

© OECD, 2003.

© Software: 1987-1996, Acrobat is a trademark of ADOBE.

All rights reserved. OECD grants you the right to use one copy of this Program for your personal use only. Unauthorised reproduction, lending, hiring, transmission or distribution of any data or software is prohibited. You must treat the Program and associated materials and any elements thereof like any other copyrighted material.

All requests should be made to:

Head of Publications Service,
OECD Publications Service,
2, rue André-Pascal,
75775 Paris Cedex 16, France.

© OCDE, 2003.

© Logiciel, 1987-1996, Acrobat, marque déposée d'ADOBE.

Tous droits du producteur et du propriétaire de ce produit sont réservés. L'OCDE autorise la reproduction d'un seul exemplaire de ce programme pour usage personnel et non commercial uniquement. Sauf autorisation, la duplication, la location, le prêt, l'utilisation de ce produit pour exécution publique sont interdits. Ce programme, les données y afférentes et d'autres éléments doivent donc être traités comme toute autre documentation sur laquelle s'exerce la protection par le droit d'auteur.

Les demandes sont à adresser au :

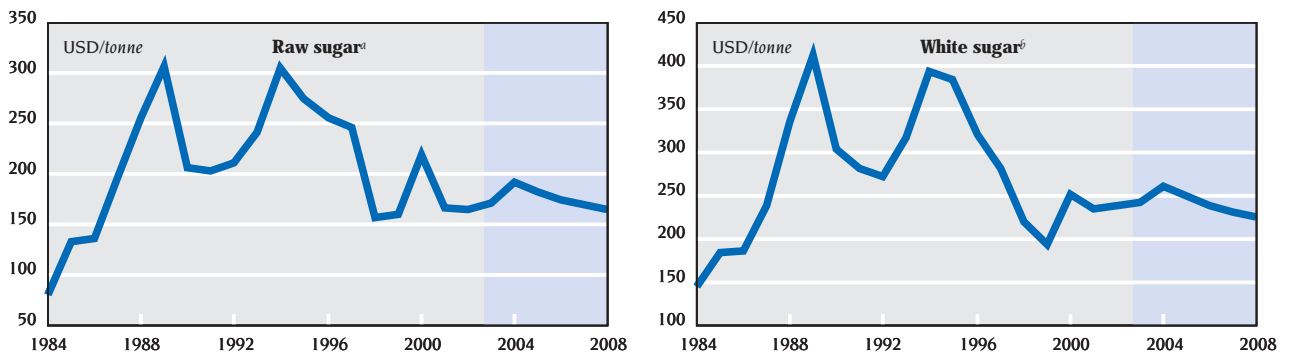
Chef du Service des Publications,
Service des Publications de l'OCDE,
2, rue André-Pascal,
75775 Paris Cedex 16, France.

SUGAR

Main projections – Outlook in brief

- Changes in the structure of the world sugar market point to little respite from low world prices over the medium term. The emergence of Brazil as a large exporter of raw and white sugar with considerable reserve capacity to expand exports is expected to be the key factor in determining sugar prices over the medium to longer term.
- Low world prices at the start of the Outlook should stimulate consumption and (eventually) slow production growth in some countries responsive to world market signals. This leads to slightly higher prices in the early years of the projection period as the balance between supply and demand improves, following some run down in the large stocks overhanging the market. Increased production and exports in response to a small price spike, lead to some rebuilding of global stocks and lower world prices of just over 7 cents/lb (USD 165/t, raw) in the final year of the projection period.
- World production of sugar is projected to increase by around 1.3% per annum, on average, over the entire projection period, and slightly slower than in the last decade, to reach 154 million tonnes in 2008. Production is expected to grow faster in the non-OECD area, and particularly in Brazil where production increases by an average of 4.7% per annum, to reach nearly 30 million tonnes in 2008.
- World sugar consumption is projected to increase to 155 million tonnes, growing by an average of 1.9% a year to 2008, slightly above world population growth, and remains the key driver of the global sugar economy. Sugar consumption is projected to grow faster in the non-OECD region, particularly in Asia and South America, due to more rapid population and income growth. Low or negative per capita consumption growth is projected in the more mature sugar markets of North America, the European Union, Japan and Oceania over the period to 2008.
- Global sugar stocks are expected to reach about 68 million tonnes in 2008 an increase of about 1% over the 2002 level, but with the stocks-to-use ratio falling from 49% to 44%.

Figure 33. **World sugar prices to remain under pressure**



a) Raw sugar world price, New York No. 11, f.o.b., bulk spot price, Sept./Aug.

b) Refined sugar price, London No. 5, f.o.b. Europe, spot price, Sept./Aug.

Source: OECD Secretariat.

World market trends and prospects

World sugar prices to remain under pressure

Relatively low world prices, by historical standards, during consecutive seasons prior to the start of the Outlook are expected to stimulate global consumption of sugar and slow production in some countries open to world markets. This should lead to a pick-up in world sugar prices in the early years of the Outlook as consumption outstrips production growth and begins to eat into the large global stockpile of sugar overhanging the market. Beyond this period, sugar prices are expected to come under renewed pressure and fall to just over 7 cents/lb, raw (USD 165/t), as a result of increasing production and export availability (see Figure 33). A rising wave of low-cost supplies from Brazil, aided by ongoing currency depreciation is expected to keep market clearing, world sugar prices relatively flat, at around this level in the medium term, and possibly over the longer term as well. However, weather-related production shortfalls, or other events, remain a possibility for improving the world sugar balance and contributing to higher prices in particular years.

Production and trade to expand

World market in surplus with only slow production adjustment expected to recent low prices...

The world market is in structural surplus at the beginning of the Outlook period after consecutive years of global sugar production exceeding consumption. A central question given this market situation is what might be the extent of any supply response in major producing and exporting countries to a period of historically low world prices. Past events suggest that the world sugar market is not very responsive to downward movements in world prices. Production often exceeds consumption growth causing a cycle of low prices on the world market followed by shorter price peaks. There are a number of reasons for this price behaviour. These price movements are typically seen as reflecting the perennial nature of sugarcane production that results in a muted response of production to lower prices. For those sugar cane producers with shorter crop cycles and sugar beet farmers the supply

response can be quicker unless masked by other factors. These include the need to maintain throughput in utilising capital intensive cane transport systems and milling operations.

... as some OECD countries insulate their sugar industries with high support and protection

But in addition to these reasons, government support and protection that can shield producers from world price signals goes a long way in explaining the lack of adjustment in what some observers see as a highly distorted world sugar market. One of the key assumptions underlying the Outlook projections is that of a constant policy setting in producing and consuming countries. Within the OECD area, this means that the United States, the European Union and Japan continue to provide high levels of support and protection to their sugar industries, and these policies have a major influence on the world sugar market. While these policies are seen in some quarters as providing an element of stability to domestic sugar markets, this often comes at the cost of lower world prices and high volatility. Sugar production in the European Union is projected to decline slightly with exports to stabilise over the Outlook in line with reduced production quotas conditioned by the stock declassification mechanism of the CMO, and rising imports towards the end of the period. US sugar production continues to expand slowly due to higher yields, although the new FSRI Act of 2002 is administered by USDA so as to ensure that WTO and NAFTA import volume commitments are met. Japanese production is expected to remain largely insulated from the world sugar market and to show little change over the Outlook.

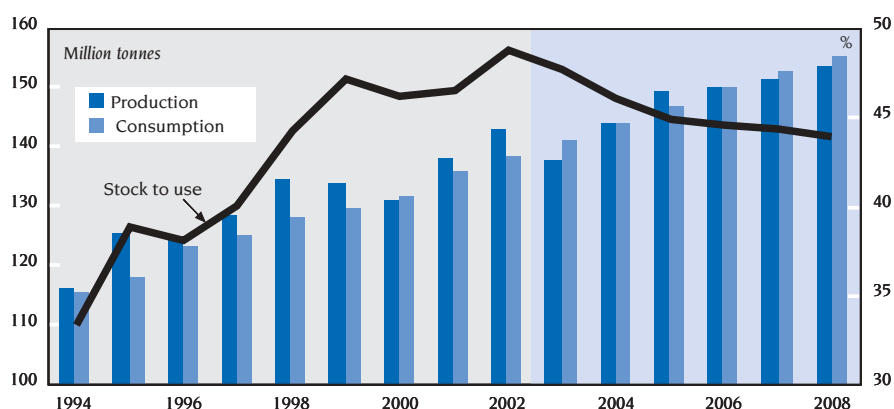
World sugar market structure has changed in response to economic and policy factors...

A third explanation for low world sugar prices is the rather fundamental shifts that have occurred in the structure of the world sugar market over the last decade. These have taken place in response to economic factors and policy reforms that have effectively changed the centre of global production and export growth as well as price determination. As a consequence, most of the growth in the production of sugar for export is now concentrated in a relatively small group of sugar cane producing countries and these generally are those with the lowest costs of sugar production. However even some competitive cane producing countries have been adversely affected by the exceptionally low prices that have occurred over the last two seasons. As a result, the pace of growth of world sugar production is projected to slow slightly in the initial years of the Outlook and to then to begin to accelerate again in response to a temporary, small price spike in 2004-05 (see Figure 34). World sugar production is expected to be nearly 8% higher in 2008, when compared with 2002-03 season. On a year-on-year basis, this represents growth of around 1.3 % per annum over the entire period.

... Brazil has emerged as the price setter in the world market

Brazil is projected to experience the most rapid growth of production of all sugar producers and to increasingly dominate trade in raw and white sugar. Sugar and alcohol policy reforms in the early 1990s and more recent currency depreciation have given rise to a competitive and expanding sugar industry in Brazil, even in a low price environment with sugar production capacity roughly double what it currently exports to world markets. In addition, the expected growth in demand from the country's large ethanol sector that traditionally absorbs more than half of the annual sugarcane production should provide a stimulus to cane production expansion, contributing to

Figure 34. **World production to exceed consumption in most years**



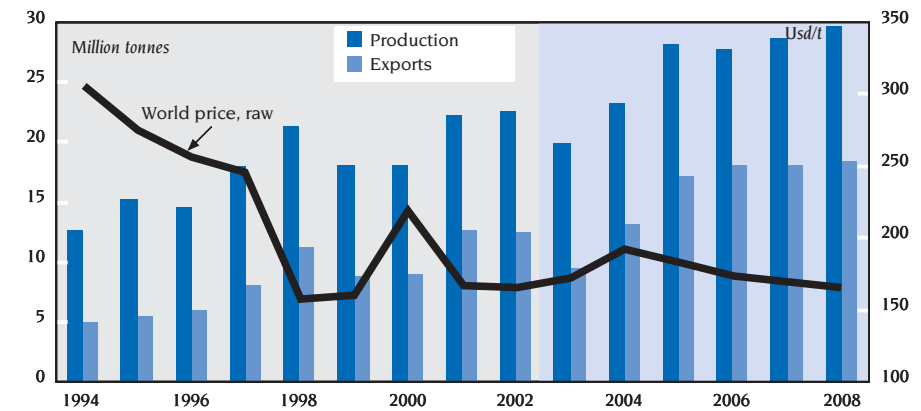
Note: Data are in raw sugar equivalent.
Source: OECD Secretariat.

increased sugar availability over the Outlook period. In a deregulated market, this alternative outlet for sugarcane use provides an element of stability to Brazilian producers' incomes with the choice of end use dictated mainly by relative returns for sugar and ethanol. The projected increase in supply in Brazil amounts to an additional 8 million tonnes of sugar by 2008. This is expected to be sufficient to meet both increased domestic sugar demand and exports of raw and white sugar, and should effectively curb any (persistent) increase in world sugar prices over the medium term.

Exports of white and raw sugar are now concentrated in a few countries

World sugar trade has become concentrated into the hands of a few major producing countries on the export side. Brazil and the European Union, and to a lesser extent, Thailand are the key exporters of white or refined sugar. Brazil and Australia together with Thailand and Cuba account for the major share of the trade in raw sugar. Of these countries, the European Union is the only one requiring the use of export subsidies to remain competitive on world markets (even though more than 50% is currently exported without subsidies). These are applied to foreign sales of sugar produced under A and B quota within the Community and which is subject to URAA subsidy bindings, as well as to re-exports, after refining, of raw sugar imported under preferential arrangements from ACP countries (of around 1.3 million tonnes). A number of other export competition policies are also in place ranging from the single trading desk for exports in Australia, the Queensland Sugar Corporation, to the use of transport and infrastructure subsidies as an aid to sugar exports in India. Little change is expected in the country composition of sugar trade over the medium term, other than the larger role of Brazil in both the raw and white sugar markets in coming years (see Figure 35). Exports of raw sugar from Brazil are projected to increase more than for white sugar in response to a narrowing of the price differential between raw and white sugar (when measured in domestic currency) over the Outlook. Mexican production and exports of sugar are also expected to show some growth over the medium term and to be directed primarily to the higher priced United States market as trade barriers are lowered under NAFTA.

Figure 35. **Brazil's sugar production and total exports to expand**



Note: Data are in raw sugar equivalent.
Source: OECD Secretariat.

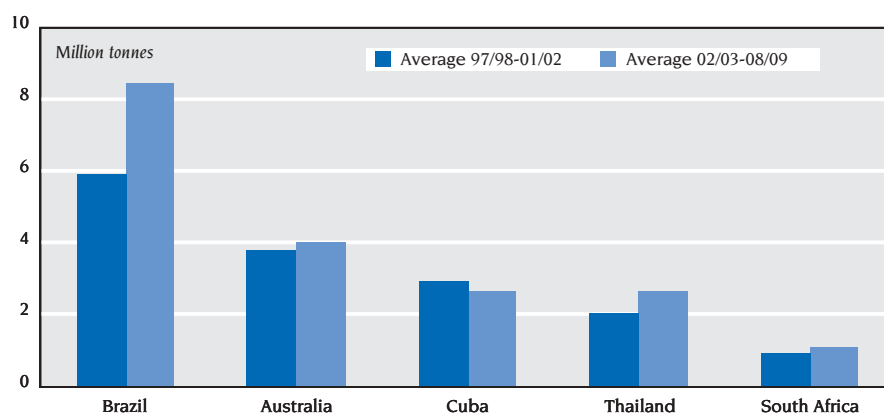
Production in other low cost exporters to expand, as productivity is improved

World price developments largely dictate events in the other main exporters which are expected to rely heavily on the international market over the medium term. Australian production is projected to slow initially, as a consequence of drought and in response to the recent period of historically low world prices and then to grow strongly over the remainder of the projection period as industry productivity improves. Thailand's production is also expected to follow a somewhat similar pattern with production slowing initially after a bumper harvest in 2002-03 and then start to accelerate with rising exports towards the close of the period; albeit at a lower growth rate than in the last decade. Sugar production in Cuba is likely to continue to contract in the first half of the Outlook period, as much needed rationalisation of processing capacity proceeds, but then to undergo some expansion in latter years as industry costs are reduced and productivity improves. India is another sugar producer with the potential to increase production over the medium term. Most production has historically been directed towards domestic consumption, although with growing stocks some of this sugar will likely be increasingly available for export destinations (as raw, refined and plantation whites), whenever prices are sufficiently rewarding (see Figure 36).

Imports of raw sugar are more concentrated than for white sugar

Imports of raw sugar remain concentrated in a small group of countries comprising Russia, the largest market, followed by the European Union and the United States. Russia's imports are projected to grow only slowly as domestic production increases aided, in part, by increased barriers to trade. Higher imports are anticipated in both the United States and European Union over the last years of the projection period as import barriers are reduced for sugar from certain country origins. Countries such as Canada, Japan, Korea and Indonesia are expected to remain major sugar importers. Imports are also projected to increase in China beyond recent levels. As part of its accession agreement to the WTO, China established a TRQ for sugar imports, which remains under-filled in the baseline. Box 4 illustrates the likely market implications if China's TRQ were in fact to be filled. As additional refining capacity comes on stream in a number of countries in North Africa and the

Figure 36. **Larger raw sugar exports expected from low cost producers**



Source: OECD Secretariat.

Middle East, this is likely to lead to some increase in demand for raw sugar as well as creating potential supplies of refined sugar for re-export. World imports of white sugar also increase over the Outlook period, but they are more widely diffused over a large group of countries. Global and regional consumption trends are expected to be supportive of an expanding import requirement for raw and white sugar over the medium term.

Consumption to continue to expand

Steady consumption growth is a main driver, helping to reduce huge stocks

Steady and consistent year on year growth in sugar consumption remains a fundamental driver of the world sugar economy over the projection period. Global sugar consumption is expected to increase by around 17 million tonnes over the period to 2008 to reach just over 155 million tonnes. This represents an increase in consumption of about 1.9% per annum, little changed from the growth rate of the last decade. The bulk of consumption growth is expected to take place in developing countries, which will account for nearly 75% of the projected disappearances of sugar. Population growth and rising per capita incomes have been the main factors sustaining the global increase in sugar consumption in developing countries with Asia the leading regional growth centre followed by Latin America. Within these regions there remains wide variation in per capita sugar consumption levels between countries, ranging from nearly 60 kg per person in Cuba to just over 8 kg per person in China in 2008. In contrast, many OECD countries are considered to be mature markets showing little or no growth potential over the Outlook period. Per capita consumption patterns for sugar are illustrated in the Statistical Annex, table 41.

An additional factor affecting sugar consumption is the availability of other caloric sweeteners, such as High Fructose Corn Syrup (HFCS) derived from maize which has a large share of the US market, and non-caloric or artificial sweeteners. China is a case in point in that non-caloric sweeteners, mainly saccharin, are an important competitor to sugar and help to explain the low per capita sugar consumption of the country. While world

consumption of sugar is set to increase, its share of an expanding global sweeteners market is likely to fall as the consumption of the other, cheaper, sweeteners continues to grow.

Global stocks to consumption ratio for sugar to decline as production slows in some countries

Another indication of a structural imbalance in the world sugar market is provided by the size of world sugar stocks. At the outset of the projection period, total sugar stocks represent a massive 49% of global consumption. With the projected slowdown in global sugar production combined with faster consumption growth in the early years of the Outlook, the sugar stocks-to-use ratio is set to decline to around 44% in 2008-09 and 44% by 2008-09. A large part of these stocks continue to be held in countries where policies permit only a very limited degree of transmission from world to domestic prices. For instance, sugar stocks increase strongly in the United States as production is maintained and import volumes increase. Closing sugar stocks normally represent around 10-12% of consumption in the European Union due to the operation of the declassification mechanism in the CMO sugar regime. This policy operates to reduce EU sugar production, in the context of existing import commitments and the need to avoid excessive stocks, by temporarily reducing production quotas whenever exports are expected to exceed the WTO subsidy limits. However, in the baseline projections it is assumed that these temporarily adjustments in EU production are not sufficient to offset the growth in imports. As a consequence, closing stocks of sugar in the European Union rise in the later years of the Outlook as supplies of sugar increase, while consumption and subsidised exports are constrained by domestic support policies and URAA commitments. Stocks held by the rest of the world decline slightly over the Outlook period as imports of sugar rise to cover the shortfall in production in meeting increasing consumption requirements.

Key issues and uncertainties

Does Brazil's role imply continuing low world sugar prices?

Brazilian exports will partly depend on ethanol demand

Brazil has rapidly become the dominant exporter in the world sugar market with large shipments of both raw and white sugar that have a considerable influence on the level of world prices. A key consideration in determining the volume of sugar cane processed into sugar and available for exports, has been the domestic demand for ethanol in Brazil. In this respect, the world sugar market is seen as the residual outlet for sugar cane not required to satisfy Brazil's ethanol and domestic sugar demand. However, with the on-going devaluation of the Brazilian real, returns from sugar exports have increased, when measured in domestic currency terms, even with low world sugar prices. This has made it more rewarding to increase sugar production and exports to the world market, and partly explains the projected expansion in Brazilian exports in the baseline projections. The other consideration is the likely future demand for ethanol. While domestic demand partly depends on future developments in oil prices, and blending ratios in fuel production, there may also be an opportunity for Brazil to develop an export market for ethanol. The relative profitability of the ethanol/sugar complex will determine how much sugarcane is directed to sugar production and exports in coming years.

Existing trade agreements to pressure EU and US domestic policies?

Trade commitments may have sown the seeds for further sugar reforms

In March 2001 the European Union extended its existing Generalised System of Preferences (GSP) to give duty free access to all exports except arms, known as the Everything But Arms (EBA) initiative from least developed countries (LLDCs) with some exceptions for sensitive products, including sugar. For sugar, free access is being phased in by a system of annual duty free quotas that increase from 74 000 tonnes in 2001-02 to 197 000 tonnes in 2008-09. For imports in excess of these volumes, duty reductions are being phased in from 2006 to 2009. Any future review of the treatment of sugar in the EBA over the transition period is not considered in this Outlook. In being able to export sugar under these arrangements, LLDC countries will benefit from the Union's high domestic sugar prices that are well above world market levels. These countries include, for instance, those ACP countries which currently supply sugar to the EU under the longstanding ACP Sugar Protocol or under the temporary Special Preferential Sugar (SPS) arrangements. During the phase-in period to duty-free and unrestricted entry in 2009, there is expected to be no impact of the EBA on the EU sugar market in terms of sugar market balance or budget as it will gradually displace the SPS arrangements. However over the longer term, if EU internal prices remain significantly above those on the world market, the export orientated sugar producers in the least developed countries will likely expand production and exports to the Union. According to Commission estimates, longer term LLDCs sugar exports could reach as much as 2.7 million tonnes. In the light of its existing WTO commitments, the European Union could find it difficult to accommodate this level of trade within its existing sugar policy framework. Possible options include further cuts in production quotas and/or internal prices which would simultaneously reduce EU sugar production and make the European Union a less attractive destination for developing country exports.

As part of the NAFTA agreement, the United States is to phase out the existing tariff on raw and refined sugar imports from Mexico over a transition period to duty-free and unrestricted sugar trade in 2008. Once the tariff is eliminated, the United States and Mexico will effectively become one combined sugar and sweetener market. The high internal prices for sugar in the United States that are well above world levels can be expected to provide an incentive for increased production and exports from Mexico. Any large increase in imports from Mexico would cause the US price to decline or else increase the likelihood of forfeitures to the Commodity Credit Corporation, if the sugar loan program and current loan rates are maintained. Whether or not the US sugar policy could be maintained unchanged in the light of increasing stocks of sugar then becomes a moot point. Possible options would be to lower loan rates and internal prices to reduce the incentives for domestic sugar production and at the same time make the US market a less attractive destination for Mexican (and for that matter other third country) exports. Other regional trade agreements such as the Free Trade of the Americas Agreement (FTAA) which is currently under negotiation between the countries of North and South America with completion of negotiations scheduled for 2005, may also have an impact on the US sugar programme over the longer term.

New US FSRI Act reverses some modest earlier reforms for sugar

US Farm Act maintains high support and protection

The US sugar program was extended through 2007-08 under the new farm legislation with the same support levels that have applied for years. In addition, some of the reforms introduced by the FAIR Act have been reversed. These included removal of the forfeiture penalty for sugar surrendered to the CCC in repayment of the sugar loan; elimination of marketing assessments; an option exercisable by USDA for the exemption of sugar loans from the one percent interest rate surcharge applicable to other commodities, and a provision that the sugar program is meant to be “no-cost”, to the maximum extent possible. The legislation also authorised a pre-planting payment-in-kind programme to idle planting acreage, if required, and reinstates marketing allotments. The effect has been to maintain support and protection to the domestic sugar industry. However this does not imply a trouble free future for the industry as there are challenges looming from rising imports under NAFTA, slowing domestic demand for sugar and (potentially) on the trade liberalisation front in the WTO.

Uncertainties

The sugar projections reported in this chapter are conditioned on a number of assumptions. Important amongst these is the assumption of a constant policy environment. However, there are a number of prospective policy developments the outcome of which could have an important impact on sugar markets. These include the scheduled review of the Common Market Organisation for sugar in the European Union, the extension of the CMO arrangements to the 10 new member states following EU enlargement; and also the outcome of the Doha multilateral trade negotiations.

Because a large share of sugar production and trade takes place outside the OECD area, future developments in the NMEs are an important source of uncertainty. Apart from Brazil, developments taking place in some other countries could also be important for the outlook. Russia as the world's largest sugar importer has imposed a TRQ to regulate imports and to encourage domestic beet production. Enforcement of the TRQ quota volume will slow the growth of imports into this important sugar market. China is potentially a larger import market for raw and refined sugar than currently projected, given its low per capita consumption rates. The Chinese government has indicated an objective for imports to account for 20% of consumption and to control the growth of artificial sweeteners, particularly saccharin. The market impacts of increased imports by China are examined in Box 4. Finally, weather-related production shortfalls in major producing countries, or other market events, remain a possibility for improving the world sugar balance and contributing to higher prices in particular years.

Reference

International Sugar Organisation, “Key Drivers of the World Sugar Market”, MECAS(02)08, 3 May 2002.

Box 4. **China: a white knight for the world sugar market?**

With sugar demand in developing countries traditionally associated with population growth and rising incomes, it should come as no surprise that China as the world's most populous country and fastest growing economy should be seen by sugar exporters as a possible saviour for the depressed international sugar market. In fact China is already amongst the top sugar and sweetener consuming countries with an estimated consumption of over 9.9 million tonnes in 2002. China is also an important sugar cane (which represents the largest share of production) and sugar beet producer. Chinese sugar consumption is estimated at around 7 kg per capita, which is low, by international standards. While this figure may give some indication of the potential for higher consumption, it may not be completely representative of the underlying consumption situation. This is due to the fact that consumption of sugar is affected by the population distribution between rural and urban areas. Rural per capita consumption is low in China, at an estimated 2.5 kg per capita. Sugar thus plays a small part in the diets of the rural population, and compares to an estimated 13 kg per capita for urban consumption. In addition, there is widespread use of artificial sweeteners, particularly saccharin, throughout China.*

China became a full member of the WTO in December 2001. As part of its WTO accession agreement, China made a commitment to implement a TRQ for sugar (covering both raw and refined sugar) amounting to 1 764 million tonnes in 2002, rising to 1 852 mil. tonnes during 2003 and then 1 945 million tonnes in 2004. The import duty on these tonnages was set at 20% for raw sugar and 30% for refined sugar, for the first two years falling to 15% in 2004. The over-quota tariff rate was set at 75% (for both raw and refined sugar), falling to 50% by 2004. It is understood that future commitments will be subject to further negotiations.

In the baseline projections, it is assumed that rising demand for sugar and stable production should result in a net import requirement for sugar by China. Although total sugar imports are projected to rise over the Outlook period, they, nevertheless, remain below the TRQ level in 2008. The Secretariat's sugar model is used to assess the effects on world markets of increased imports of sugar by China over the projection period. This analysis assumes that the TRQ import quantities become binding. In other words, that total sugar imports rise to 1 852 million tonnes in 2003 and then to 1 945 million tonnes in 2004 and remain at this level in following years to 2008. The bulk of sugar imports are assumed to be raw sugar with the relative shares of raw and refined sugar held constant over the Outlook period at their ratio in recent years (2000-02).

Results of analyses

The results of the scenario are presented in terms of the percentage change relative to the baseline projection outcomes.

TRQ is filled

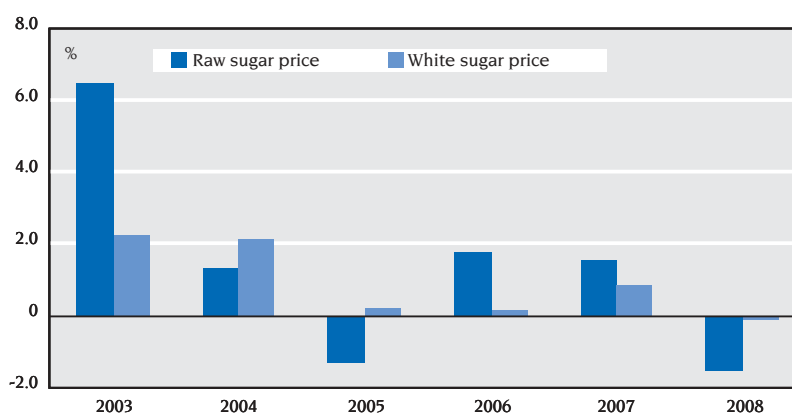
On the assumption that China's TRQ for sugar is filled, this leads to a surge in sugar imports in 2003-04 with world raw sugar prices (in nominal terms) rising by nearly 7% while those of white sugar increase by just over 2%, when compared to the baseline results (see Figure 37). This surge is followed by a slower expansion to 2004 and thereafter declining imports into China, so the impact on world markets is uneven and leads to an over-adjustment in the early years. As shown in the Table 5, the price surge is followed by smaller price changes in following years as world production and consumption adjust and the gap between the TRQ volume and the level of imports projected in the baseline for China narrows. The higher world prices lead to a maximum 1.3% increase in world production and 0.6% increase in consumption in 2004. Global stocks are initially drawn down and then expand by the end of the Outlook period as production increases. Exports in the main exporting countries, led by Brazil, the European Union, Australia, Thailand and

* Toby Cohen, China the Saviour of the World Market?, C Czarnikow Sugar Limited, FO Licht 6th European Sugar Conference, 2002.

Box 4. **China: a white knight for the world sugar market?** (cont.)

Cuba, expand to supply the additional Chinese imports. The analysis reveals that – in view of still large supply potential in certain exporting countries – there is no large, sustained increase in world prices of raw and white sugar as a result of higher imports by China. Although the long-run effect (after the initial surge is resolved) is likely to be slightly higher world prices, despite lower prices in the later years of the Outlook. The extent to which China meets her TRQ commitments is likely to be determined mainly by domestic requirements in the light of adjustments that take place in production and consumption as well as the continuing availability of artificial sweeteners, such as saccharin. Finally, quota allocation in China is another issue that could affect the extent of quota fill as it is understood that only 30% of the TRQ is currently allocated to private traders.

Figure 37. **Impact on sugar world prices of an increase of China imports to TRQ level**



Source: OECD Secretariat.

Table 5. **Effects of sugar imports by China at the TRQ level, relative to the baseline (%)**

	2003	2004	2005	2006	2007	2008
Change in world price						
Raw sugar price	6.5	1.3	-1.3	1.8	1.5	-1.5
White sugar price	2.2	2.1	0.2	0.1	0.8	-0.1
Change on the world market						
Production	0.0	0.3	1.3	0.3	-0.1	0.4
Consumption	0.6	0.3	0.4	0.3	0.1	0.0
Closing stocks	-1.3	-1.3	0.7	0.7	0.1	1.0
Change in China market						
Production	0.0	0.0	0.0	1.6	0.3	-0.3
Consumption	10.7	6.5	4.9	4.7	2.7	-0.3
Imports	60.5	54.7	45.7	28.5	18.2	5.1
Exports	1.7	1.8	0.5	3.2	1.6	-0.4
Closing stocks	-10.4	-9.7	-7.3	-5.6	-4.9	-1.6

Source: OECD Secretariat.

METHODOLOGY

The projections presented and analysed in this document are the result of a process that brings together information from member countries and a number of other sources. Consistency in this process is ensured by the use of the OECD's *Aglink* model. A large amount of expert judgement, however, is applied at various stages of the Outlook process. The OECD *Agricultural Outlook* presents a single assessment, judged by the Secretariat to be plausible given the underlying assumptions, the procedure of information exchange outlined below and the information to which it had access as of 25 April 2003.

The starting point of the outlook process is the reply by member countries (and some non-member Economies) to an annual questionnaire circulated by the Secretariat at mid-year. Through these questionnaires, the Secretariat obtains information from member countries on future market developments and on the evolution of agricultural policies in OECD countries. This information is supplemented by that obtained from other sources, such as the FAO, the World Bank or the IMF, to establish a view of the main forces determining market developments in the non-member Economies. This part of the process is aimed at creating a first insight into possible market developments and at establishing the key assumptions which condition the Outlook. The main economic and policy assumptions are indicated in the chapter on Economic and Policy Assumptions, and in specific tables of the present report. In a change to the previous procedure, the assumed medium term developments in main macroeconomic variables are based on December 2002 projections of the OECD's Economic Department. While sometimes different from macroeconomic assumptions provided through the questionnaire replies, it was judged preferable to use one consistent source for these variables.

As a next step, the OECD's *Aglink* model is used to facilitate a consistent integration of this information and to derive an initial set of global market projections (baseline). *Aglink* is a dynamic economic and policy specific model of major temperate-zone agricultural commodity markets. It currently consists of modules for ten main agricultural producing and trading countries, or groups of countries, within the OECD, a complete agricultural sector module for Argentina, Russia, China and Brazil (added this year) and a beef sector module for other MERCOSUR countries. A standalone sugar model has also been developed (and separate from the *Aglink* model at this stage), to produce a set of medium baseline projections for world and OECD sugar markets, covering raw and white or refined sugar. The modules are all developed by the Secretariat in conjunction with experts in member

countries and non-member Economies and, in some cases, with assistance from other national administrations. The initial baseline results are compared with those obtained from the questionnaire replies and any emerging issues are discussed in bilateral exchanges with country experts. On the basis of these discussions and of updated information, a second baseline is produced.

In addition to quantities produced, consumed and traded, the baseline also includes projections for nominal prices for the commodities concerned. Unless otherwise stated, prices referred to in the text are also in nominal terms.

The information generated is used to prepare reports presenting outlook assessments for cereals, oilseeds, meats, dairy products and sugar. These reports are discussed at the annual meetings of the Working Group on Meat and Dairy Products and the Working Group on Cereals, Animal Feeds and Sugar of the OECD Committee for Agriculture. The outlook discussions in the Working Groups focus on key issues emerging from the replies to the questionnaires and any adjustments which have to be made to member country projections in order to derive a coherent global baseline. Subsequent to the meetings of the commodity Working Groups and final data revisions, a revised baseline is produced and its sensitivity to major uncertainties evaluated. The revised projections form the basis of a draft of the present OECD *Agricultural Outlook* publication, which is normally discussed by the Working Party on Agricultural Policies and Markets of the Committee for Agriculture, prior to publication.

The above procedure implies that the baseline projections presented in this report are heavily conditioned by those developed by member countries and participating non-member Economies. It also reconciles inconsistencies between individual country projections through the use of a formal modelling framework and highlights the sensitivity of the outcomes to key assumptions. The review process ensures that the judgement of country experts is applied to the projections and related analyses. However, the final responsibility for the projections and their interpretation rests with the OECD Secretariat.

REFERENCES

Argentina

Wheat production, export, price	SAGPYA, Reply to OECD medium term questionnaire
Coarse grains production, export, stocks and price	(Oct. 2002), Buenos Aires, Argentina.
Oilseed prices	USDA (January 2003), <i>PS&D Database</i> , Washington DC.
Oilseeds production, import export crush	
Vegetable oils production, import export	
Oilseed meals production, import export	
Rice production, exports, stocks and price	
Milk production, liquid sales, industrial use	SAGPYA, Reply to OECD medium term questionnaire
Milk, butter, cheese, SMP and WMP prices	(Oct. 2002), Buenos Aires, Argentina.
Butter production, export	FAO, FAOSTAT PC database, Rome (2002).
Cheese production, export	
SMP production, export	
WMP production, import export	
Whey powder, net trade	
Beef balance	SAGPYA, Reply to OECD medium term questionnaire
Poultry balance	(Oct. 2002), Buenos Aires, Argentina.
Pork balance	
Egg balance	
Pigmeat, poultry and beef meat price	EAP, Buenos Aires, Argentina.
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Australia

Wheat production, feed use, trade, price	ABARE, <i>Australian Commodity Statistics Bulletin</i> 2002, Canberra.
Coarse grain production, feed use, trade, price	
Oilseed production, crush, trade, price	
Oilseed meal price	
Vegetable oils price	
Beef production, trade, price	
Pig meat production, trade, prices	
Poultry meat production, trade, prices	
Sheep meat production, trade, prices	
Milk production, liquid sales, industrial use, prices	
Butter production, trade, price	
Cheese production, trade, price	
SMP production, trade, price	
WMP production, trade	
Whey powder, net trade	ABARE, Reply to OECD medium term questionnaire, Canberra
	(August 2002).
Oilseed meals production, imports, feed use	USDA (November 2002), <i>PS&D Database</i> , Washington DC.
Vegetable oils production, imports	
Rice, production, exports	
Casein, net trade	
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Brazil

Wheat utilisation, supply, price	Ministry of Agriculture, Reply to OECD medium term questionnaire, Brasilia (November 2002).
Coarse grains (except buckwheat, rye and other cereals) utilisation, supply, price	
Cotton, supply, price	
Soybean seed, meal and oil, utilisation, supply	
Sunflower, utilisation, consumption	
Beef utilisation, supply, price	
Pig meat utilisation, supply, prices	
Poultry meat utilisation, supply, prices	
Sheep meat utilisation, supply, prices	
Milk utilisation, liquid sales, industrial use, prices	
Butter utilisation, supply, price	
Cheese utilisation, supply, price	
SMP utilisation, supply, price	
WMP utilisation, supply, price	
Buckwheat utilisation, supply	FAO, FAOSTAT PC <i>database</i> , Rome (2002).
Other cereals utilisation, supply	
Oilseeds, meal and oil prices	
Rapeseed , production, supply	
Sunflower, trade	
Palm oil, utilisation, supply	
Rye, utilisation, supply	USDA (2002), <i>PS&D Database</i> , Washington DC.

Canada

Wheat production, exports, stocks, price	Agriculture and Agri-Food Canada (January 2003), <i>CANSIM Database</i> , Ottawa.
Coarse grain production, exports, stocks, price	
Oilseed production, crush, exports, feed use, price	
Oilseed meal production, imports, exports, price	
Vegetable oils production, imports, exports, price	
Beef production, imports, exports, price	
Pig meat production, exports, price	
Poultry meat production, imports, price	
Sheep meat production, imports, price	
Milk production, liquid sales, industrial use, prices, target return	
Dairy subsidy	
Butter production, exports, price, support price	
Cheese production, imports	
SMP production, exports, price	
Whey powder net trade	FAO, FAOSTAT PC <i>database</i> , Rome (2002).
Consumption of all products	Calculated as production + imports – exports – change in stocks.

China

Wheat balance, price	USDA China team, Washington DC.
Coarse grains price	
Rice balance, price	
Oilseed balance, price	
Beef balance, price	
Pig meat balance, price	
Poultry balance, price	
Milk price	
Coarse grains production, imports, exports, stocks	
Soybean oil balance	
Rapeseed meal balance	
Rapeseed oil balance	
Palm oil balance	USDA (January 2003), PS&D <i>Database</i> , Washington DC.
Milk production, industrial use, other use	FAO, FAOSTAT PC <i>database</i> , Rome (2002).
Whey powder net trade	
Butter production, imports, exports	
Cheese production, imports, exports	
SMP imports	
WMP imports, exports	
Consumption of all products	Calculated as production + imports – exports – change in stocks.

European Union

Wheat price	EUROSTAT (2002), OECD PSE <i>database</i> (2002), Meat and Livestock Commission, European Market survey, 2002.
Coarse grain price	
Rice price	
Poultry meat price	
Sheep meat price	
Milk price	
Pig meat price	Meat and Livestock Commission, <i>European Market survey</i> , 2002.
Oilseed price	ISTA Mielke GmbH, <i>Oil World Annual</i> 2002, Hamburg.
Oilseed meal price	
Vegetable oil price	
Wheat production, exports, stocks	EU Commission, Reply to OECD medium term questionnaire, Brussels (January 2003).
Coarse grains production, exports, stocks	
Rice production, imports, stocks	
Oilseeds production	
Beef and veal production, exports, imports, stocks, male bovine premium	
Pig meat production, exports, imports, stocks	
Poultry meat production, exports, imports, stocks	
Sheep meat production, imports	
Butter production, imports, exports, stocks	
Cheese production, imports, exports, stocks	
SMP production, imports, exports, stocks	
Oilseed crush, imports, stocks	ISTA Mielke GmbH, <i>Oil World Statistics</i> 2002, Hamburg.
Oilseed meals production, imports, exports, stocks	
Vegetable oils production, imports, exports, stocks	
Butter price	Agra Europe (2002), <i>Milk Products</i> , London.
Cheese price	
SMP price	
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Hungary

Wheat production, exports, price	USDA (October/November 2002), <i>PS&D Database</i> , Washington DC.
Coarse grains production, exports, stocks, price	USDA (October/November 2002), <i>PS&D Database</i> , Washington DC.
Oilseed production, crush, exports, price	Reply to OECD medium term questionnaire (October 2002), Budapest.
Oilseed meals production, imports, price	Reply to OECD medium term questionnaire (October 2002), Budapest.
Vegetable oils production, imports	
Beef and veal production and price	
Pig meat production, exports, price	
Poultry meat production, imports, price	
Butter production, exports, price	
Cheese production, exports, price	
SMP production	
Milk production, liquid sales, industrial use, price	FAO, <i>FAOSTAT PC database</i> , Rome (2002).
Whey Powder net trade	
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Japan

Wheat price	MAFF, <i>Monthly Statistics of Agriculture Forestry and Fisheries (various issues)</i> – Japan, Tokyo.
Coarse grain price	
Oilseed price	
Oilseed meal price	
Oilseed meal imports	
Wheat production, imports, stocks	MAFF, <i>Food balance sheet</i> , Japan, Tokyo.
Coarse grain production, imports, stocks	
Rice production, imports, stocks	USDA <i>PS&D Database</i> , Washington DC.
Oilseed production, crush, imports, stocks	
Oilseed meal production	
Vegetable oil production, imports, stocks	
Beef production, imports, price	MAFF, <i>Monthly Statistics of Agriculture Forestry and Fisheries (various issues)</i> – Japan, Tokyo.
Pig meat production, imports, price	ALIC, <i>Monthly Statistics (various issues)</i> , Japan, Tokyo.
Sheepmeat imports	USDA <i>PS&D Database</i> , Washington DC.
Poultry meat production, imports, price	
Milk production, fluid sales, industrial use, price, support price, transaction price, deficiency payment	
Butter production, imports, price, stabilisation price	
Cheese production, imports, price	
SMP production, imports, price, stabilisation price	
WMP production	
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Korea

Wheat price	Replies to OECD medium term questionnaire, Seoul, (September 2002).
Coarse grains price	
Rice price	
Oilseed price	
Wheat imports	MAFF, Statistical Yearbook (2002) and FAO, FAOSTAT PC <i>database</i> , Rome (2002).
Coarse grains production, imports, stocks	
Rice production, imports, stocks	
Oilseed production, crush, imports	
Oilseed meals production, imports	
Vegetable oils production, imports	
Beef production, imports, price	Replies to OECD medium term questionnaire, Seoul, (September 2002).
Pig meat production, net trade, price	
Poultry meat production, imports, price	
Milk production, liquid sales, industrial use	
Butter production, imports	
Cheese production, imports	
SMP production, imports	
Whey Powder net trade	FAO, FAOSTAT PC <i>database</i> , Rome (2002).
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Mexico

Wheat production, price	SAGAR, Reply to OECD medium term questionnaire (August 2002), Mexico City. CEA (Centro de Esta distica Agropecuaria), SAGAR, Mexico City. USDA (January 2003), PS&D <i>Database</i> , Washington DC and FAS reports.
Coarse grains production, price	
Oilseed production, price	
Beef production, price	
Pig meat production, price	
Poultry meat production, price	
Sheep meat production, price	
Rice production, export, stocks and price	
Butter production	
SMP production	
Wheat support price	SAGAR (2002), Reply to OECD medium term questionnaire (August 2002), Mexico City.
Maize support price	
Cereal income payment	
Oilseed support price	SAGAR, <i>Medium Term Questionnaire Reply</i> (August 2002), Mexico City.
Soyabean income payment	
Milk production, price	
Milk liquid sales, industrial use	
Butter price	
Cheese price	
SMP price	
WMP price	
Consumption of all products	Calculated as production + imports – exports – change in stocks.

New Zealand

Wheat production, imports, price	MAF, Reply to OECD Questionnaire, Wellington,
Coarse grain production, price	(September 2002).
Beef production, exports, price	
Pig meat production, imports, price	
Poultry meat production, price	
Sheep meat production, exports, prices	
Milk production, liquid sales, industrial use, prices	
Butter production, exports, price	
Cheese production, exports, price	
SMP production, exports, price	
WMP production, consumption, exports, price	
Casein price	
Wheat feed use	
Coarse grain imports, feed use	
Butter consumption	
SMP consumption	
Whey powder net trade	FAO, FAOSTAT PC <i>database</i> , Rome (2002).
Casein, exports	USDA (January 2003), PS&D FAO.
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Poland

Wheat production, imports	IERIGZ(86-96).
Coarse grains production, imports	USDA (September/October 2002), PS&D <i>Database</i> ,
Oilseed production, crush, imports	Washington DC.
Oilseed meals production, imports	Reply to OECD medium term questionnaire Warsaw,
Vegetable oils production, imports	(September 2002).
Pig meat production, exports, price	
Poultry meat production, imports, price	
Cheese exports	
Milk production, on farm use liquid sales, industrial use, price	WTO (81-84), GUS (88-90), IERIGZ (91-96), Reply to OECD medium term questionnaire Warsaw, (September 2002).
Butter production, exports, imports, price	
Cheese price	
SMP production, exports price	
Casein exports	USDA (September/October 2002), PS&D <i>Database</i> ,
	Washington DC.
Cheese production	GUS (89-95), IERIGZ (96), FAO FAOSTAT PC <i>Database</i> ,
Whey powder net trade	Rome (2002).
Wheat price	GUS (86-96).
Coarse grains price	Reply to OECD medium term questionnaire Warsaw,
Oilseed price	(September 2002).
Oilseed meals price	
Vegetable oils price	
Beef production, price	
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Russia

Wheat production, imports, exports, ending stocks	USDA (January 2003), <i>PS&D Database</i> , Washington DC.
Coarse grains production, imports, exports, ending stocks	
Oilseed production, crush, imports, exports	
Oilseed meals production, imports, exports	
Vegetable oils production, imports, exports	
Rice production, imports, exports	
Beef production, imports	FAO, <i>FAOSTAT PC database</i> (2002), Rome.
Pig meat production, imports	
Poultry meat production, imports	USDA (January 2003), <i>PS&D Database</i> , Washington DC.
Milk production	FAO, <i>FAOSTAT PC database</i> (2002), Rome.
Butter production, imports	USDA (January 2003), <i>PS&D Database</i> , Washington DC.
Cheese production, imports	
SMP production, imports, exports	
WMP production, imports	
Consumption of wheat, coarse grain, rice, oilseeds, oilseed meals, vegetable oils, beef, pig meat, poultry meat, sheep meat, butter, cheese, SMP and WMP	Calculated as production – imports + exports – change in stocks.
Prices	OECD <i>PSE database</i> (2003).

United States

Wheat production, imports, exports, stocks, price, EEP payment	USDA, <i>Wheat Outlook</i> (January 2003), Washington DC.
Coarse grains production, exports and price	USDA, <i>Feed Outlook</i> (January 2003), Washington DC.
Rice production, imports, exports, stocks and price	USDA, <i>Rice Outlook</i> (January 2003), Washington DC.
Beef production, imports, exports, price	USDA, <i>Livestock, Dairy and Poultry</i> (January 2003), Washington DC.
Pig meat production, imports, exports, price	
Poultry meat production, exports, price	
Sheep meat production, imports, price	
Milk production, liquid sales, industrial use, support price, prices	USDA, <i>Livestock, Dairy and Poultry</i> (January 2003), Washington DC.
Butter production, exports, stocks, price	
Cheese production, imports, exports, price	
SMP production, exports, stocks, price	
WMP production, exports, stocks	USDA <i>Dairy Yearbook</i> (2002), Washington DC.
Whey powder production, exports, price	
Casein imports	USDA (January 2003), <i>PS&D Database</i> , Washington DC.
Oilseed production, crush, exports, and price	USDA, <i>Oil Crops Outlook</i> (January 2003), Washington DC.
Oilseed meals production, imports, exports and price	
Vegetable oils production, imports, exports, stocks and price	
Wheat target price, loan rate, ARP area, CRP area, other land idled	USDA, <i>Agricultural Outlook</i> (2003), Washington DC.
Coarse grains ARP area, CRP area, other land idled	
Maize target price, loan rate	
Soyabean loan rate, CRP area	
Consumption of all products	Calculated as production + imports – exports – change in stocks.

Other OECD

Wheat production, consumption	Replies to OECD Questionnaires (September 2002). USDA (January 2003), PS&D <i>Database</i> , Washington DC.
Coarse grains production, consumption	
Oilseed production, crush, consumption	
Oilseed meals production, consumption	
Vegetable oils production, consumption	
Rice production, consumption	
Beef production, consumption	Replies to OECD Questionnaires (September 2002). USDA (January 2003), PS&D <i>Database</i> , Washington DC.
Pig meat production, consumption	
Poultry meat production, consumption	
Sheep meat production, consumption	
Milk production, on farm use, liquid sales, industrial use	Replies to OECD Questionnaires (September 2002).
Butter production, consumption	
Cheese production, consumption	
SMP production, consumption	
WMP production, consumption	
Net trade in wheat, coarse grain, rice, oilseeds, oilseed meals, vegetable oils, beef, pig meat, poultry meat, sheep meat, butter, cheese, SMP and WMP	Calculated as production – consumption – change in stocks.

OECD

Production of wheat, coarse grains, rice, oilseeds, oilseed meals, vegetable oils, butter, cheese, SMP, WMP	Calculated as Australia + Canada + EU + Japan + New Zealand + United States + Mexico + Korea + Poland + Hungary + other OECD.
Consumption of wheat, coarse grains, rice, oilseeds, oilseed meals, vegetable oils, butter, cheese, SMP, whole milk powder	
Imports of butter, cheese, SMP, WMP	
Exports of butter, cheese, SMP, WMP	
Stocks of wheat, coarse grains, rice, oilseeds, oilseed meals, vegetable oils, butter, cheese, SMP	
Feed use of wheat, coarse grains	
Oilseed crush	

Rest of World

Wheat production, stocks	USDA (December 2002), PS&D <i>Database</i> , Washington DC.
Coarse grains production, stocks	
Rice production, stocks	
Oilseed production, crush, stocks	
Oilseed meals production, stocks	
Vegetable oils production, stocks	
Net trade of wheat, coarse grains, rice, oilseeds, oilseed meals, vegetable oils, butter, cheese, SMP, WMP, whey powder	Calculated as – net trade of (OECD + RUS + Other Independent States + Brazil + China + Argentina)
Milk production, industrial use, other uses	Calculated as World – (OECD + RUS + Other Independent States + Argentina + Brazil + China).
Butter production	
Cheese production	
SMP production	
WMP production	
Consumption of all products	Calculated as production – net trade – change in stocks.

Chinese Taipei, India

Rice production, stocks

USDA (December 2002) *PS&D Database*, Washington DC.**Indonesia**

Rice production, imports, stocks

Thailand

Rice production, exports, stocks

Chinese Taipei, India, Indonesia, Thailand

Rice price

University of Arkansas rice database (2002), Fayetteville, USA.
USDA *FAS reports* (various issues), Washington DC.
IRRI *World Rice Statistics* (various issues), Makati, Philippines.

Consumption of all products

Calculated as production – net trade – change in stocks.

OIS (Other Independent States)Wheat production, net trade, ending stocks
Coarse grains production, net trade, ending stocks
Rice production, net trade
Oilseed production, crush, net trade, ending stocks
Oilseed meals production, net trade
Vegetable oils production, net tradeUSDA (January 2003), *PS&D Database*, Washington DC for FSU.
Calculated as FSU-RUS.Butter production, net trade
Cheese production, net trade
SMP production, net trade
WMP production, net tradeUSDA (January 2003), *PS&D Database*, Washington DC for FSU.
Calculated as FSU-RUS.Consumption of wheat, coarse grain, rice, oilseeds,
oilseed meals, vegetable oils, beef, pig meat,
poultry meat, sheep meat, butter, cheese, SMP
and WMP

Calculated as production – net trade – change in stocks.

WorldWheat production, feed use, stocks
Coarse grains production, feed use, stocks
Rice production, stocks
Oilseed production, crush, stocks
Oilseed meals production, stocks
Vegetable oils production, stocks
Butter, cheese, skim milk powder, stocksCalculated as Rest of world + OECD + Argentina + Brazil + China
+ OIS + Russia.Production of butter, cheese, skim milk powder, whole
milk powderFAO, *FAOSTAT PC database*, Rome (2002).

Wheat price

USDA, *Wheat Outlook*, January 2003.

Coarse grains price

USDA, *Feed Outlook*, January 2003.

Rice price

USDA, *Rice Outlook*, January 2003.

Oilseed price

ISTA Mielke GmbH, *Oil World Annual* 2002, Hamburg.

Oilseed meals price

Oilseed oils price

Palm oil price

Butter price

SMP price

USDA, *Dairy World Markets and Trade* (December 2002),
Washington DC.

Cheese price	USDA, <i>Dairy World Markets and Trade</i> (December 2002), Washington DC.
WMP price	USDA, <i>Dairy World Markets and Trade</i> (December 2002), Washington DC.
Whey powder price	USDA, <i>Livestock, Dairy and Poultry</i> (January 2002), Washington DC.
Casein price	New Zealand Dairy Board, <i>International Market Update</i> , Wellington.
Tariffs, tariff-quotas and subsidised export limits for OECD countries unless otherwise specified	GATT (1996), <i>Uruguay Round GATT Schedules</i> , Geneva.
Consumption of all products	Calculated as production – net trade – change in stocks.
Sugar	
Sugar production, raw and white exports, raw and white imports, consumption, stocks	FO Licht World Sugar Balances, 2002.

TABLE OF CONTENTS

Acronyms and Abbreviations	6
The Outlook in Brief	7
Overview	9
Economic and Policy Assumptions	19
Cereals	35
Sensitivity Analysis of Yield Variability	55
Oilseeds	63
The Main Driving Forces in Ukraine’s Future Agricultural and Trade Development.....	69
Sugar.....	87
Meat.....	99
Dairy Products	109
Development of Agricultural Markets in the EU after Enlargement	121
Methodology.....	127
References.....	193

Annexes

Annex I. Statistical Tables.....	129
Annex II. Glossary of terms.....	203

LIST OF BOXES

Box 1. Sensitivity analysis: effects of changes in income growth.....	26
Box 2. Argentina: Market implications of the economic crisis.....	42
Box 3. Market implications of the 2002 United States’ FSRI Act	47
Box 4. China: a white knight for the world sugar market?.....	96
Box 5. Impacts of China’s WTO accession on meat markets	105
Box 6. Country of origin labelling for meat products.....	107
Box 7. Trade impacts of alternative milk market price support measures.....	115

ACRONYMS AND ABBREVIATIONS

Acronyms

ABARE	Australian Bureau of Agricultural and Resource Economics
ALIC	Agriculture and Livestock Industry Corporation
AMAD	Agricultural Market Access Database
AMS	Agricultural Marketing Service
ASEAN	Association of Southeast Asian Nations
BSE	Bovine spongiform encephalopathy
CEEC	Central and Eastern European Countries
CAP	Common Agricultural Policy (EU)
CCP	Counter-Cyclical Payments (US)
CIS	Commonwealth of Independent States
CoOI	Country-of-Origin Labelling
CPI	Consumer price index
CMO	Common Market Organisation for sugar (EU)
CRP	Conservation Reserve Program (US)
DEIP	Dairy Export Incentive Program (US)
DMLP	Dairy Market Loss Payment (US)
DPC	Direct Payments for Crops (US)
EBA	Everything-But-Arms Initiative (EU)
ECB	European Central Bank
ECU	European Currency Unit
EEP	Export Enhancement Program (US)
ERS	Economic Research Service of the US Department for Agriculture
EUROSTAT	Statistical Office of the European Communities
FAIR ACT	Federal Agriculture Improvement and Reform Act (US) of 1996
FAO	Food and Agriculture Organisation of the United Nations
FMD	Foot and mouth disease
FAS	Foreign Agricultural Service of the US Department for Agriculture
FSRI ACT	Farm Security and Rural Investment Act (US) of 2002
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GM	Genetically modified
GMO	Genetically engineered or modified plant, animal, micro-organism or virus
HFCS	High Fructose Corn Syrup
HS	Harmonised Commodity Description and Coding System
IMF	International Monetary Fund
MAF	Ministry of Agriculture and Forestry (New Zealand)
MAFF	Ministry of Agriculture, Forestry and Fisheries (Japan)
MERCOSUR	Common Market of the South
MLAP	Marketing Loan Assistance Program (US)
MLC	Meat and Livestock Commission (United Kingdom)
MFN	Most Favoured Nation
MPC	Milk protein concentrates
MTR	Mid-Term Review of the CAP (EU)
NAFTA	North American Free Trade Agreement
NIS	Newly Independent States
NME	Non-member Economies
NTBs	Non-Tariff Barriers
NZDB	New Zealand Dairy Board
OECD	Organisation for Economic Co-operation and Development
OIE	Office International des Epizooties
OMB	Office of Management and Budget (United States)
OTMS	Over Thirty Month Scheme
PFCP	Production Flexibility Contract Payments (US)
PSE	Producer Support Estimate
R&D	Research and Development
RR	Roundup Ready seed varieties
RRAC	Relative Risk Aversion Coefficient
RTAs	Regional Trading Arrangements
SARS	Severe Acute Respiratory Syndrome
SMP	Skim milk powder
SPS measures	Sanitary and phytosanitary measures
STE	State Trading Enterprises
TRQ	Tariff rate quota
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational Scientific and Cultural Organisation
URAA	Uruguay Round Agreement on Agriculture
US	United States
USDA	United States Department of Agriculture
VAT	Value added tax
WMP	Whole milk powder
WPC	Whey protein concentrates
WTO	World Trade Organisation

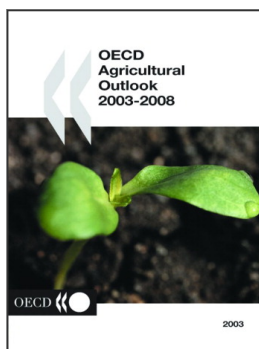
For an explanation of technical terms, see the *Glossary*

Abbreviations and symbols

ARS	Peso (Argentina)	Euro	European currency unit	mn	Million
AUD	Dollars (Australian)	f.o.b.	Freight on board	mt	Million tonnes
Bn	Billion	Ha	Hectare	NZD	Dollars (New Zealand)
CAD	Dollars (Canadian)	JFY	Japanese fiscal year (beg. 1 April)	pw	Product weight
c.i.f.	Cost insurance freight	JPY	Japanese yen	rse	Raw sugar equivalent
CNY	Yuan (China)	Kg	Kilogram	rtc	Ready-to-cook
cts/lb	US cents per pound	kt	Thousand tonnes	rw	Retail weight
Cwe	carcass weight equivalent	L	Litre	t	Tonnes
Dw	Dressed weight	lw	Live weight	t/ha	Tonnes per hectare
ECU	European currency unit	mha	Million hectares	USD	dollars (United States)

THE OUTLOOK IN BRIEF

- World production of agricultural products is projected to continue to expand over the period to 2008 with the mix of outputs shifting towards a larger share of livestock products and feedstuffs and a lower share of food grains. Continued productivity increases will account for the largest share of production growth. Most of the additional production of agricultural products over the Outlook will take place in non-member Economies (NMEs). However, their food consumption will grow even faster and will provide opportunities for increased production and trade with OECD countries, particularly for higher value processed products and feedstuffs.
- An expected rebound in OECD economic growth and revival of the world economy from 2004 onwards, supported by continuing, albeit slowing, population growth in NMEs leads to an increase in global demand for agricultural products. Much of the growth in world demand is expected to be reflected in increased consumption of coarse grains and oilseeds, with a shift away from wheat and rice based staple foods towards more processed food and higher protein products such as meats. The shift in consumption patterns is due mainly to higher per capita incomes and dietary changes in NMEs with only slow growth in food demand expected in mature OECD markets.
- Drought induced production adjustments and low demand lead to some divergence between cereal and livestock product prices at the beginning of the Outlook. As production rebounds, cereal and oilseed prices fall, improving the profitability of livestock sectors. Higher demand growth with the revival of the world economy leads to rising agricultural product prices over the medium term. Increasing crop and livestock product supplies over the Outlook period, and some rebuilding of global stocks, moderate the extent and pace of future price increases for most commodities.
- Trade in bulk and processed food products will continue to expand. The highest growth in net trade of OECD countries will be for cereals, followed by dairy products, when compared to the average volumes for 1997-2001. Some slowdown in OECD meat exports is expected due to faster internal consumption and intra-OECD trade, as well as increased competition in international markets.
- High farm support and protection in the OECD area and trade restrictions in a number of NMEs, continue to have a major impact on international agricultural markets. The pace of agricultural reform for particular commodities continues to be mixed, proceeding for some products and in some countries, but having slowed or halted for others. Further improvement in market orientation and lower market protection would improve the functioning of world commodity markets and the prospects for most participants. The WTO negotiations underway on agricultural trade offer an opportunity to pursue these goals. However, success in reaching an agreement acceptable to all participants and one which promotes a more liberal trading environment will require continued international cooperation and leadership by OECD countries.



From:
OECD-FAO Agricultural Outlook 2003

Access the complete publication at:
https://doi.org/10.1787/agr_outlook-2003-en

Please cite this chapter as:

OECD (2003), "Sugar", in *OECD-FAO Agricultural Outlook 2003*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/agr_outlook-2003-8-en

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.