traditional production of feed, genetic improvement and improvement of cattle health and fertility. Attempts were also made to establish a sound processing, storage and marketing system.

61. In **Bulgaria**, total production of milk in 1989 fell by 2.5 per cent to a level of 2.49 million tons due to a slight drop both in cow numbers and productivity per cow. The unfavourable general economic situation was
likely to have an influence on the developments in the dairy sector and a further drop in milk production was anticipated for 1990. In 1991 however, higher purchase prices and encouragement of private farms were expected to increase milk deliveries for the production of cheese, powder and fermented products by as much as 10 to 15 per cent. Hungarian production of milk increased in 1989 by 1.5 per cent to reach a level of 2.86 million tons due to growing yields having more than offset a drop in cow numbers. At the end of September 1990, cow numbers were 1.6 per cent lower than a year earlier. Production of milk in 1990 remained, however, relatively stable around the level of 1989, due to increased yields. The Hungarian dairy sector went through a lot of difficulties during 1990. The summer drought drove up feed prices, but the substantial fall in domestic demand caused most difficulties. In 1990, as part of the market-oriented policies, the previously large-scale consumer subsidies were phased out which resulted in major price increases for dairy products and in a substantial decrease in domestic consumption. In Romania, production of milk in 1989 remained relatively stable at 4.53 million tons, and for 1990 little or no change was estimated.

62. In Poland, output of milk and dairy products in 1989 exceeded the level of the previous year, mainly because of favourable climatic conditions throughout the winter and the spring. Milk production recovered and increased by as much as 4 per cent to around 16.22 million tons in 1989. A system of market-oriented prices was introduced on 1 August 1989 and subsidies to the dairy industry were abolished. A new law was passed on 7 February 1990, according to which all central unions of co-operatives had been dissolved and the Central Union of Dairy Co-operatives was liquidated. The deregulation of prices after forty years of State control had resulted in a substantial rise in retail prices which affected adversely the consumption of dairy products. In the second half of 1990, the situation was characterized by a significant decline of the order of 13 to 15 per cent, in output and purchases of milk. This was due to the normal seasonal decline of autumn and winter and a decrease in the profitability of milk production as a result of the abolition of all subsidies. Poland, which had exported butter in 1990, would have to import certain quantities of butter in early 1991, following these developments.

63. In Yugoslavia, milk production decreased by 2 per cent to 4.50 million tons in 1990, due principally to decreasing cow numbers, yields having remained relatively stable.

64. Milk production in Czechoslovakia has remained around 7 million tons in recent years, with an average yield per cow of 3,710 kgs. Consumption of milk and dairy products in terms of milk equivalent has averaged 250 kgs. per head. However, increases in retail prices adversely affected the consumption notably of butter and increased quantities became available for export. Production has been restricted by poor animal health and inadequate food supplies, and may increase significantly if these problems are solved.
TABLE 3

Some Data Related to (a) Cows' Milk Production or (b) Deliveries for Selected Countries or Regions

<table>
<thead>
<tr>
<th></th>
<th>Milk Production/ Deliveries (million tons)</th>
<th>Percentage change from previous year</th>
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<tr>
<td></td>
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<tr>
<td>EC-12</td>
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<tr>
<td>Preliminary 1989</td>
<td>(b) 98.65</td>
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<td></td>
<td>(b) 98.90</td>
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<td>+ 1.2</td>
</tr>
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<td></td>
<td>(a) 108.00</td>
<td>- 1.1</td>
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<tr>
<td></td>
<td>(a) 68.40</td>
<td>+ 1.5</td>
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</tr>
<tr>
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<td>(a) 15.41</td>
<td>- 5.0</td>
</tr>
<tr>
<td></td>
<td>(a) 14.64</td>
<td>- 5.0</td>
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</tr>
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<td>+ 0.3</td>
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65. In the USSR, milk production was 108.1 million tons in 1989, or 1.2 per cent higher than in 1988. The increase was less than in recent years due to inadequate feed supplies. In 1990, production increased by another 1 per cent to 109.18 million tons. This modest increase was partly due to precarious feed production which was considerably lower than a year earlier. For 1991, a decrease by about 1 per cent was forecast due to lower cow numbers and slower growth in productivity. However, dairy products continued to be rationed, as domestic supplies were insufficient to meet demand. Considerable imports of dairy products were made also in 1989. However, imports of dairy products declined both in 1989 and in 1990 while more vegetable fats were imported.

66. In the United States, milk production in 1989 was down by 0.6 per cent to 65.43 million tons. Cow numbers were continuing to fall, although the decline was slowing down. At the same time, however, dairy farmers increased the use of feed concentrates following a 5 per cent price decline in such feeds. Milk production increased by 3 per cent in 1990 to 67.39 million tons as a result of higher milk prices and falling feed costs. The sustained period of favourable returns to milk production might entail increases in milk cow numbers and expansion in production by early 1991. However, these developments would collide with the effects of sharply lower milk prices. Thus, sizable early-1991 production increases were expected to be eroded as the year progressed. For all of 1991, milk output was projected to increase by 1 to 2 per cent. Commercial consumption of dairy products remained stable in 1989 but increased by as much as 3 per cent in 1990. Extraordinary cheese demand, lower milk fat prices and fairly heavy use of skimmed milk powder helped to boost commercial consumption in 1990. Shifts in consumption from higher-fat products toward lower-fat products persisted entailing an increased surplus of butter available for export. Lower dairy prices should aid commercial disappearance which was expected to increase by 1 to 3 per cent in 1991. The Commodity Credit Corporation (CCC) effected significant purchases of butter and skimmed milk powder in 1990. In 1991, the CCC was projected to buy more skimmed milk powder and cheese, but less butter.

67. The support price for manufacturing milk was lowered by 50 cents to US$10.10 per cwt. as of 1 January 1990. The support price for skimmed milk powder was kept unchanged while that for butter was cut by 9 per cent. Without altering the manufacturing milk price, the support price of butter was reduced by another 10 per cent in April 1990, offset by an 8 per cent rise in that for skimmed milk powder. The reduction in milk support price was not passed on equally to support prices for butter and skimmed milk powder, taking account of the different trends in demand for these products. The US Farm Bill 1985 expired in 1990. The Food, Agriculture, Conservation and Trade Act of 1990 ensures that the support price will not decline from the current level. The minimum support price will stay at US$10.10 per cwt. through 1995. This is the strongest guarantee against support price declines given to dairy farmers since the early eighties. However, assessments will be collected slightly lowering effective milk prices.
68. Canadian milk production in 1989 at 8.05 million tons was 4.4 per cent down on the level of the previous year. Production was estimated to show little change in 1990 as the reduction in cow numbers would be offset by increased productivity. Effective 1 August 1990, the target return for industrial milk was raised to Can$48.69 per hectolitre, an increase of 2.6 per cent. The support price for butter was at the same time raised by 3.2 per cent to Can$5.331 per kg. and that of skimmed milk powder by 2.8 per cent to Can$3.130 per kg. Effective in the 1990/91 dairy year, the Market Sharing Quota (MSQ) was reduced by 3 per cent. This was the second reduction in MSQ to take place in 1990. This 3 per cent cut in quota was necessary because of a decrease in the estimated domestic requirements of industrial milk which was due to a reduction in domestic requirements for butterfat and increased low-fat fluid milk sales. A further cut in the MSQ was possible during the current dairy year due to declining butter consumption in domestic market and increased "skim-off" of butterfat from fluid milk and cheese markets. A task force with representatives from the Federal Government, farmers, the dairy industry and consumers will identify options for the next long-term dairy policy commencing in 1991, and otherwise provide guidance and advice to the Government.

69. In Israel, milk production had increased continuously over a number of years and showed an increase of 6.3 per cent from 1987 to 1988, to reach a total of 964 thousand tons. Faced with a sharp decline in domestic demand for all dairy products except fresh cheeses, the Milk Marketing Board took steps to cut milk production quotas and in 1989 production declined to 952 thousand tons. Subsidies were cut and retail prices increased by 9 per cent in real terms. Furthermore, the Milk Marketing Board encouraged the exports of dairy cows, aiming at a reduction of the dairy herd by 5 to 7 per cent. In 1989, Israel had an average yield of 8,550 kgs. per cow, the highest in the world.

70. Milk production in individual developing countries generally remained at low levels due to technical and economic factors. However, the overall output of developing countries increased by 2 per cent to 151 million tons in 1990 and the degree of self-sufficiency was expected to increase in the next few years. Several importing developing countries had embarked on very ambitious development programmes.

71. The largest producer in the developing regions, India, experienced further rapid expansion of its dairy industry as a combined result of favourable weather, strong consumer demand and conducive government policies. During the seventh five-year plan period, which ended in 1989/90, total milk production grew by almost 30 per cent to 51.5 million tons, while milk procurement under the "Operation Flood" project doubled and the number of farmers covered by the project more than doubled to about 8 million. However, the growth in demand slowed and stocks of dairy products increased. In this situation, food-aid shipments of skimmed milk powder and butter oil by which the Community supported dairy development in India, were temporarily halted, with India requesting assistance in the form of capital rather than commodities. Moreover, in the fall of 1990, India reportedly had some 30 thousand tons of skimmed milk powder and 5 thousand tons of butter oil available for export. Milk output was
projected to rise by about 20 per cent to 61 million tons by 1995. Per caput consumption could be increasing from its present level of 58 kgs. per year to about 68 kgs., and should together with a population growth of 2.2 per cent result in a total consumption equal to production. However, as milk production was concentrated in Western parts of the country, some of the increased production could be offered for exports to the Middle East, rather than sold in Eastern parts of India.

72. China's production of milk increased throughout the 1980's, as a result of increased cow numbers and more emphasis in national plans on the nutritional value of milk consumption. There was a sharp increase in 1988 by 10 per cent to 6.5 million tons, but the growth was slowed down in 1989 due to rising fodder costs discouraging farmers from raising dairy cows and goats. While total milk production increased by 4 per cent to 6.75 million tons in 1989, milk deliveries to dairies for processing decreased slightly. Following rapid expansion during most of the 1980's, the Chinese dairy industry had recently been adversely affected by weaker demand and feed shortages. Moreover, profits to milk producers and processors had been squeezed by inadequate adjustment of retail prices to costs. As a result of these developments, China which was like India, traditionally among the main recipients of food aid in dairy products, had recently also offered some milk products in international markets. Original plans which indicated a target of 30 million tons by the year 2000, were revised downwards as feed supply was lagging behind the requirements of the livestock sector and fodder prices were increasing. Even so, by the beginning of the next century, China might establish itself as the second largest milk producer in developing regions.

73. Milk production continued to expand rapidly in the Republic of Korea in 1989, amounting to 1.5 million tons. Nearly three quarters of the supply was consumed as fresh liquid milk or products. Dairy imports grew further in 1989 and were expected to increase in the future. All dairy imports were subject to quota and importers had to obtain permits from the Korean Dairy Association. In 1989, a slowdown in economic growth and particularly a sharp increase in producer and consumer prices for milk reversed the upward trend in demand for liquid milk and fresh dairy products, leading to increased manufacture of milk powder and accumulation of stocks. However, when economic growth accelerated again, milk production and consumption reached a new record level in 1990.

74. Strong efforts to step up milk production were also being made in several countries of South-East Asia, with a view to substituting imports and stimulating rural development. Thailand, one of the biggest importers of dairy products in Asia, had in recent years expanded milk production significantly. In Indonesia also, milk production showed a rapid increase, but from a very low base. In Africa, on the other hand, Kenya, Zimbabwe and Madagascar benefited from good weather and obtained significant increases in 1990.

75. In a few Latin American countries, the dairy industry continued to be stimulated by economic growth and rising demand. Mexico's milk production continued to rise sharply, up an estimated 4 per cent for 1990 to
9.3 million tons. The sharp increases in milk output since 1985 were to some extent attributed to imports of high yielding breeding stock during the past few years. A further increase by 7 per cent was projected for 1991. Mexico was in the process of adjusting its programme designed to increase domestic milk production with the objective of establishing self-sufficiency and to ultimately reducing or eliminating the imports of milk powder. Milk production in Brazil recovered in 1989 to its 1987 level and increased by 6 per cent in 1990 to 14.2 million tons. A further increase of 6 per cent was projected for 1991. Favourable milk prices in Chile stimulated further increase in production in 1990 when production increased to 1.42 million tons. Production was projected to increase by as much as 10 per cent in 1991.

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Cuba's dairy industry which depended heavily on imported milk powder and butterfat for recombining encountered increasing difficulties owing to economic adjustment and reorientation of trade with its traditional trading partners. Following stagnation during most of the 1980's, Cuban milk production decreased by about 10 per cent in 1990 to 1 million tons.

Consumption

76. World consumption of liquid milk over the last ten years increased at an average annual rate of 1 per cent. In per capita terms, the consumption of milk remained rather stable at nearly 46 kgs. throughout this period. In 1990, worldwide fluid per capita milk consumption was expected to have reached the 1984 record level of 47.2 kgs. For obvious reasons, glaring variations existed between countries and regions in the per capita intake of milk. On one end of the spectrum were developed countries, with 160 kgs. of liquid milk consumption; but the intake was as low as 2.5 kgs. in certain developing countries. However, while consumption levels were gradually increasing in developing countries with growing urbanization and population/income increase, milk intake was getting saturated in some developed countries either on health grounds or due to the availability of a wide variety of substitute drinks and milk imitations, of low caloric content, at moderate prices. Consumers were showing preference for semi-skimmed types of milk, so-called 'light' products. The switch from whole milk to partially skimmed milk continued in 1990, with sharp increases in consumption of the latter registered in many countries in Europe and in North America. In some Central and Eastern European countries, where per capita consumption had been comparatively high, strong increases in retail prices had adverse effects on the consumption of milk and fresh milk products.

77. The principal area of growth in consumption was Asia, both developed and developing countries where rising incomes and changing food consumption habits had provided a strong boost to demand for milk and dairy products. In Asia, many countries were subsidizing campaigns to promote milk consumption and had introduced a school milk subsidy. As a result, per capita milk consumption had steadily increased, principally in Japan, the Republic of Korea, Thailand, Indonesia, China and India. In 1990, the biggest gains in total consumption of liquid milk came from Japan and China, whose milk consumption increased 5 per cent from 1989 levels. This was largely due to changes in the eating habits and in turn, an increased
demand for milk by consumers. In Latin America also, consumption increased to some extent as a consequence of milk distribution programmes.

78. The consumption of other fresh milk products such as yoghurt and other fermented or flavoured milks was steadily increasing in a number of countries and was expected to continue its upward trend. Also the consumption of flavoured milks was developing rapidly. There was a potential demand for yoghurt and flavoured milks in many developing countries, but the consumption continued to be hampered by relatively high prices.

79. The strong demand for milk products has encouraged the development and production of dairy substitutes and imitations, which to a variable degree contain milk components. Market information for such products have been difficult to obtain, but it was generally believed that their rôle in the market was still small in quantitative terms. The appearance of dairy substitutes and imitations had given rise to some concern as to the effect this would have on the dairy market in the future and which might necessitate measures to protect the marketing of traditional milk products. In September 1988, the International Dairy Federation adopted some guidelines for the designation and presentation of substitute products. These guidelines were intended to identify and prevent misuse of designations reserved for milk and milk products and to achieve a proper labelling of substitutes so that consumers could be properly warned.

The Situation for Individual Dairy Products

Butter and Anhydrous Milk Fat

Butter

Production

80. World production of butter and butter oil which had increased by 1.4 per cent in 1989 continued to increase at a similar rate in 1990, then amounting to 7.70 million tons. Production tended to increase as a result of increased milk production and the shift to lower fat content of other dairy products. At the same time, the demand for butter decreased and the result was an accumulation of butter stocks, notably public intervention stocks, and increased quantities offered for exports. The outlook for 1991 was for a relative stability in world production.

81. In the Community, the tendency towards lower fat products on the liquid milk market generally continued. This in conjunction with the higher fat content of the milk delivered to dairies and reduced production of whole milk powder, resulted in an increase by 1.9 per cent in butter production to 1.75 million tons in 1990. However, the outlook for 1991 was for a decrease in butter output of the same order, production returning to its 1989 level.
82. In New Zealand, production of butter/butter oil in 1988/89 was 246 thousand tons, 12 per cent less than in the previous season. In 1989/90, however, it recovered by 12.2 per cent to around 276 thousand tons, but still remaining lower than the output of 280.7 thousand tons in 1987/88. For 1990/91, production might continue to recover in line with the expected increase in milk output. The dairy industry was continuing to pursue the objective of reducing the proportion of milk used in butter manufacture in face of reduced access to traditional markets and the lack of secure alternative markets. Australian butter/butter oil production expanded by 10 per cent during 1989/90 to 105.5 thousand tons as manufacturers responded to higher price relativities and the greater storage capacity of butter. The upward trend was expected to continue into 1991 but uncertain export sales might dampen this growth. In 1990, butter production increased further in Sweden, but declined in Norway and remained stable in Finland. In Poland, output decreased substantially (by around 10 per cent) in 1990 to some 266 thousand tons.

83. The United States butter production increased by 5.5 per cent in 1989, reaching 577 thousand tons. The shift in consumption of milk and dairy products toward lower-fat milk products has been an incentive to increase the output of the latter group of products, resulting in an increased quantity of milk fat being diverted to the residual butter production. Government purchases of butter were high in 1989 but decreased in 1990. Production declined in 1990 by some 6 per cent to 540 thousand tons. Canadian butter production decreased by 2 per cent to 99 thousand tons in 1989/90, due to quota cuts caused by declining consumer demand and increased production of cheese. A further decrease (by 6 per cent) to 93 thousand tons was expected for 1990/91.

84. USSR production rose by 3 per cent, reaching a level of 1.8 million tons in 1988 and continued to increase in 1989 but at a modest rate, i.e. only 0.4 per cent totalling 1.81 million tons. However, in the first nine months of 1990, production reportedly increased by as much as 4 per cent and was expected to be higher for the whole year. Moreover, the USSR was planning to increase its production of margarine from the beginning of 1991. In developing countries, butter/butter oil production increased by 3.3 per cent in 1989 to some 1.93 million tons.
Consumption

85. Butter consumption for 1990 was estimated to have further declined by about 2 per cent in relation to 1989. Usage in the EC and other Western European countries dropped further in 1990 but consumption in the United States, the USSR and India was reportedly up over 1989. World per capita consumption which averaged 2.7-2.8 kgs. over the last ten years stagnated or declined slightly through 1990. In 1990, increased retail prices in Eastern European countries adversely affected the consumption of butter. The trend to switch to blended spreads and low fat spreads (both butter and margarine) accelerated in 1989 and 1990. In the short and medium term it was likely that the downward trend in butter demand would continue or even accentuate.

86. In the Community, butter from intervention storage continued to be available at a discount price for non-profit making organizations and for the armed forces. Member States also subsidized butter for social purposes and the Community contributed financially to national schemes for school milk. Measures under the milk co-responsibility regime continued in 1989 and 1990, providing funds for subsidized butter to be used in pastry products, ice-cream and sugar confectionery. In the autumn of 1988, certain limitations had been introduced in the granting of the aids. In May 1989, subsidies on sales to non-profit making organizations were cut and the regulation for butter sales to the armed forces suspended. Taking into account the evolution of the situation in the butter market, the aid granted to butter for use in pastry products and ice-cream was increased in June 1990. Total Community consumption of butter declined by 4.2 per cent for 1990 and might continue to decline in 1991 at an even higher rate causing concern. The decline was due partly to higher prices, partly to the increased supply of imitation products in some member States and a reduction in sales at reduced prices and dietary concerns.

87. In Switzerland, a number of measures were taken to promote butter consumption and the product was being sold at prices considerably below cost, mainly with the help of subsidies. However, domestic consumption of butter continued to decline in 1989 and 1990, as it did in the Nordic countries.

88. Increased retail prices adversely affected butter consumption in Central and Eastern Europe in 1990. In 1990, average consumption per head in Poland was estimated to have been halved. In Romania, butter consumption increased in 1990. In early 1990, exports were curbed and restrictions on imports eased, with commercial imports being supplemented by food aid. Later in 1990 Bulgaria took a similar decision with a view to maintaining supplies for domestic consumption.

89. In Australia, domestic sales of butter, butter blends and butter oil remained at 54.8 thousand tons of butter equivalent in 1988/89 and increased marginally to 55 thousand tons in 1989/90. The repeal of the Margarine Act from 1 January 1990, meant that the manufacture and sale of saturated fat margarines on the New Zealand market became legal. These
products are cheaper than both polyunsaturated margarines and butter. The repeal of the Margarine Act also allowed for sale on the New Zealand market of manufacture of blended spreads: margarines with milk fat added, claiming both the benefits of margarine and the taste of butter. These developments threatened to make significant inroads into the market share for butter which currently accounts for an estimated 65 per cent of the New Zealand consumer yellow fats market, remaining one of the biggest selling product categories in grocery outlets. The dairy industry was portraying butter as a natural spread which tastes better than any of the alternatives. Butter consumption declined by as much as 7 per cent in 1989/90 and concerns were expressed that this trend might continue in the coming years.

90. In the United States butter consumption continued to decrease in 1989. However, consumption recovered in early 1990, as butter use responded to lower prices. For 1990 as a whole, consumption was up by 5.8 per cent to 512 thousand tons and was expected to rise an additional 3 per cent in 1991. This increase was largely due to lower butter prices. In Canada, butter consumption continued to decrease in 1988/89 and 1989/90 and was expected to drop by 2 per cent in 1990/91. Consumption of butter and milk products in general rose in the USSR, not withstanding reported local shortages and widespread rationing of distribution by State shops. With domestic output and imports increasing, total butter consumption in the USSR reached about 2.2 million tons in 1990, more than a quarter of global consumption. However, the relatively high consumption level of about 7.5 kgs. per head reflected, to a large extent, heavy subsidization. Economic reforms were likely to affect domestic prices and per capita consumption of dairy products.

Trade

91. A continued decline in milk fat consumption in many countries resulted in lower import demand on one side and increased exportable availabilities on the other. Increased quantities of butter were offered on international markets in 1990 facing a slack import demand. In 1988, a large part of world exports at 1 million tons consisted of deliveries under derogations agreed previously. World exports declined in 1989 to 800 thousand tons. Sales by the European Communities and Oceania declined while those of the United States showed a substantial increase. As a result of a further deterioration of the market for butter, world exports in 1990 decreased to some 700 thousand tons. This was accounted for by the decline in EC and United States exports.

92. At its meeting of December 1990, the Committee of the Protocol Regarding Milk Fat noted that economic changes in the USSR were disrupting the established channels for food procurement and distribution and that an emergency situation had developed with an urgent requirement for imports of food, including butter, on special terms. In light of the situation and the facts presented, the Committee, acting in conformity with Article 7:1 of the Protocol, granted a derogation from the provisions of the Protocol with respect to the minimum export price for butter for exports to the USSR up to a maximum quantity of 200,000 metric tons per participant, for butter
exclusively for consumption in that country. Sales contracts should be concluded before 15 January 1991 and deliveries should be completed by 30 September 1991. Sales of 311 thousand tons were contracted under that derogation.

93. The **Community** exports of butter to third countries (including butter oil) registered a substantial decline of 40 per cent amounting to only 360 thousand tons in 1989. A large quantity again went to the USSR but at prevailing world market prices. In 1990, exports of butter/butter oil estimated at 220 thousand tons registered a further substantial decline of 40 per cent in relation to 1989. Pursuant to the Decision adopted on 12 December 1990, a contract for the supply of 200,000 metric tons of Community butter to the USSR had been concluded. The delivery period was February to September 1991 but was depending on shipping possibilities.

94. In 1989, exports by **New Zealand** amounted to only 138 thousand tons compared to 184 thousand tons in 1988. The European Communities remained the main outlet. In September 1989, special arrangements were made for imports of New Zealand butter into the Community between 1989 and 1992 under which the global volume of butter which New Zealand could export to the European Community was fixed at 64,500 tons and 61,340 tons for 1989 and 1990 respectively. The arrangements provided for a reduction in the special import levy from 25 per cent ad valorem to 15 per cent. For subsequent years, Community imports of butter from New Zealand under the special arrangement will be progressively further reduced to the following quantities: 58,170 tons in 1991 and 55,000 tons in 1992. Other important outlets for New Zealand butter were Iran and the USSR. In the first nine months of 1990, exports increased to 126 thousand tons as compared to 84 thousand tons in the corresponding period of 1989; the main outlets being the USSR and the European Communities. Pursuant to the Decision adopted on 12 December 1990, New Zealand contracted to supply some 100,000 metric tons of butter to the USSR at a price of US$1,150 per metric ton f.o.b. stowed. The butter was scheduled for delivery in the first half of 1991. New Zealand sold reportedly also a further 32,400 metric tons to Iran at the minimum export price of US$1,350 per metric ton f.o.b.

95. **Australian** exports of butter/butter oil at 52.3 thousand tons in 1988/89 remained unchanged as compared to the previous season but fell by 3.6 per cent to 50.5 thousand tons in 1989/90 in spite of some sales of bulk butter to the New Zealand Dairy Board for re-export. The decline was more marked for butter oil following a weakening in demand from traditional Asian markets. Within the terms of the Decision adopted on 12 December 1990, Australia contracted to supply 4,000 metric tons of butter to the USSR at a price of US$1,150 per metric ton stowed. The contracted product was scheduled for delivery in the first half of 1991.

96. Exports of butter by the **Nordic Countries** increased in 1990. In accordance with the Decision adopted on 12 December 1990, **Finland** concluded a contract to deliver 7,000 tons of butter to the USSR by the end of September 1991, at a price of US$1,200 per metric ton.
97. Exports of butter by Argentina registered a substantial increase in 1989 when they reached 6 thousand tons in relation to 0.8 thousand tons in 1988. They were also at higher levels for the first half of 1990. These increases were mainly due to reduced domestic consumption.

98. As a consequence of increased production and decreased consumption, Poland resumed its exports of butter in early 1990. In March, a sale of 10 thousand tons of butter to the USSR had been concluded at a price of US$1,350 per ton f.o.b., i.e. the agreed minimum export price. For the first nine months of 1990, exports amounted to 18 thousand tons. However, as a result of the significant decline in milk output in the autumn and winter, Poland would have to import some 5,000 to 10,000 tons of butter early in 1991. Romanian exports of butter and butter oil were around 19 thousand tons in 1988 and in 1989, the main destinations being the USSR and Egypt. In early 1990, Romania restricted its exports and allowed greater imports of dairy products with a view to increasing supplies for domestic consumption. Thus, Romania imported as much as 15 thousand tons of butter in the first six months of 1990.
99. After having declined for the three consecutive years to a level of some 9 thousand tons, in 1989 United States butter exports increased substantially. In early 1989, larger milk production resulted in an increase of output of butter and skimmed milk powder, the demand for the latter product being strong. However, commercial use of butter fell and public stocks increased. In September, sales of 50 thousand tons of butter to the USSR had been concluded at a price of US$1,618 per ton f.o.b. and the butter was shipped during December 1989-March 1990. The 1985 Farm Bill mandated the sale of 150,000 tons of dairy products (of which 100,000 tons of butter) annually through fiscal year 1990. This target for butter exports had not been attained in any year. United States exports in 1990 were estimated at 50 thousand tons. Projections for 1991 indicated an increase in exports to 90 thousand tons.

100. The Community imports of butter, which in 1988 totalled 76 thousand tons, decreased to some 69 thousand tons in 1989 but reportedly recovered in 1990. New Zealand remained the main source of the Community imports. Imports into Switzerland decreased substantially in 1989 and 1990. Polish butter imports decreased by almost 66 per cent to 11.5 thousand tons in 1989 and there were no imports in 1990, mainly due to increased domestic production. However, imports were likely to resume early in 1991.

101. Japan, whose imports of butter averaged only 2 thousand tons a year between 1981 and 1987, made supplementary purchases in 1988 amounting to as much as 21 thousand tons. Total imports reached 23.3 thousand tons in 1988, the main supplier being New Zealand. In 1989 imports at 10 thousand tons were substantially lower than in the previous year and were expected to decrease further in 1990, although Japan bought 3 thousand tons in September 1990 and 1,000 tons in October 1990, to cover a potential shortfall in domestic supply. In mid-December 1990, Japan decided to import 3,500 tons of butter during a period from December 1990 to March 1991, as the butter market situation continued to show signs of firming.

102. The USSR, where consumption of milk and dairy products rose faster than production, remained the world's biggest importer of dairy products which totalled approximately 3 million tons of milk equivalent in 1990. In 1989, the USSR imported substantial amounts of butter, part of which resulted from earlier purchases of cheap old butter from Community stocks, but sizable quantities of fresh butter were also purchased at prevailing world prices, chiefly from the European Communities and New Zealand. In September of 1989, the USSR turned to the United States which released surplus butter from government stocks. Imports of butter in 1989 were 247.1 thousand tons, down by 44 per cent from the record level of 440.5 thousand tons reached in 1988 (Table 4). In the first half of 1990, the USSR bought some 70 thousand tons of butter from New Zealand at the price of US$1,450 per ton f.o.b. and some 10 thousand tons from Poland at the price of US$1,350 per ton f.o.b., and Nordic countries shipped some 20 thousand tons to that market. During that period imports of butter increased by 22 per cent in relation to the corresponding period of 1989. Moreover, the USSR obtained a grant from the Federal Republic of Germany to buy dairy products and meat in EC markets. Butter imports for the whole
TABLE 4

Imports of Butter into USSR by Origin
('000 metric tons)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>189.46</td>
<td>403.11</td>
<td>440.47</td>
<td>247.05</td>
</tr>
<tr>
<td><strong>of which from:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>16.67</td>
<td>9.99</td>
<td>5.75</td>
<td>4.37</td>
</tr>
<tr>
<td>Denmark</td>
<td>-</td>
<td>5.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ireland</td>
<td>15.75</td>
<td>-</td>
<td>12.06</td>
<td>29.40</td>
</tr>
<tr>
<td>Netherlands</td>
<td>14.71</td>
<td>113.14</td>
<td>121.05</td>
<td>30.31</td>
</tr>
<tr>
<td>France</td>
<td>25.08</td>
<td>49.97</td>
<td>19.08</td>
<td>3.88</td>
</tr>
<tr>
<td>Germany, F.R.</td>
<td>-</td>
<td>133.00</td>
<td>183.00</td>
<td>27.00</td>
</tr>
<tr>
<td><strong>Total EC countries</strong></td>
<td><strong>mentioned</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>72.22</td>
<td>311.10</td>
<td>340.94</td>
<td>94.96</td>
</tr>
<tr>
<td>Hungary</td>
<td>3.48</td>
<td>1.06</td>
<td>1.00</td>
<td>5.38</td>
</tr>
<tr>
<td>Norway</td>
<td>1.67</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Finland</td>
<td>9.34</td>
<td>6.10</td>
<td>8.79</td>
<td>7.85</td>
</tr>
<tr>
<td>Sweden</td>
<td>5.46</td>
<td>-</td>
<td>-</td>
<td>8.60</td>
</tr>
<tr>
<td>Canada</td>
<td>0.67</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Uruguay</td>
<td>3.37</td>
<td>-</td>
<td>2.50</td>
<td>4.00</td>
</tr>
<tr>
<td>New Zealand</td>
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<td>30.70</td>
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<tr>
<td>Others (unspecified origins)</td>
<td>44.38</td>
<td>73.47</td>
<td>48.95</td>
<td>95.56</td>
</tr>
</tbody>
</table>

year of 1990, estimated at approximately 400,000 tons, increased by 60 per cent accounting for more than half of world trade in this commodity. The derogation adopted in December 1990, would permit sales at prices below the agreed minimum export price for butter and could stimulate imports by the USSR in 1991, and at the closing date for contracting sales under that derogation, contracts had been concluded for 311 thousand tons. However, consumption could start decreasing in the USSR if this country embarked on a move towards a market economy and cut food subsidies. A fall in demand in the USSR would have major repercussions on international trade in dairy products, especially butter.

**Stocks**

103. Total stocks of butter in the European Communities, North America and Oceania on 1 January 1990, at 383 thousand tons were 8 per cent lower than a year earlier, while stocks on 1 January 1991, estimated at 643 thousand tons, had registered an increase of 68 per cent as compared to 1 January 1990. Concerns had been expressed that stocks of butter would be on the rebound as a result of the fall in demand. However, it was expected that the sales to the USSR under the derogation granted on 12 December 1990 would allow the disposal of a substantial quantity of butter and that by mid-1991 the market would be better balanced. Stocks of butter in Central and Eastern Europe on 1 January 1990 were higher than a year earlier and they continued to increase early in 1990 but later decreased and returned to normal levels at the end of that year.

104. The Community stocks of butter were estimated at 330 thousand tons (public and private) at the end of 1990 as compared to 124 thousand tons one year earlier. There were no intervention purchases whatsoever in 1989. Following a decrease in prices, it was decided in January 1990 to buy some 12 thousand tons of butter, the first intervention purchase in two years. Intervention purchases continued throughout the year of 1990.

105. In Oceania, stocks of butter at 115 thousand tons on 1 January 1991 were higher by 7 per cent in relation to their level on 1 January 1990. However, they were expected to decrease during the first half of 1991 as a result of deliveries of butter by New Zealand mainly to the USSR and Iran. In Poland, stocks of butter at 36.6 thousand tons on 1 January 1990 had more than doubled from a year earlier, this substantial increase being due to declining consumption in reaction to higher retail prices. However, following the significant decline in output of milk in the second half of 1990, butter stocks had been completely wiped out and it was expected that Poland would have to resume its imports of butter in early 1991. In Finland, butter stocks at 14 thousand tons on 1 January 1991, had hardly changed from a year earlier, despite declining consumption.

106. In the United States, government purchases of butter rose substantially, reflecting a jump in the surplus of high-fat products with public stocks continuing to swell in 1989 and early 1990 and were at 160 thousand tons on 1 January 1991, up by 28 per cent on their level a year earlier. Government support purchases of butter in 1990 at 181 thousand tons were large but nevertheless 3 per cent down from a year
earlier, reflecting smaller production and larger commercial use. Purchases of butter in 1991 were expected to be lower. Canadian stocks reached 28 thousand tons at the end of December 1990, the double of their level a year earlier.

**BUTTER STOCKS 1980-1990**

IDA PARTICIPANTS •

- Includes Austria, Canada and the US

International prices

107. Reduced supplies and lower carry-over stocks resulted in a further improvement of prices in 1989 with prices for fresh butter fluctuating between US$1,750 and US$2,100 per ton f.o.b. in the first nine months of the year. However, prices started to weaken in the fourth quarter, ranging between US$1,650 and US$2,000 per ton f.o.b., and the decline continued in 1990, following a decline in butter consumption in many countries. International prices declined to the range of US$1,450-US$1,550 per ton f.o.b. in the first quarter of 1990 and then dropped to US$1,350-US$1,500 per ton f.o.b. in the last three quarters of 1990. In the fourth quarter, only little trade was effected. Certain offers and sales had reportedly been made at prices below the minimum export price of US$1,350 per ton f.o.b. and uncertainties persisted as to the price situation in 1991. However, the sales to the USSR under the derogation adopted in December 1990, might result in some firming of prices towards the middle of 1991 when stocks would have returned to more normal levels.
108. Concern was expressed as to the unsatisfactory situation dominated by a fragile butter market, and the Committee of the Protocol Regarding Milk Fat urged participants to take the necessary steps to ensure full observance of the provisions of the Arrangement related to minimum export prices. An appeal was also made to non-participating countries not to undercut prices and not to sell below the agreed minimum export prices. In its review of September 1990, the Committee decided to maintain the minimum price unchanged at US$1,350 per metric ton f.o.b.

![Butter Prices 1980-1990](image)

**Anhydrous Milk Fat**

**Production and trade**

109. Output of anhydrous milk fat of the European Communities and Australia was higher in the first nine months of 1990 than in the corresponding period of 1989, while production in New Zealand registered a decrease in the period in question. In the same period, exports by the European Communities and New Zealand increased substantially while exports by Australia registered a decrease.
Food aid

110. The 1989 Community food-aid programme provided for a maximum of 25 thousand tons of butter oil, the same as in 1988. However, for 1990, this programme provided for 18 thousand tons of butter oil. Actual food-aid deliveries in 1989, amounted to 15 thousand tons in relation to 33 thousand tons delivered in 1988. In the first three quarters of 1990, deliveries amounted to 6 thousand tons in relation to 11 thousand tons delivered in the corresponding period of 1989. In February 1990, the Community took emergency action to supply Romania with certain agricultural products including 2.5 thousand tons of butter. In early 1989, the United States entered into discussions with Poland concerning donations of certain quantities of butter. In March 1990, the United States and Romania signed an agricultural aid package under which Romania would receive feed grains and 7.5 thousand tons of butter.

International prices

111. International prices of anhydrous milk fat which had improved throughout 1988 strengthened further in 1989 with prices fluctuating between US$1,900 and US$2,500 per ton f.o.b. in the first nine months of the year. However, prices started to weaken in the fourth quarter ranging between US$2,050 and US$2,200 per ton f.o.b., and continued to decrease ranging between US$1,625 and US$1,950 per ton f.o.b. during the first half of the year. A further decrease was registered in the second half of 1990 when prices ranged between US$1,625 and US$1,880 per ton f.o.b. Certain sales had reportedly been made at prices below the minimum export price of US$1,625 per ton f.o.b.
112. As regards the future outlook, prices and sales of anhydrous milk fat would remain sensitive to competition from vegetable oils and uncertainties would persist in the market. In its review of September 1990, the Committee nevertheless decided to maintain the minimum export price at its present level of US$1,625 per ton f.o.b.

![Graph of Anhydrous Milk Fat Prices 1980-1990](image)

Cheese

Production

113. World output of cheese (all kinds including curd) at 14.72 million tons in 1990 was 2 per cent more than in 1989. The trend was very similar in all regions, but with some variations from one country to another. In the European Communities, cheese production in 1990 reached 4.98 million tons, an increase by 3 per cent over 1989. This partially reflected the increase in internal demand and also the application of a modified intervention system for skimmed milk powder and butter. Larger quantities of milk had been diverted into the production of cheeses. For 1991, a further increase was expected, with cheese production at 5.06 million tons being almost 2 per cent higher than in 1990.

114. In Australia, production of cheese decreased by 8 per cent to 175 thousand tons in 1989/90. This fall reflected reduced import demand in Japan and generally unfavourable price relativities for cheese in the first half of the year. New Zealand cheese production totalled 122 thousand tons in the 1989/90 season. Production was adjusted down during the season as export sales did not achieve expected levels. With cheese stocks at the beginning of the new season being higher than desirable, production in 1990/91 would be held below the 1989/90 level. Appreciable gains were recorded in 1990 in most other participating countries.
115. Following continued growth in commercial demand, United States cheese production reached 2.75 million tons, increasing 8 per cent in 1990. Much of the increase in the milk supply was absorbed by cheese manufacture. This increase would have been greater if skimmed milk powder demand had been less strong. Production in Canada was projected to grow in 1990/91 by 5 per cent to some 260 thousand tons, in response to rising domestic demand. In the USSR, production of cheese (excluding curd and fresh cheese) in 1990 at 915 thousand tons, was around 2 per cent higher than in 1988. A further increase was projected for 1991. USSR production of curd and fresh cheese was estimated to have exceeded 1 million tons in 1990. Production of cheese in developing countries which was around 12 per cent of total world output, hardly changed in 1990.

![Cheese Production 1980-1989](image)

Consumption

116. World per capita cheese consumption was moving up steadily, showing an average annual increase of over 2 per cent since the early eighties. Per capita consumption was particularly high in Western Europe (around 13 kgs.) and in North America (around 11 kgs.); the increase in consumption seemed to be the strongest in these high level consumption countries. The increasing trend in Western Europe and North America was expected to continue at an average annual rate of 2 to 3 per cent. In 1989 and 1990, cheese consumption developed appreciably in North Africa and the Middle East.

117. Cheese consumption for the major producing countries continued to expand, up 3 per cent in 1990. In the European Communities, a gain of 2 per cent was registered in 1990. The outlook for 1991 was for continued growth in total cheese consumption of more than 2 per cent. The great
variety of cheese available and further active product diversification (i.e. low-fat cheeses) were the main reasons for these positive developments. In other European countries, cheese consumption continued to grow. The United States market continued to show strong growth in cheese use with annual gains at 2 per cent in 1989 and around 5 per cent in 1990. Favourable economic conditions and strong import demand led to a substantial increase in consumption in 1990, despite higher prices. 1990 appeared as a year when unidentified factors triggered an extraordinary expansion. A further 3 per cent gain was projected for 1991.

118. The expansion in demand and consumption of cheese has entailed the development and production of imitation cheeses, but such products still had captured only a marginal market share in 1990. However, cheese analogues, filled cheese and imitation cheese were, with some success, being marketed as ingredients for making pizzas and for other cooking applications, notably in the United States.

Trade

119. World exports of cheese were up 2 per cent for 1990 and reached some 887 thousand tons. The general expansionary tendencies observed in the market for 1989 continued into 1990. The international cheese market was dominated by exports from Western Europe and New Zealand, which together accounted for over 75 per cent of exports.

120. The Community cheese exports expanded by as much as 11 per cent in 1989 to 445 thousand tons, and continued to grow in 1990 although at a slower rate (some 6 per cent) to 470 thousand tons. New Zealand exports reached 84.5 thousand tons in 1989, being 13.6 per cent below their level in 1988, the main outlet remaining Japan. However, exports recovered in 1990. Sales of cheese below normal export quality under derogation dropped sharply in 1988 and stopped completely in 1989 reflecting improved market conditions. However, as prices eased in early 1990, New Zealand again sold 1,350 tons of low quality cheese under derogation. Australian exports of cheese in 1988/89, at 62 thousand tons, were substantially lower (by 15.6 per cent), reflecting the effect of stock run-down in 1987/88. Exports declined further in 1989/90 (by 17 per cent) to 51.7 thousand tons mainly reflecting reduced sales to Japan. The main destinations of Australia's exports continued to be Japan and South East Asia. In 1990, Australia notified its intention to sell about 1 thousand tons of low quality cheese under derogation to different countries in Europe.

121. Exports by Switzerland increased significantly (by 6.9 per cent) in 1989 and amounted to 63.9 thousand tons and remained at that level in 1990. Exports of Finland dropped from 31 thousand tons in 1988 to 27.3 thousand tons in 1989. Exports by Argentina which more than doubled in 1988 (11 thousand tons) continued to expand in 1989 by 28 per cent to 14.2 thousand tons. A further expansion in exports was registered in 1990. Sales by Bulgaria, dropped by as much as 20 per cent in 1989 to 21 thousand tons and decreased further in 1990.
122. Cheese exports from the **United States** which had been low in 1988 at 17 thousand tons, again fell substantially in 1989 to only 7 thousand tons and in 1990 declined to a five-year low of only 5 thousand tons. This was due in part to high domestic prices for cheese. **Austrian** exports of cheese dropped in 1990, while exports from **Canada** remained relatively stable.

123. On the import side, **Community** imports at 116 thousand tons in 1990, mostly from Switzerland, were little changed in relation to the previous year. **Japanese** imports of cheese in 1989 at about 112 thousand tons were 2 per cent lower than in 1988, the main suppliers being the European Communities, New Zealand and Australia. Domestic demand for cheese, which had nearly doubled in ten years, was likely to continue to increase. The larger demand was covered by increased domestic milk and cheese production in 1990 and Japanese cheese imports once more fell. In **Switzerland**, imports of cheese remained relatively stable in 1990 at around 24 thousand tons.

124. **United States** purchases totalled 125 thousand tons in 1989, up by 9 per cent on 1988. The bulk of the imports was from the European Communities, New Zealand and Finland. Imports in 1990 were up 12 per cent to a five-year high of about 140 thousand tons.

125. Import demand for cheese in North Africa and the Middle East was again strong and increasing in 1989, with imports of Feta cheese into **Egypt** and **Iran** increasing by more than one third compared to 1988, and import demand in these areas remained lively in 1990, although the trade blockade of Iraq and Kuwait and transportation problems caused by the military conflict in the Gulf had adverse effects on cheese imports into countries in the area.
Stocks

126. Cheese stocks, on 1 January 1991, were higher than one year earlier in the Community and New Zealand, while they were low in Australia and the Nordic countries. United States stocks which on 1 January 1991, were higher than one year earlier, but still amounting to only about half of their average levels in 1981 to 1983. For all countries for which statistics on cheese stocks were available there seemed to be an increase in stocks of 2.5 per cent in 1990 compared to 1989.

![Cheese Stocks 1980-1990](image)

*Includes Austria, Canada and the US

International prices

127. Cheddar cheese prices which had been high during 1988 levelled off in 1989 with quotations for Cheddar being in the range of US$1,900 to US$2,400 per ton f.o.b. in the first half of the year, slightly down from the peak reached towards the end of 1988. During the fourth quarter of 1989 they fluctuated between US$1,900 and US$2,300 per ton f.o.b. In the first half of 1990 they tended to ease further ranging between US$1,700 and US$2,000 per ton f.o.b. A further weakening was registered for Cheddar cheese prices in the second half of the year when quotations fluctuated between US$1,500 and US$1,950 per ton f.o.b. In the third quarter and between US$1,550 and US$2,000 per ton f.o.b. in the fourth quarter. However, for most of the cheeses covered by the Protocol, prices remained well above the agreed minimum export price and were expected to firm in coming months, as import demand was sufficient to absorb the increased supplies, notably in the case of speciality cheeses. Cheddar cheese quotations were showing weakening tendencies by mid-year 1990, probably a reaction to plentiful supplies offered for export and high stocks of produce for ripening.
128. In its review of September 1990, the Committee of the Protocol Regarding Certain Cheeses decided to maintain the minimum export price unchanged at US$1,500 per ton f.o.b.

**CHEESE PRICES**

**1980-1990**

**Milk Powders**

**Skimmed Milk Powder and Buttermilk Powder**

**Production**

129. World production of skimmed milk powder in 1989 at 3.8 million tons was 1.1 per cent lower than in 1988. A decrease over three consecutive years was mainly due to reduced butter production and larger sales of light milk products and consequently less skimmed milk becoming available for drying. Much of the decline can be attributed to Community efforts to reduce milk output and surplus stocks. The reduction in Community production was particularly important as it had accounted for nearly half the world production since the 1960's but in 1989 was even below one third of world production. The United States also curtailed skimmed milk powder output. For 1990, world output of skimmed milk powder increased by 5 per cent to 4 million tons in relation to 1989 with a further recovery in Western Europe and Oceania offsetting declines in North America. However, world production in 1991 was forecast to show little change from 1990 levels.

130. After having decreased sharply for two consecutive years, output of skimmed milk powder in the European Communities recovered in 1989 and totalled 1.40 million tons, up by 6.6 per cent on 1988. Despite the increased allocations to drinking milk and cheese, production of skimmed milk powder increased mainly due to the cutback in the production of casein and in the use of liquid skimmed milk for animal feeding. For 1990, Community production of skimmed milk powder showed a strong increase, of
12.4 per cent to 1.60 million tons due largely to the increasing quantities of liquid skimmed milk resulting from the substantial cutback (by 20 per cent) in casein production.

131. In New Zealand, production of skimmed milk powder declined by 10 per cent to 154 thousand tons in the season 1988/89 in line with the reduction in butter output but increased by 22.7 per cent in 1989/90 to a level of 189 thousand tons. It was forecast that production in 1990/91 would hardly change from 1989/90. Buttermilk powder production decreased also in 1988/89. In Australia, production of skimmed milk powder buttermilk powder in 1988/89 was at 126.8 thousand tons, a decline by 0.8 per cent over 1987/88. In line with international market relativities, production of skimmed milk powder buttermilk powder increased substantially in 1989/90 to 139.7 thousand tons, up 10 per cent on 1988/89. Shifts in domestic utilization by food processors from skimmed milk powder to skimmed milk concentrates have been offset by a producer shift to skimmed milk powder production in light of continuing market uncertainties. In Japan, production increased by some 10 per cent in 1989 to 178 thousand tons as a result of the growth in milk production and increased further by some 3 per cent to 183 thousand tons in 1990. In Poland, production increased by 10 per cent in 1989 to 175 thousand tons but remained relatively stable in 1990. Production of skimmed milk powder by other participants followed varying trends in 1990.
132. In the United States, output decreased by 11 per cent in 1989, reaching 395 thousand tons. Production declined further in 1990 by 5 per cent to 375 thousand tons despite the expansion in milk production as milk was being diverted away from butter-skimmed milk powder into cheese production. As sales of lower fat products continued to increase, demand for liquid skimmed milk trimmed skimmed milk powder output. However, the outlook for 1991 was for a recovery in skimmed milk powder production. Canadian production in 1989/90, declined by 10 per cent to a level of 93 thousand tons, due to a reduction in industrial milk quotas. For 1990/91, a further decline by 13 per cent to 81 thousand tons was projected. Production in the USSR continued to increase in 1989, reaching 543 thousand tons and registered a slight gain also in 1990. Output in India increased by as much as 13 per cent in 1989 to 90 thousand tons and by another 6 per cent to 95 thousand tons in 1990. The outlook for 1991 was for a further increase to 100 thousand tons. Brazilian production also showed a steady increase from 50 thousand tons in 1989 to 60 thousand tons in 1990 and was expected to expand to 70 thousand tons in 1991.

Consumption

133. World consumption of skimmed milk powder fell in 1989, reflecting the tighter supply situation for milk powders. However, it remained stable in 1990 and this stability was likely to continue into 1991. In the European Communities, total domestic consumption declined in 1988 and 1989. However, this was due to reduced use of powder by the compound feed industry; while powder used for human consumption increased strongly in 1989, exceeding 300 thousand tons. Domestic consumption of skimmed milk powder for calf feed declined over recent years and fell further in 1989 to some 750 thousand tons. This declining use in feeding could partly be attributed to a reduced raising of calves in line with reduced cow numbers. There was also an increasing substitution for skimmed milk powder by whey powder and possibly also soya bean meal. Taking into account the evolution of the market situation, the aids granted to skimmed milk powder and liquid skimmed milk used in animal feed were increased in June and in October 1990. Thus an aid level of ECU 70 per 100 kgs. (+ ECU 10) and a minimum incorporation level of 50 per cent were decided in October 1990. As a result of these measures, consumption of skimmed milk powder as feed increased by some 7 per cent to 800 thousand tons in 1990.

134. In Japan, where total consumption recovered in 1990 about one fourth of the consumption was used for animal feed. In the United States total domestic consumption decreased in 1989 and the use in animal feed dropped to negligible levels. For 1990, however, a substantial increase by as much as 30 per cent was registered in domestic consumption. In Canada, total domestic consumption rose in 1989/90 by 9 per cent and one fifth of the consumption was used for animal feed. For 1990/91, however, domestic consumption was expected to decline by 5 per cent.
Trade

135. Due to the continued tightness in world supplies with the decline in production and the negligible level of stocks, world exports of skimmed milk powder in 1989 declined by as much as 250 thousand tons to 950 thousand tons. International trade in skimmed milk powder declined further in 1990 to some 900 thousand tons due mostly to lower exports by the European Community and the United States.

136. With reduced supplies and negligible intervention stocks, Community exports in 1989 reached only about 408 thousand tons, i.e. a decline by 34 per cent compared to 1988. The market share of the European Communities decreased to 40 per cent in 1989 from 50 per cent in 1988. At around 350 thousand tons in 1990, Community sales registered a further decline by 14 per cent.

137. Skimmed milk powder exports by New Zealand increased by 3.8 per cent in 1989 and reached 146 thousand tons. The main destinations were countries in South East and Eastern Asia and Mexico. Exports continued to increase at a higher rate (by some 20 per cent) in 1990 to 175 thousand tons. Buttermilk powder exports registered a sharp drop in 1989 but recovered in 1990. In July 1990, New Zealand gave advance notification of its intention to conclude a sale to Japan of skimmed milk powder for purposes of animal feed under derogation. The quantity involved was 3 thousand tons with delivery scheduled in August or September 1990.

138. Australian exports of skimmed milk powder/buttermilk powder in 1988/89 decreased by 4.5 per cent to 74 thousand tons. However, exports for the 1989/90 season were up on 1988/89 to reach 96.7 thousand tons. The emergence of Mexico as a major buyer saw skimmed milk powder exports increase by 28 per cent to 87.7 thousand tons. Exports of buttermilk powder increased by 84 per cent to 9 thousand tons during 1989/90.
139. Skimmed milk powder exports by Poland increased by 28 per cent in 1989 to some 60 thousand tons and remained relatively stable in 1990. In December 1990 and January 1991, Poland gave advance notification of its intention to conclude sales of a total of 7,371 tons of skimmed milk powder for animal feed. The destinations were Japan, France, Denmark and the Netherlands with deliveries scheduled from December 1990 to March 1991. As a result of these sales the surplus dairy stocks of Poland were eliminated.

140. In 1989, all United States skimmed milk powder exports were through commercial channels. At 170 thousand tons, they were 22 per cent down on 1988 and well below those of 1985-87, when the Commodity Credit Corporation had exported large quantities of surplus skimmed milk powder through donations and direct export sales. In 1989, the United States exports of non-fat dry milk to Mexico amounted to some US$70 million. In fiscal year 1990, a GSM 102 credit of US$115 million was extended for sales of non-fat dry milk to Mexico and another extension of US$1 million was announced for fiscal year 1991. A further substantial drop in United States skimmed milk powder exports was registered in 1990 when sales amounted to only 10 thousand tons. Commercial use of cheese and liquid milk kept domestic supplies of skimmed solids fairly tight, and powder manufacturers did not over-commit to the export market for a second year. Moreover, domestic demand for protein-rich products increased. The forecast for skimmed milk powder exports in 1991 was for a substantial increase from 10 thousand tons in 1990 to 100 thousand tons due to proposed export subsidies for skimmed milk powder. These exports would come from public stocks. In Canada, a sharp decline was registered and exports of skimmed milk powder amounted to only 32 thousand tons for 1989. In 1990, exports remained relatively stable but in the 1990/91 dairy year, exports might decline again because of reduced supply.

141. On the import side, purchases by Japan in 1989 at 99 thousand tons were 24 per cent lower than in 1988. This decrease was mainly due to a decline in imports for animal feed purposes which was caused by higher international market prices. Imports declined further in 1990 to 90 thousand tons as domestic production increased.

142. Import demand, mainly for recombination purposes in some developing countries, remained strong. Mexico had maintained imports of dairy products at a high level, in spite of a sharp fall in foreign exchange earnings and larger domestic output. Mexico imported 240 thousand tons in 1989 thus becoming the world’s largest importer of skimmed milk powder. The United States remained the main commercial supplier in 1989. It was also reported that Mexican plans to achieve self-sufficiency in fluid milk production would not be reached soon, and it was estimated that skimmed milk powder imports had increased to 250 thousand tons in 1990. However, the outlook for 1991 was for a 20 per cent decline in imports to some 200 thousand tons, Mexico still remaining the largest importer of skimmed milk powder. Brazilian imports recovered in 1989, amounting to 48 thousand tons. For 1990, imports declined to 20 thousand tons due to a general decline in demand for dairy products in conjunction with the government’s new economic programme. Imports were expected to remain stable in 1991.
Food aid

143. Food-aid deliveries of dairy products consisted mainly of skimmed milk powder and anhydrous milk fat. The decline in surpluses was affecting the availability of milk products that could be provided under food-aid programmes. In recent years, food aid had accounted for about 20 per cent of total exports of dairy products, most of it coming from the United States and the European Communities. However, for 1989 and 1990, shipments under food-aid programmes contracted even more than total exports. Food-aid shipments of dairy products, which had averaged nearly 400 thousand tons (product weight) in previous years, were estimated to have fallen below 100 thousand tons in 1989 and 1990. Two aspects were contributing to this situation: shorter supplies and increased market prices; so, it was difficult to find the powder needed and if it was found, there were budgetary problems concerning how the supplies should be paid for. The reduction in food-aid shipments by the United States had been the result of lower supply. As uncommitted stocks had remained at minimal levels since August 1988, no foreign donations could be made in 1989 nor in 1990.

144. Since the early 1980's, the European Communities had been reducing the share of milk products in food aid, replacing it by larger supplies of vegetable foods, notably cereals. Annual allocations of skimmed milk powder were reduced from 150 thousand tons at the beginning of the decade to 94 thousand tons in 1990, and those of butter oil from 45 thousand tons to 18 thousand tons. In 1989, actual Community food-aid deliveries amounted to 84 thousand tons of skimmed milk powder in relation to 113 thousand tons delivered in 1988. In September 1990, the European Community announced an increase of 10 thousand tons in the annual allocation of skimmed milk powder.
### TABLE 5

Share of Food Aid in Total Exports for Selected Countries

<table>
<thead>
<tr>
<th>Metric tons</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skimmed Milk Powder</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td><strong>1988</strong></td>
</tr>
<tr>
<td>Skimmed Milk Powder</td>
<td>62,100</td>
</tr>
<tr>
<td>EC</td>
<td>615,000</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2,100</td>
</tr>
<tr>
<td>United States</td>
<td>218,600</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>897,800</td>
</tr>
<tr>
<td><strong>Whole Milk Powder</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td><strong>1988</strong></td>
</tr>
<tr>
<td>Whole Milk Powder</td>
<td>47,000</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1,900</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>48,900</td>
</tr>
<tr>
<td><strong>Anhydrous Milk Fat</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td><strong>1988</strong></td>
</tr>
<tr>
<td>Anhydrous Milk Fat</td>
<td>20,000</td>
</tr>
<tr>
<td>EC</td>
<td>170,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>190,000</td>
</tr>
</tbody>
</table>
Stocks

145. Total stocks of skimmed milk powder in the European Communities, North America and Oceania of approximately 164 thousand tons on 1 January 1990, were up by 29 per cent from one year earlier, but compared to the 1981-1983 average level still very low. Throughout 1990, stocks increased notably in the European Communities, and aggregate skimmed milk powder stocks for the three major producing areas on 1 January 1991 amounted to 460 thousand tons, which was nevertheless only half the average level in 1981-83.

146. Limitations on intervention purchases of butter and of skimmed milk powder applied in the European Communities resulted in low public stocks of skimmed milk powder throughout 1988 and 1989. Public stocks remained negligible throughout 1989. However, public stocks increased to 260 thousand tons at the end of 1990, as internal prices weakened. Poor demand for calf fattening in the early part of the year and limited exports meant the market could be kept in balance only by large-scale intervention purchases which became necessary for the first time since mid-1987. Intervention buying of skimmed milk powder had been suspended as foreseen on 31 August 1990. Moreover, the aids granted in the form of skimmed milk powder used for feed were increased in order to promote its consumption and in an attempt to keep public stocks down. However, concerns were expressed that stocks would be increasing as a result of the fall in demand.

147. In Oceania, stocks remained at normal levels throughout 1989 and 1990. Surplus skimmed milk powder stocks in the United States had been totally eliminated in 1989. However, during September 1990, government purchases of skimmed milk powder amounted to some 8 thousand tons, marking the first major purchase in two years. Significant purchases continued during the rest of the year as commercial use was not able to absorb the supplies.
Year-end stocks were up to 90 thousand tons in relation to 22 thousand tons in the beginning of 1990. Stocks might continue to swell throughout the year of 1991.

**International prices**

148. In 1989, prices of skimmed milk powder started to level off, ranging between US$1,700 and US$2,100 per ton f.o.b. This weakening in prices was partly due to lower casein production together with progressive reduction of subsidized use schemes for skimmed milk powder. Prices continued to weaken in 1990, fluctuating between US$1,500 and US$1,700 per ton f.o.b. during the first half of the year, and between US$1,300 and US$1,450 per ton f.o.b. in the third quarter with certain sales reportedly having been made at prices below the range indicated. At its September 1990 review, the Committee of the Protocol Regarding Certain Milk Powders maintained the minimum export prices at US$1,200 per ton f.o.b. for both skimmed milk powder and buttermilk powder. The market situation improved in the fourth quarter and prices increased to the range of US$1,300-US$1,540 per ton f.o.b. Prices of milk powders on the international markets reportedly continued to increase early in 1991 as many oil producing countries (which have enjoyed considerable increases in available income recently) and large dairy importers, such as Algeria and Venezuela, increased their purchases. Moreover, the strengthening of skimmed milk powder prices was also due to the almost complete disappearance of cheap East European product from the market.
Whole Milk Powder

Production

149. In 1989, world production of whole milk powder, at around 2.20 million tons declined by 1.5 per cent compared to 1988 mainly due to a strong decline in New Zealand production while Community production remained relatively stable. In 1990, world output might have continued to decline at about the same rate due to strong declines in Community and Australian production not being offset by a recovery in New Zealand’s output.

150. Community output reached 868 thousand tons in 1989 the same as in 1988. Production declined in 1990 by 7 per cent to 810 thousand tons. In New Zealand, production for export decreased to 170 thousand tons in 1989/90 compared to 195 thousand tons in the previous season. This substantial reduction in production reflected the lack of business in key markets, notably the USSR, Venezuela and Sri Lanka. In 1990/91, production might recover from the low level of the previous season depending on the availability of export markets. In Australia, output declined by 18 per cent to 56 thousand tons in 1989/90. Whole milk powder production for 1990/91 was forecast to fall by around 8-12 per cent. The reduced output reflected the lower return for whole milk powder relative to butter/skimmed milk powder on international markets and producers shift to butter/skimmed milk powder because of increased storage potential.

151. In Argentina, output increased by 15 per cent to 98 thousand tons in 1989. Production in Finland, at only 11 thousand tons in 1989, declined for the second consecutive year but recovered in 1990. In Poland, manufacture of whole milk powder remained relatively stable in 1989 at around 50 thousand tons and registered a decline in 1990 in line with the decrease in milk output.

152. United States production increased by 5 per cent to 81 thousand tons in 1989 and remained stable in 1990. In Austria, output remained unchanged at 11 thousand tons in 1989 and 1990.
153. Whole milk powder exports which had continued their upward trend in 1988, declined to 880 thousand tons in 1989 and reportedly decreased again in 1990 to some 800 thousand tons.

154. Community exports decreased by 4 per cent to 568 thousand tons, accounting for some 65 per cent of the world exports in 1989. A further decrease was registered for 1990 when exports amounted to some 520 thousand tons, representing two thirds of world exports.

155. Exports from New Zealand, the world's second largest exporter, declined in 1989 and were close to 133 thousand tons. The main outlets were in South and East Asia and in South America. Exports recovered in 1990. Australian exports in 1988/89 at 48.4 thousand tons were marginally down as compared to the previous season and fell by 11.8 per cent to 42.7 thousand tons in 1989/90. A further decrease was forecast for 1990/91. Exports from Finland, exclusively to the USSR, declined again substantially by 66 per cent to 5.5 thousand in 1989 but a substantial recovery was registered in 1990. Exports by Argentina almost doubled in 1989 and reached 25 thousand tons, the main destinations being the USSR and Chile. However, sales by Argentina declined in 1990.

156. Whole milk powder purchases by developing countries reached 650 thousand tons in 1989, decreasing by 1 per cent from 1988. Owing to the rising demand of the developing countries, whole milk powder had become the most important item in terms of volume in international dairy products trade in recent years. Rising prices and growing foreign exchange difficulties of many importing countries discouraged a continued increase in purchases. Much of the powder imported into developing countries was for welfare programmes and budgetary restraints prevented increases in purchases to be made. Import demand remained stable in 1990, and did not show signs of becoming more active in spite of lower prices. However, towards the end of the year the market situation improved and it was expected that this improvement would continue into 1991.
International prices

157. In early 1989, the rise in international prices of whole milk powder levelled off and settled at around the same level as for skimmed milk powder of about US$1,800 to US$2,100 per ton f.o.b. for the period January-June. Later in the year prices started to fall, fluctuating between US$1,750 and US$1,950 per ton f.o.b., and fell further in 1990, ranging between US$1,400 and US$1,650 per ton f.o.b. in the first half of the year and between US$1,250 and US$1,400 per ton f.o.b. in the third quarter. However, prices firmed in the fourth quarter and ranged between US$1,350 and US$1,475 per ton f.o.b. They continued to increase early in 1991 when it was reported that Venezuela bought substantial quantities of whole milk powder at prices ranging between US$1,850 and US$1,900 per ton. At its September 1990 review, the Committee of the Protocol Regarding Certain Milk Powders maintained the minimum export price at US$1,250 per ton f.o.b.
Whey in powder or block or concentrate

158. The demand for whey and whey products for use as food and feed ingredients and in pharmaceutical applications remained strong in 1988 and 1989 providing incentives to expand production in several countries. However, towards the end of 1989, demand was weaker as a result of the strong increases in prices. World production of whey powder reached 1.55 million tons in 1989, some 4 per cent up on 1988 and was estimated to have increased at about the same rate in 1990. Furthermore, the production of other related milk concentrates, including lactose, continued to expand, but the magnitude of the production of such products was difficult to evaluate.

159. Community production of whey powder increased by about 2.5 per cent in 1989 compared to 1988, and reached 925 thousand tons accounting for 60 per cent of world production. In 1989, United States production increased marginally (by 0.2 per cent) to 486.2 thousand tons, while Canadian production increased by about 20 per cent to 68 thousand tons. World production of whey powder increased again in 1990 with increases in production in the Community and the United States of 10 and 5 per cent respectively, following developments in production of cheese.

160. In mid-May 1989, the European Communities reduced the levies for skimmed milk powder and for whey powder, which could entail larger imports from third countries. In 1989, the European Communities imported 50 thousand tons and exported 25 thousand tons of whey, mainly in connection with forward processing. Community exports were high in the first half of 1990, while imports were unchanged.

161. The market for whey powder showed some fluctuations in 1989 and appeared to be market driven. Prices in the United States continued to fall during the first half of 1989, in September of that year being only half their level a year earlier. However, the bottom had been reached and prices started to recover. Thus, in November 1989, prices in the United States rose close to US$600 per ton, i.e. the same as in the peak of July 1988. However, prices in Europe at the end of 1989 were at around US$500 per ton. The reason for the relatively low whey powder prices in the first nine months of 1989 was a strong and unexpected increase in supplies and new suppliers entering the market. Prices continued to weaken in 1990 when they fell in December to US$300 per ton in the United States or a decrease by 40 per cent in relation to December 1989. However, prices in Europe in December 1990 were about 20 per cent higher than a year earlier and expressed in dollar terms they were at around US$600 per ton. There was still some uncertainty as to the size of the supplies coming on to the market in the near future, but in early 1991 there was a tendency for prices to strengthen.
Concentrated milk

162. World production of condensed milk registered a decrease 3 per cent in 1989 to reach 4.55 million tons. In the European Communities, output decreased by about 1 per cent to 1.25 million tons from 1988 to 1989, and continued to fall at a higher rate (4 per cent) in 1990 to 1.20 million tons. In the United States and Canada, production continued to fall in 1989 respectively by 9 and 11 per cent, reaching 230 thousand tons in the United States and 74 thousand tons in Canada. However, in 1990, production recovered in these two countries. Australian production of condensed milk showed a substantial increase in 1989/90. Also USSR production continued to expand, reaching 610 thousand tons in 1989, 2 per cent up on the previous year. Condensed milk production in Asia remained stable in 1989 while it declined in Latin America.

163. After having reached a peak of nearly 1 million tons in 1985, world trade in condensed milk declined rapidly to nearly half of that level in 1988, or some 560 thousand tons, and the decline continued. Community exports recovered in 1989 and amounted to 449 thousand tons, i.e. an increase of 17.2 per cent over 1988. However, exports again fell in 1990. Canadian exports declined in 1989 and a further decrease was registered in 1990.

164. In 1989, wholesale prices in Europe and North America ranged from US$1,200 to US$1,500 per ton which corresponded to their 1987 level in dollar terms. From January to March 1990, wholesale prices in the Netherlands were raised to f. 3,400 per ton, close to US$1,800 per ton and remained at that level throughout the year. In dollar terms, however, the price increased to US$2,000 per ton in December 1990.

Casein

165. World casein production which had increased in 1988, fell by 10 per cent in 1989 to 225 thousand tons and continued to decrease in 1990 by 5 per cent to 214 thousand tons. The European Community accounted for nearly all of the reduction, which was related to a reduced milk output and lower supplies of milk being available for casein production. World casein production might decline further by 2 per cent in 1991 to 210 thousand tons.

166. Community production of casein declined in 1989 to 146 thousand tons as producers reacted to decreased export prospects and tighter milk supplies. For the year 1990, production declined by as much as 19 per cent to 118 thousand tons. Higher skimmed milk powder prices resulted in stronger competition for supplies of raw material for processing into casein. Furthermore, the Community production subsidy on casein was further reduced in January 1989. Under a new regime on granting aid for skimmed milk processed into casein, the aid was restricted to casein for specific uses as from 1 March 1989. Community casein producers were consequently facing substantially increased production costs. Furthermore, the casein market suffered from competition of casein substitutes, mainly
soya and slaughterhouse offals, which were far cheaper. As from 10 October 1990, the casein aid scheme was altered to reduce the end-use control difficulties. Moreover, the production subsidy on casein was increased in October 1990. These steps taken in the Community might result in increased supplies in 1991.

167. New Zealand production of casein registered a significant reduction in 1988/89 by 17 per cent to 54 thousand tons but increased by 14.8 per cent in 1989/90, to 62 thousand tons as a result of the recovery in milk production. Polish production of casein increased by 10 per cent to 22 thousand tons in 1989.

168. World exports declined further in 1989, with reduced supplies both to the United States and the Community markets. As international market prices increased, United States interest in foreign manufactured dairy products declined. This was particularly the case with casein, as prices were boosted by the increasing skimmed milk powder prices. Domestic substitutes for casein became much more attractive. United States casein imports declined to about 82 thousand tons in 1989, reflecting continued strength in casein import prices. Imports recovered in 1990 and then amounted to 95 thousand tons, up 13 thousand tons from a year earlier but well below the 108 thousand tons imported in 1987.

169. The market situation continued to be characterized by tight supplies and firming prices in early 1989. The reductions on several occasions of Community producer subsidies for casein, the high skimmed milk costs and the depreciation of the United States dollar entailed higher prices in international markets. Prices remained at a high level of US$5,600 per ton throughout the first half of 1989, in spite of a higher value of the United States dollar. Later in 1989, a users' reaction to the high prices was apparent and prices for casein for technical use came under pressure.

170. In 1990, casein markets were still undergoing major adjustments, not least due to a certain reordering of the Community market for skimmed milk and powder. Persisting uncertainties as to the availability of low priced casein of variable grade in the near future was also a problem. Moreover, East European sales of casein affected the market in 1990 but towards the end of the year excess stocks of casein tended to disappear. The casein market was characterized by further reduction in production and supplies with prices varying widely with the quality. In the United States, prices were nearly 17 per cent lower in August 1990 than what they had been a year earlier, with acid casein prices ranging from US$3,740 to US$4,620 a ton and rennet casein prices ranging from US$4,620 to US$4,840 a ton. In December 1990, edible casein prices in the United States were around US$3,900 a ton, down by 22 per cent from December 1989.