Serbia and Montenegro

Review of the Sugar Sector

Study Supported Under the UK-EBRD Technical Cooperation Fund for SE Europe

FEDERAL REPUBLIC OF SERBIA AND MONTENEGRO

REVIEW OF THE SUGAR SECTOR

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Currency Equivalents
(2004)

USD 1 = YUD 57
USD 1 = EUR 1.23
EUR 1 = YUD 70

Abbreviations

CAP	Common Agricultural Policy
DRC	Domestic Resource Cost
EAR	European Agency for Reconstruction
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EU	European Union
EUR/€	European Euro
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
MATIF	Marché à Terme International de France
MOA	Ministry of Agriculture
PEP	Profit Equalising Price
TA	Technical Assistance
UK	United Kingdom
UNDP	United Nations Development Programme
US	United States of America
USD/US$	United States of America Dollar
VAT	Value Added Tax
WTO	World Trade Organization
YUD	Yugoslav Dinar

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ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

(i)   The Serbian sugar sector is located entirely within the Vojvodina province in the north of the country. Overall sugar production capacity in Serbia and Montenegro ("Serbia") is around 400,000 tonnes per annum, with domestic consumption at around 240,000 tonnes per annum. Sugar production has fluctuated in recent years between 200-275,000 tonnes. Seven factories operated during the 2003/04 season, with eight expected to be in operation for the 2004/05 season. All eight of these factories have been privatised since 2002. Four are owned by the Serbian company MK Commerce, two by the Italian company SFIR, and two by Hellenic Sugar of Greece.

(ii)   Under the stabilisation and association process implemented by the EU in the West Balkans, all EU import duties for products originating from the West Balkans, including Serbia, were abolished at the end of 2001. Imports of sugar originating in the West Balkans, which previously had been zero, reached 320,000 tonnes in the 2002/03 marketing year. Serbian exports rocketed during the first quarter of 2003 to as much as 84,000 tonnes following the permission to export to the EU region. However, this privilege has been suspended in the case of Serbia since May 2003 due to suspected sales regulation offences, whereby sugar entering the EU from Serbia did not originate from Serbian production. The suspension has been extended until August 2004.

Agriculture Sector

(iii)   Sugarbeet is grown overwhelmingly in the Vojvodina province in the north of Serbia. Within this area, variations in elevation and soil type account for the spatial pattern of cultivation intensities for sugarbeet and its principal alternative crops. The most favoured sugarbeet soils, with good moisture retention during the precipitation deficit period of July and August, are to be found in the Srem, southern Banat, and southern and central Bačka regions. On these chernozem and heavy black soils, sugarbeet has the potential to achieve yields of 50-55 tonnes per hectare, with sucrose content up to 16.0%. The principal alternative crops in these regions are maize and soybean, though sunflower and wheat are also widely grown due to the low input requirements, and sunflower's drought tolerance.

(iv)   In the north of Bačka, lighter, sandier soils are less suitable for sugarbeet, while areas of slightly higher elevation in Bačka and Banat have poorer moisture retention. Sugarbeet yields are typically ten tonnes per hectare lower in these areas, as they do not retain sufficient moisture for the end of the sugarbeet growing season in July and August when rainfall is low. Sunflower and wheat are the dominant crops in these northern areas. Table 1 presents averages of sugarbeet crop data for three well-defined production periods since 1981/82.

Table 1: Average Sugarbeet Yields, Sucrose Content and Sugar Yields, 1981/82-2003/04

	Sugarbeet Yield (tonnes per hectare)	Sucrose Content (%)	Sugar Yield (tonnes per hectare)
Average 1981/82-1990/91	42.0	16.0	5.5
Average 1991/92-2000/01	32.4	14.4	3.8
Average 2001/02-2003/04	38.0	13.9	4.4

 Source: Institute of Field Crops and Vegetables, Novi Sad.

(v) *The technical performance of the sugarbeet field sector deteriorated considerably during the political and economic instability of the early 1990s. Since the mid 1990s, performance has improved gradually, notwithstanding the disruptions of 2000/01 and 2003/04, though performance has not yet reached the levels witnessed prior to the 1990s. In terms of area, sugarbeet acreage halved from an average of around 100,000 hectares per annum in the 1980s to around 50,000 hectares by the mid-1990s. Sugarbeet area has since recovered towards around 70,000 hectares by 2003/04.*

(vi) *Table 2 reveals that Serbian field performance remains poor in comparison with the EU-15, particularly in the crucial measure of sugar yields. However, it is interesting to note that, during the late 1980s, Serbian sugar yields were comparable with those of Italy today, while sucrose content compared favourably with all comparison groups today. Sugarbeet production in Serbia, therefore, has the potential to increase beet yields from current levels, perhaps to between 50 tonnes and 55 tonnes per hectare, and to increase sucrose content to perhaps 16%. To achieve these levels would require considerable improvement in the technical performance of the field sector from current levels.*

Table 2: Field Performance Indicators, 2001/02-2002/03 (unless indicated)

Season	Beet Area (ha)	Beet Production (tonnes)	Beet Yield (tonnes/ha/year)	Sucrose Content (% beet)	Sucrose Yield (tonnes/ha/year)
Serbia (1986-1990)	102,426	4,160,301	40.6	16.2	6.5
EU (1986-1990)	2,030,479	102,956,201	50.7	16.3	8.3
Serbia (2001-2002)	49,376	2,139,506	43.2	14.2	6.1
EU-15	1,852,626	104,606,797	56.5	16.8	9.5
Austria	44,579	2,908,438	65.3	15.5	10.1
Italy	236,307	10,199,392	48.2	14.4	6.4
Hungary	62,000	2,916,534	47.0	15.6	7.3

 Source: CEFS; LMC Database; Institute of Field Crops and Vegetables, Novi Sad.

(vii) *This discussion raises the question of the future potential for sugarbeet yields, and the yields of the major alternative crops to sugarbeet. Over the course of the mission conducted in Serbia for this study, industry observers referred to the potential for sugarbeet to yield 50-55*

tonnes per hectare, as discussed above. The Institute of Field and Vegetables Crops in Novi Sad, which conducts extensive field research into the major arable crops in Vojvodina, regarded the following as indicative potential future yields for sugarbeet and its principal alternative crops in Vojvodina:

- *50 tonnes of sugarbeet per hectare*

- *2.5 tonnes of sunflower per hectare*

- *8 tonnes of maize per hectare*

- *3.5 tonnes of soya per hectare*

(viii)   In the analysis, we adopt these as the indicative potential future yields for sugarbeet and its principal alternative crops in Vojvodina.

Field Competitiveness of Sugarbeet and Alternative Crops

(ix)   The risk that farmers will switch to alternative crops is considerable for sugarbeet processors, who require guaranteed supplies of sugarbeet to contain costs. If farmers switch to alternative crops, either wholesale or year-to-year due to the annual nature of the sugarbeet planting decision, a sugar industry will become severely threatened. The place of sugarbeet in the crop rotation is determined by the returns from sugarbeet relative to alternative crops, subject to agronomic and other constraints on land use. In this section, we consider the competitiveness of sugarbeet relative to other arable crops in the sugarbeet growing areas of Serbia.

Gross Margin Analysis

(x)   Table 3 presents the base gross margin (total revenue – direct costs) associated with sugarbeet and its major alternative crops in Serbia, and the future potential base gross margin, with prices and yields adjusted to more closely reflect the potential future situation for these crops in Serbia[1]. Yields are adjusted to the indicative potential yields expressed in the previous section.

Table 3: Serbia Gross Margins, Average 2001/02-2003/04 and Potential Future Situation *(€ per hectare)*

	Beet	Sunflower	Maize	Soya
Base Gross Margin	699	296	340	221
Future Potential Base Gross Margin	1,145	232	519	489

Notes: 1. Beet yields are calculated as the yield at 15.5% sucrose content, as this represents the basis of payment.

Source: LMC estimates; Industrial Crops Association

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[1]   *Serbian prices are adjusted to reflect the difference between prevailing world prices over this period and their long run trend level.*

(xi)   Table 3 reveals that sugarbeet is currently by far the most profitable arable crop available to growers in Serbia on a direct costs basis (base gross margin). Under the potential future situation, beet remains as comfortably the most profitable crop. However, this analysis considers only the direct costs incurred in production. There are other costs incurred in producing the crop that should also be deducted from revenues. These include the costs of machinery and labour applicable directly to the production of each crop[1]. As the additional costs associated with labour and machinery are larger for sugarbeet than the principal alternative crops, the profitability gap between sugarbeet and the alternative crops narrows when these costs are included. Nonetheless, sugarbeet remains the most profitable crop.

(xii)   Despite these relatively encouraging results, it should be noted that the revenues for sugarbeet include an area payment of YUD 12,300 per hectare (€189 per hectare). Of the major alternative crops, only soybean and sunflower currently receive area payments, and these are lower than those available for sugarbeet. Area payments are currently YUD 4,000 per hectare for both soybean and sunflower. Maize receives no area payment.

Profit-Equalising Price

(xiii)   Though sugarbeet has the highest gross margin of the major crops in the sugarbeet growing regions of Serbia, this is not to say that growers will necessarily grow sugarbeet. When farmers evaluate the attraction of growing sugarbeet relative to other crops, they do not consider only the cost of growing sugarbeet. As their land can be used to grow other crops, they also take into account the return that they could earn from growing the next best crop. The sum of these two values defines the sugarbeet price that growers would have to receive for the profitability of sugarbeet production to exactly equal the profitability of the next best crop. We shall call this the profit-equalising sugarbeet price (PEP).

(xiv)   The profit-equalising sugarbeet price, therefore, determines the threshold level below which farmers can be expected to switch land out of sugarbeet into the alternative crop. This price is defined as the variable costs of sugarbeet production plus the returns (gross margins) from the next best alternative crop that could have been grown on the same area of land.

(xv)   Table 4 presents the current profit-equalising price for sugarbeet against its major alternative crops, and the potential future situation.

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[1]   *It is extremely difficult to estimate the costs of labour and machinery for each crop, as most farms tend not to record the application on each crop, but rather record the total cost for the farm as a whole. However, sugarbeet incurs a significantly higher amount of labour and machinery costs than the alternative crops in this study. Therefore, we have estimated the additional, or incremental, cost of labour and machinery applied to the sugarbeet crop only, based upon estimates derived in the course of the mission. We have, therefore, included an additional cost of €300 per hectare for sugarbeet labour, and €180 per hectare for sugarbeet machinery, giving a total of €480 per hectare for sugarbeet. These costs correspond with estimates received during the mission.*

Table 4: Profit-Equalising Sugarbeet Price, Average 2001/02-2003/04 and Potential Future Situation (€ per tonne sugarbeet)

Alternative Crop	Sunflower	Maize	Soya
Profit-Equalising Beet Price	*27.9*	*29.2*	*25.7*
Future Potential Profit-Equalising Beet Price	*17.7*	*23.5*	*22.9*

(xvi)   *The table reveals that maize represents the best alternative crop to sugarbeet, and that growers will currently switch to maize production if the price of sugarbeet falls below €29.2 per tonne of sugarbeet. At present, sugarbeet prices are set at YUD 2.0 per kilogram of beet with 15.5% sucrose content, which equates to €28.6 per tonne of sugarbeet.[1] Therefore, current sugarbeet prices are very close to the threshold sugarbeet price required to maintain sugarbeet's place in the crop rotation.[2] In the future, with potential yields achieved for all crops, the position of sugarbeet appears far more secure, though sugarbeet production remains susceptible to a fall in sugarbeet prices, or a rise in prices for alternative crops, or changes in the area payment structure for sugarbeet and alternative crops.*

Impact on Profit-Equalising Sugarbeet Price of Removing Area Payments

(xvii)   *As we have discussed, sugarbeet is currently at an advantage to other crops because it receives a relatively high area payment. Table 5 presents the profit-equalising sugarbeet prices assuming area payments for all crops are removed (or, alternatively, where payments are equal for all crops, as is increasingly envisaged in the policy reforms of the European Union). The table presents both the current profit-equalising price and the future potential situation, both without area payments.*

Table 5: Profit-Equalising Sugarbeet Price Excluding Area Payments, Average 2001/02-2003/04 and Potential Future Situation (€ per tonne sugarbeet)

Alternative Crop	Sunflower	Maize	Soya
Profit-Equalising Beet Price	*31.7*	*34.8*	*29.5*
Future Potential Profit-Equalising Beet Price	*20.3*	*27.3*	*25.5*

(xviii)   *If area payments were to be unified, the profit-equalising sugarbeet price with current yields and prices rises to €34.8 per tonne of sugarbeet against the best alternative crop, maize. This equates to YUD 2.4 per kilogram, which is above the YUD 2.0 per kilogram currently*

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[1]   *Assumes an exchange rate of €1 = YUD70.0.*

[2]   *Sugarbeet growers receive a premium for sucrose content above 15.5%, and a penalty for sucrose content below this level (see Chapter 1). Clearly, these can be crucial to the continuance of sugarbeet production. Most growers currently receive less than YUD 2.0 per kilogram as sucrose content in the past three years has averaged below the required 15.5%.*

available to sugarbeet growers with 15.5% sucrose content. Therefore, the current place of sugarbeet in the rotation is crucially dependent upon the area payment structure.

(xix)   When higher yields are achieved in the future, the removal of area payments results in the profit-equalising sugarbeet price falling to €27.3 per tonne of sugarbeet against maize. This equates to YUD 1.9 per kilogram, which is just below the YUD 2.0 per kilogram currently available to sugarbeet growers with 15.5% sucrose content. Therefore, the future place of sugarbeet in the rotation becomes marginal without the current area payment structure in place.

(xx)   In future, for processors to be able to guarantee sufficient supplies of sugarbeet, the price of sugarbeet may have to be raised from its current level if the area payment structure alters. If EU access is restored, processors may utilise these increased margins to pay higher sugarbeet prices in order to guarantee sufficient quantities of sugarbeet to exploit preferential access to EU.

Processing

(xxi)   Serbia's sugarbeet processing facilities are now largely in private hands. In 2003, seven factories operated, and another (SFIR's Nova Crnja facility) was commissioned with a view to operating in 2004. There are also four state-owned factories, none of which operated in 2003, and there appears to be little prospect of any of these operating in the future. MK Commerce is the largest processor, owning over half of the country's operational capacity and producing more than 50% of Serbia's sugar output. Hellenic Sugar is the second largest processor, with SFIR lying third. However, if SFIR brings the Nova Crnj factory back into operation, it has the potential to increase output to a level similar to that of Hellenic Sugar.

(xxii)   One of the striking features of the processing sector in Vojvodina is that a number of factories are poorly located in terms of their sugarbeet supply. The best sugarbeet regions (i.e., where sugarbeet has its greatest comparative advantage relative to alternative crops) are Srem (southern Vojvodina), central/southern Backa and southern Banat. All of MK Commerce's factories lie within these regions. SFIR's factories are poorly located in relation to these areas, while Hellenic Sugar's factories are situated on the fringes of these regions. As a result, SFIR and Hellenic Sugar have to haul sugarbeets (at their expense) over relatively long distances. Thus, the geographical location of MK Commerce's factories gives the company a competitive advantage over its competitors.

Technical Performance

(xxiii)   Table 6 compares the technical performance of the Serbian processing industry with that of the EU-15 and two new entrants, the Czech Republic and Hungary, whose industries have received considerable investment since privatisation.

     − *Average factory size in Serbia is broadly similar to that of the new entrants, but remains much smaller than the average of the EU-15. However, considerable rationalisation of the Serbian industry is likely to occur over next few years, which will increase factory size to a level closer to that in the EU.*

     − *Factory capacity in Serbia is currently large relative to sugarbeet supply. This is reflected in the relatively low level of capacity utilisation, which is presented*

in the final column of the table (and is expressed in terms of tonnes of sugar produced per tonne of installed daily sugarbeet processing capacity). Capacity utilisation is a key driver of processing costs. However, processors only have partial control of this aspect of their performance, and it will be affected by a variety influences, in particular future access to the EU market.

– *Sucrose recovery rates are low by international standards. However, there is no reason why the investment that is now flowing into the sector should not raise performance to the levels approaching those witnessed in Hungary and the EU.*

Table 6: Factory Performance Indicators, 2001/02-2002/03

Season	Number of Factories	Average Factory Capacity (tbd)	Slicing Season (days)	Average Factory Throughput (tonnes/year)	Average Factory Throughput (tonnes/day)	Sucrose Recovery (%)	Sugar Produced (tonnes, wv)	Sugar per tonne of Slicing Capacity (tonnes)
Serbia	9	4,823	71	254,569	3,533	80.2	263,557	6.5
MK Commerce	4	4,500	67	245,358	3,656	78.2	108,403	6.0
SFIR	1	5,250	75	321,521	4,243	80.0	37,500	7.2
Hellenic Sugar	2	5,000	78	309,670	3,952	82.2	76,500	7.7
EU-15	135	9,923	85	777,885	9,128	86.6	15,757,523	11.8
Czech Republic	13	3,238	na.	303,946	na.	na.	523,450	12.4
Hungary	7	6,300	na.	447,529	na.	85.8	390,984	9.5

Processing Costs

(xxiv) In this section, we present LMC's estimates of the costs of processing sugar in Serbia, and compare these with an international comparison group. We present estimates of processing costs under three scenarios, each one representing a different time period as the Serbian processing sector evolves. These time periods are:

(a) 2004/05: For the next campaign, we assume output of 300,000 tonnes of sugar.

(b) Future – Short/Medium Term: In this period, which represents perhaps the next 2-3 years, we consider output with and without EU access, and assume that only limited rationalisation and investment take place in the sector.

(c) Future – Medium/Long Term: In this period, covering the situation that is expected to prevail by the end of the decade, we assume considerable further rationalisation occurs, with the number of factories dependent upon EU access.

(xxv) In each case, we assume input prices remain at current levels.

(xxvi) Table 7 presents the processing costs estimated for each of these three scenarios.

Table 7: Processing Costs in Serbia (€ per tonne sugar)

Time Period	2004/05	Future - Short/Medium Term		Future - Medium/Long Term	
EU Access	*With/Without*	*With*	*Without*	*With*	*Without*
Rationalisation	*No*	*No*	*No*	*Yes*	*Yes*
Sugar Production (tonnes)	*300,000*	*400,000*	*256,795*	*400,000*	*272,553*
Number of Factories	*8*	*8*	*8*	*5*	*4*
Haulage	*20*	*20*	*20*	*20*	*20*
Cash Costs	*149*	*136*	*156*	*87*	*90*
By-Product Credit	*(48)*	*(48)*	*(48)*	*(48)*	*(48)*
Total Net Operating Costs	***121***	***108***	***128***	***59***	***61***
Non-Cash Costs	*68*	*51*	*80*	*44*	*46*
Full Costs	***189***	***159***	***208***	***103***	***108***

Source: LMC estimates.

(xxvii)   Table 7 reveals that, with a rationalisation to four or five factories, Serbia's processing costs will fall by around €80-€85 from 2004/05 levels, to close to €100 per tonne. In the short/medium term, costs will be considerably lower with EU access due to the higher output, which lowers unit fixed costs. Following rationalisation, costs will be broadly similar both with and without EU access. This is because the number of factories is reduced further (to four factories) without EU access, as the sector contracts to the size of the domestic market.

Sugar Revenues

(xxviii)   The average selling price of Serbian sugar is determined by sales into the domestic and EU markets. As mentioned in the introduction, Serbia's access to the EU under the terms of the West Balkans agreement is currently suspended. However, this suspension may be lifted in August 2004.

(xxix)   The outlook for average selling prices in Serbia over the next few years will be largely determined by two inter-related factors:

–   *The future level of sugar production.*

–   *Access to the EU market.*

(xxx)   Today, the industry has the capacity to produce around 400,000 tonnes of sugar. However, domestic consumption is estimated at around 260,000 tonnes, and appears to be growing slowly. This suggests the industry has, at present, the capacity to produce at least 140,000 tonnes for export, depending on the volume that can be sold into the domestic market. Whether or not this sugar can be exported duty-free to the EU will have far-reaching implications for processors' future average selling price. This is because the alternative to selling this sugar in the high-priced EU market is to sell it in regional markets where it would earn a far lower price.

(xxxi)   Serbia's three processing companies have proposed to the Serbian government that they limit their future exports to the EU to 160,000 tonnes, which equates to close to their current

surplus production capacity. Assuming that an arrangement similar to this is agreed, we have prepared forecasts of average selling prices with and without duty-free access to the EU market from August 2004. If duty-free access is, for some reason, not restored, there is little prospect of production exceeding domestic demand in the long term, because the return from regional export sales would be insufficient to cover processors' costs.

(xxxii)   Table 8 presents the estimated selling prices under the three time periods described in the previous section.

Table 8: Average Selling Prices *(€ per tonne)*

Time Period	2004/05		Future - Short/Medium Term		Future - Medium/Long Term	
EU Access	*With*	*Without*	*With*	*Without*	*With*	*Without*
Sales Volume (tonnes)	*300,000*	*300,000*	*400,000*	*256,795*	*400,000*	*272,553*
- EU	*160,000*	*-*	*160,000*	*-*	*160,000*	*-*
- Domestic Market	*140,000*	*230,000*	*240,000*	*233,450*	*240,000*	*247,775*
- Regional/World Market	*-*	*70,000*	*-*	*23,345*	*-*	*24,778*
Selling Price (€ per tonne)						
- EU	*634*	*-*	*634*	*-*	*505*	*-*
- Domestic Market	*523*	*523*	*578*	*578*	*578*	*578*
- Regional/World Market	*-*	*202*	*-*	*248*	*-*	*248*
Average Selling Price	**582**	**449**	**600**	**548**	**549**	**548**

Source: LMC estimates.

(xxxiii)   The table reveals that for 2004/05, average selling prices are around €130 per tonne higher with EU access than without. This differential narrows to €50 per tonne in the short/medium term future period, as domestic prices rise back to trend levels and smaller volumes are sold at low prices on the world market. By the medium/long term future period, the differential is largely eliminated as EU reforms cause prices in the EU market to fall sharply.

Sustainability of the sugar Sector

(xxxiv)   The relative levels of prices and costs will determine the future economic viability of the sugar sector in Serbia. In this section of the report, we compare the costs and prices of producing and selling sugar under the three time periods already introduced, both with and without access to the EU market.

(xxxv)   Table 9 presents the profitability of the sugar sector over the three time periods, with and without EU access. In addition to the processing costs, Table 9 also includes the costs of purchasing beet, in order to derive a full cost of producing sugar in Serbia. We assume the following for sugarbeet prices:

> *–   For 2004/05, sugarbeet prices have already been negotiated at YUD 2.0 per kilogram (€28.6 per tonne of sugarbeet, assuming an exchange rate of YUD70/€1), based upon an assumed sucrose content of 15.5%. Assuming a*

TBTS ratio of 7.96[1], this gives a sugarbeet price of €228 per tonne of sugar. In the future, we assume the price required to guarantee sugarbeet supplies will reflect the profit-equalising price (PEP) of sugarbeet (Table 4). For the short/medium term future, we assume the PEP reflects current yields, while in the medium/long term future, we assume the PEP reflects potential future yields.

(xxxvi)   The table presents two measures of profitability: (i) before depreciation, interest and tax (operating margin); and (ii) profit before interest and tax.

Table 9: Profitability of Sugar Sector with Area Payments *(€ per tonne sugar, unless stated)*

Time Period	2004/05		Future - Short/Medium Term		Future - Medium/Long Term	
EU Access	With	Without	With	Without	With	Without
Rationalisation	No	No	No	No	Yes	Yes
Production (tonnes)	300,000	300,000	400,000	256,795	400,000	272,553
- EU Market Sales	160,000	-	160,000	-	160,000	-
- Domestic Market Sales	140,000	230,000	240,000	233,450	240,000	247,775
- World Market Sales	-	70,000	-	23,345	-	24,778
Average Selling Price	582	449	600	548	549	548
Beet Price	228	228	233	233	187	187
Haulage	20	20	20	20	20	20
Net Cash Processing Costs	101	101	88	108	39	41
Total Operating Costs	348	348	340	361	246	248
Operating Margin	234	100	260	187	303	299
Depreciation	68	68	51	80	44	46
Profit before Interest and Tax	**165**	**32**	**209**	**107**	**259**	**253**

(xxxvii)   The following conclusions can be drawn from the results presented in Table 9:

− *2004/05: Profitability of sugar production in 2004/05 is highly sensitive to the restoration of preferential access to the EU market. Production is likely to be only marginally profitable on a full costs basis without EU access, and this excludes any interest payments. Without access, the industry would have a surplus of 70,000 tonnes that would have to be sold on the world market, undermining the profitability of the industry.*

− *Future - Short/Medium Term: The industry would be profitable both with and without EU access, though profitability would be around €100 per tonne higher with EU access restored. Profitability without EU access is higher than in 2004/05 for several reasons, the most important being the far higher world and domestic prices obtained as world prices return to trend and the reduced proportion of sales made into the low priced domestic market.*

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[1] *This TBTS ratio assumes sucrose content of 15.5% and 81% slucrose recovery.*

> − *Future − Medium/Long Term: The industry would be highly profitable both with and without EU access, with little difference between the two access scenarios. The reason for this is that processing costs are very similar after rationalisation takes place, and average selling prices are also very similar. This is because in the medium/long term, we expect EU prices to fall by 20% as the reform process is completed. Rationalisation of the Serbian processing sector is sufficient to raise profitability from the short/medium term levels, even with lower average selling prices, as processing costs fall dramatically.*

Profitability Without Area Payments

(xxxviii)   The analysis above assumes the current area payments structure is maintained. If area payments are removed, the difference is that the elimination of area payments serves to raise the price of sugarbeet in the future scenarios as the profit-equalising sugarbeet price rises. This does not affect the profitability for 2004/05, as sugarbeet prices are assume to be fixed already at YUD 2.0 per kilogram for 15.5% sucrose content.

(xxxix)   Our analysis suggests the removal of all area payments lowers future profits by between €30-€45 per tonne of sugar from the situation prevailing with area payments retained. However, profits remain considerable under the medium/long term scenarios, thereby calling into question the necessity for the current area payments structure to be maintained long term. In the short/medium term, profitability is reduced without area payments, and some form of payment may be required in this period while processors are investing in rationalisation.

Conclusions

(xl)   For the 2004/05 season, access to the EU market will be crucial to the profitability of the Serbian sugar industry. With average yields, domestic production will exceed domestic consumption by as much as 70,000 tonnes. The production surplus will be sold either at high EU support prices, or at low world market prices, and this will have far-reaching implications for average selling prices and industry profitability. Without access to the EU market, industry profits are likely to be very modest.

(xli)   In the longer term, the Serbian sugar sector appears to have a viable future, assuming that the government is willing to maintain a similar level of border protection (a tax on consumers) to that which has prevailed in recent years. The sector has excellent agricultural potential and the processing sector has a strong foundation upon which to build.

(xlii)   The key to the future size and profitability of the sugar industry will be access to the EU market. Serbia is highly unlikely ever to become a competitive exporter to the world market. As a result, production will consistently exceed domestic consumption only if EU market access is restored. By the end of the decade, with EU access restored, we estimate that Serbia could produce around 400,000 tonnes of sugar in five factories, with beet production covering around 60,000 hectares. Without EU access, sugar production is likely to contract to around the level of domestic consumption, with four factories producing perhaps 270,000 tonnes of sugar, with beet acreage of around 40,000 hectares.

(xliii)   In terms of the specific position of MK Commerce, the company has several distinct advantages over other processors in the sector:

–   *MK has a strong emphasis on guaranteeing sugarbeet supplies, which is crucial to the success of any sugar industry. MK seeks to promote links with the best, expanding growers.*

–   *The four MK factories are located in the prime sugarbeet producing areas, where sugarbeet has a comparative advantage over alternative crops.*

–   *MK currently supplies around 50% of Serbian sugar, and enjoys scale advantages over other processors.*

–   *The historic links of MK Commerce and its trading arm with domestic end-users provide a marketing advantage over competing processors. Moreover, SFIR and Hellenic have less experience of competitive market situations with volatile prices, having traded predominantly in the ordered EU market.*

However, there are some weaknesses attached to MK Commerce's position in Serbia:

–   *MK has a comparatively poor reputation for prompt payment amongst the growers encountered in the course of this mission. Nevertheless, the MK payment schedule is due to run until 31.03.04, and it is possible that payments may be forthcoming.*

–   *MK's political influence is likely to be considerably weaker with the newly-elected Government of Serbia than that experienced with its predecessor.*

1. INTRODUCTION TO THE SUGAR SECTOR

1.1   Serbia produces sugar solely from sugarbeet, with the sugarbeet growing and processing sector located entirely within the Vojvodina province in the north of the country. Overall sugar production capacity in Serbia and Montenegro ("Serbia") is around 400,000 tonnes per annum, with domestic consumption currently at around 240,000 tonnes per annum. Sugar production has fluctuated in recent years between 200,000 tonnes and 275,000 tonnes. Seven factories operated during the 2003/04 season, with eight expected to be in operation for the 2004/05 season. All eight of these factories have been privatised since 2002. Four are owned by the Serbian company MK Commerce, two by the Italian company SFIR, and two by Hellenic Sugar of Greece.

1.2   The preferential access arrangements of the Western Balkans free trade agreement are vital to the outlook for the Serbian sugar sector due to the high, stable support price available in the EU sugar market. Under the stabilisation and association process, all EU import duties for products originating from the West Balkans were abolished at the end of 2001. This agreement extends to Albania, Bosnia, Kosovo, Croatia, Macedonia and Serbia & Montenegro. Sugar produced in these countries from domestic beet can be exported freely to the EU without tariffs or quota restrictions, subject to strict definitions of rules of origin. At present, the agreement is in place until the end of 2005, though the likelihood remains that the agreement will be extended beyond that date.

1.3   However, this privilege has been suspended in the case of Serbia since May 2003 due to suspected sales regulation offences, whereby sugar entering the EU from Serbia did not originate from Serbian production. The suspension has currently been extended until August 2004.

Structure of Report

1.4   This report comprises an *Executive Summary* and a *Main Report*. The Main Report contains six chapters:

> Chapter 1: Introduction to the Sugar Sector
> Chapter 2: Agriculture Sector
> Chapter 3: Processing Sector
> Chapter 4: Markets and Revenues for Serbian Sugar
> Chapter 5: Sustainability of the Serbia Sugar Sector
> Chapter 6: Conclusions and Recommendations

1.5   In addition, the report includes two annexes that review the current situation and the possible direction of reform in the European Union (EU):

> Annex 1: Current Situation in the EU Sugar Market
> Annex 2: EU Sugar Reform

1.6   In the report, we consider the prospects for the Serbian sugar sector over three time frames, with each time period corresponding to different periods of adjustment in the Serbian industry:

1. 2004/05 - For the next campaign, we assume eight factories will operate and output will be 300,000 tonnes of sugar, irrespective of EU access renewal, based upon 65,000 hectares of beet and sugar yields of 4.6 tonnes per hectare.

2. Future – Short/Medium Term: In this period, which intended to represent the situation during the next 2-3 years, in which there is likely to be only limited rationalisation and efficiency improvements, but output is dependent upon EU access.

3. Future – Medium/Long Term: In this period, which is intended to represent the situation that could be expected to prevail by the end of the decade, following considerable further factory rationalisation and efficiency improvements in both the field and factory sectors, with sugar output and the number of factories dependent upon EU access.

General Background on Serbian Agriculture

Economic Recovery

1.7   The Serbian economic recovery that began in 2000 continues today. The outlook for 2004 shows GDP growth of 5% according to EIU (*EIU Country Outlook, 2003*). Output is expected to continue to increase as foreign investment flows into the country and recovery begins in the industrial sector. Inflation is expected to stabilise at 10% by the end of 2004. The exchange rate should also remain relatively stable. These trends favour growth of the agricultural sector by boosting domestic demand for food and agricultural commodities, reducing price instability and encouraging increased output of raw and processed agricultural goods (*WB Report on Agriculture, 2003*).

1.8   However, the economic recovery remains fragile. According to the *EIU Country Outlook*, the budget deficit is expected to increase significantly in 2004, the privatisation process is slow, with many problems related to social ownership, and the banking sector requires more time to fully recover. The growing trade deficit, together with substantial debt commitments, mean that Serbia will rely heavily on foreign direct investment and support from international financial institutions in the medium-term (*WB Report on Agriculture in Serbia, 2003*).

Agriculture Sector

1.9   The cumulative effects of regional conflicts, sanctions and isolation have accelerated the decline of agriculture in Serbia. Current political instability in relation to Kosovo, and weak links with Montenegro, are burden for the new Government, elected at the beginning of March 2004. Policy governing support to agricultural producers, and export and import subsidies, are expected to be priorities of the new Ministry of Agriculture. The Ministry is considering harmonising domestic agricultural policies with those of the EU.

1.10   Historically, agriculture has always been an important component of the Serbian economy, and in former Yugoslavia, prior to 1990, it accounted for 10% of GNP and 24% of the workforce. The sector also made a significant contribution to international trade, with 12-13% of total exports, 9-10% of total imports and a positive contribution to the trade balance. More resilient than most sectors of the economy, agriculture has contracted less in response to the difficult economic conditions during the last fourteen years. Its importance to the economy has thus increased, accounting for 22% of GNP in 2003 and 22% of total exports *(FAO Report on Mechanisation in Serbia, 2003)*.

1.11   During the isolation of the 1990s, as a means to preserving stability, the Government kept producer prices and food prices very low, which severely compromised enterprise viability. Nevertheless, the sector continued to produce an adequate supply of basic food commodities and to absorb a growing number of unemployed.

1.12   Out of the total land area of 102,173 km^2, 55 percent is agricultural land. Almost 80 percent of this land is cultivable, including the rich arable land of Vojvodina. On a per capita basis, the availability of cultivable land compares favourably with western Europe, with 0.44 hectares per capita in Serbia compared with 0.18 hectares per capita in western Europe as a whole. Cereals constitute 43% of produce, industrial crops 9%, vegetables 21%, fodder 6% and fruit 8% (*SCEPP Agricultural Report on Serbia, 2002*).

1.13   Industrial crops account for 10% of arable land use and primarily consist of sunflower, soybean and sugarbeet. Sunflower, soybean and sugarbeet are predominantly grown in Vojvodina, whereas vegetables such as beans, onion and alfalfa are predominantly grown in Central Serbia.

1.14   The average farm size varies between two to five hectares, which are usually divided into four to six plots. Most equipment is over 20 years old, and it is not uncommon to see farmers using 40-year-old machines.

1.15   Approximately half of Serbia's population lives in rural areas, although only 8% of rural households earn all their income from agriculture. A further 24% are mixed households, which earn their incomes from both farm and non-farm sources, and the remainder are non-farm households. In contrast to most other countries of Eastern Europe, Serbia has a long history of private land ownership. Farms are of two main types: small privately owned farms and larger socially owned *agro-kombinats* and cooperatives. Many agro-kombinats in Vojvodina are several thousand hectares in extent.

1.16   Private farmers own approximately 80% of agricultural land, 85% of cultivable land, 96% of farm machinery and produce more than 50% of the market value of agricultural goods. They typically farm 2-5 hectares, usually in several plots (*FAO Report on Mechanisation in Serbia, 2003*). Most households practice mixed, low intensity management systems with 1-2 cows, some sheep or pigs, and enough cereal and vegetable production to meet their own needs for animal feed and human consumption. Incomes are low as a result, and most farms must rely on non-farm income.

1.17   Despite government policy to keep product prices low, private farms have continued to meet most of the country's needs for food consumption. They have survived by reducing the use of fertilizer and agricultural chemicals, foregoing repairs and maintenance on tractors and

equipment, and by selling their breeding stock. Most small private producers have turned to less profitable low-value cultures such as wheat and maize, which is not only a consequence of the lack of production investment capital, but also of the low level of knowledge about new cultivation and processing technologies. Coupled to the infrastructure collapse are the consequences brought about by recent periods of unfavourable weather; the use of inadequate planting material; shortage and inadequate use of mineral fertilizers and pesticides; outdated machinery; and the low technological level of production. All have resulted in low yields and low profitability.

Government Policy Towards Agriculture

1.18   The Federal Ministry of Agriculture is highly decentralised, though Belgrade is responsible for policy formulation, legislation and quality control. However, as most staff are assigned to inspection and subsidy administration, the Ministry's capacity for policy analysis and formulation is very limited. The majority of the staff members are located at 25 regional offices.

1.19   The new constitution between Serbia and Montenegro, which came into effect in 2002, had implications for the policies and institutions linked to agriculture. Trade, price and subsidy policies remained Republic-level responsibilities, although it was agreed that the two Republics will need to re-formulate and align these policies in the short term.

1.20   Under its wide-ranging programme of economic reform, the previous government of Serbia markedly liberalized trade policy. The maximum tariff on agricultural products was reduced from 40% to 30% as a consequence of policy reforms that took place in the last four years. In addition, the tariff structure has been simplified. Nevertheless, most agricultural commodities continue to benefit from the maximum rates of protection of 20%-30%, and trade policy remains a major form of support for producer prices. Additional unit tariffs have also been reduced, though they remain a source of trade and price instability, as they can be changed by cabinet, and are usually reviewed annually. There is also a facility to exempt imported raw materials from customs duty if they are used to manufacture export products. Licences are no longer required for agricultural imports or exports, and import quotas for agricultural commodities have been terminated. However, export quotas for 31 "basic" agricultural commodities remain, including wheat, maize, flour, sugar, soybean, sunflower and leather products. Most of these quotas are based on food balance calculations in order to limit exports to surplus domestic production. The government also reintroduced export subsidies in 2002 (*WB Report on Agriculture, 2003*). Future agricultural trade policy reform will be heavily influenced by the application for membership of the WTO, filed by Serbia in February 2004.

1.21   The entry of Serbia into the European Union (EU) is an overriding objective of Government and this shapes much of the current approach to agricultural policy.

Government Policy Towards the Sugar Sector

1.22   The Government supports the production of sugarbeet by providing a direct subsidy, currently YUD 12,300 per hectare, if the yield is at least 36 tonnes per hectare. The Government has also put in place an import tax of 20.5% and an additional unit levy of YUD 18 per kilogram on imported sugar. Currently, the retail price of sugar is between YUD 42 and YUD 48 per kilogram. These policies are presented in more detail later in this chapter.

1.23   Trade with the EU, Serbia's main trading partner, has been disrupted since the EU-Western Balkans Agreement was suspended in April 2003. We discuss this agreement in more detail later in this chapter.

General Information on the Sugar Industry

1.24   Diagram 1.1 presents the supply and demand balance in Serbia since 2000/01, when production returned to a more stable situation. A numerical summary of these data is presented in Table 1.1. The 2003/04 export data are an estimate; the actual level of exports will depend largely upon the potential renewal of preferential access to the EU, currently scheduled for August 2004.

Table 1.1: Supply/Demand Balance for Sugar, 2000/01-2003/04 ('000 tonnes, white value)

	2000/01	2001/02	2002/03	2003/04
Production	120	209	282	209
Consumption	263	276	260	270
Imports - Total	146	210	212	237
Raws	*0*	*0*	*0*	*0*
Whites	*146*	*210*	*212*	*237*
Exports - Total	0	14	206	163
Raws	*0*	*0*	*0*	*0*
Whites	*0*	*14*	*206*	*163*
Apparent Stock Change	2	130	28	14

Sources: Serbia Ministry of Agriculture; LMC estimates.

**Diagram 1.1: Production, Consumption and Net Exports in Serbia
2000/01-2003/04**
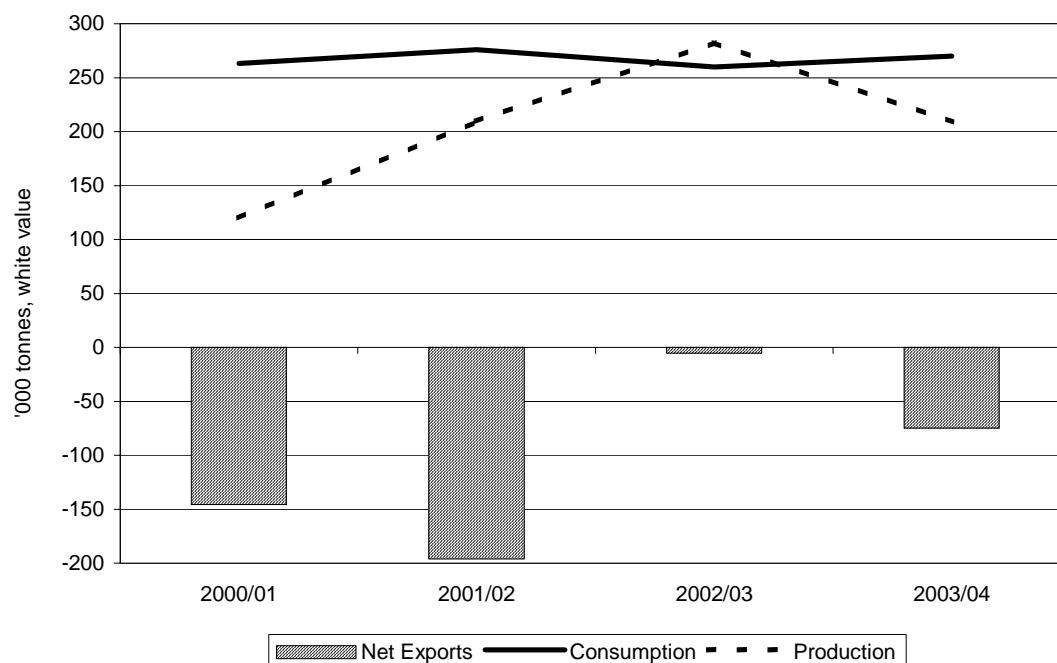
1.25 Table 1.1 and Diagram 1.1 show that Serbia has fluctuated between domestic surpluses and deficits in recent years. The effects of the Kosovo war disrupted production severely in 2000/01; production then grew steadily until 2002/03, and then declined during the weather-affected crop of 2003/04. Because of these disruptions, the Serbian sugar trade balance also fluctuates between net exporter and net importer status. However, if EU access is restored from August 2004, the future pattern is likely to witness production increasing towards domestic capacity of 400,000 tonnes, as Serbia becomes a structural net sugar exporter.

Sugar Production

1.26 Serbia's sugarbeet processing facilities are now largely in private hands. In 2003, seven factories operated, and another (SFIR's Nova Crnja facility) were commissioned with a view to operating in 2004. There are also four state-owned factories, none of which operated in 2003. There appears little prospect of these operating in the future.

1.27 Table 1.2 lists all operating and non-operating factories, with their processing capacities and sugar output in the 2003 campaign. MK Commerce is the largest processor, owning over half of the country's operational capacity and producing more than 50% of Serbia's sugar output. Hellenic Sugar is the second largest processor, with SFIR lying third. However, if SFIR brings the Nova Crnja factory back into operation, it has the potential to increase output to a level similar to that of Hellenic Sugar.

Table 1.2: Ownership and Capacities of Factories, 2003/04

Ownership	Capacity (tonnes beet per day)	Sugar Production (tonnes)
MK Commerce	18,000	120,000
Hellenic Sugar	10,000	62,400
SFIR	9,000	26,600
State	19,000	0
Total	**56,000**	**209,000**

Sugar Consumption

1.28   Table 1.3 presents a breakdown of sugar consumption in Serbia by end-use sector. As domestic industry has stabilised in the past few years, tabletop consumption has come to account for around 70% of total sugar consumption, with the remainder being consumed in the industrial sector. Within the industrial sector, sugar consumption is greatest in the beverages and confectionery sectors.

Table 1.3: Breakdown of Sugar Consumption, 2000/01-2003/04 (tonnes, white value, unless stated)

	2000/01	2001/02	2002/03	2003/04
Total Domestic Sugar Consumption	263,000	276,000	260,000	270,000
Domestic Sugar Consumption Breakdown				
Tabletop Sugar Consumption	191,000	201,000	175,000	181,000
Industrial Sugar Consumption	72,000	75,000	85,000	89,000
Of Which:				
- Beverages	*33,000*	*34,000*	*31,000*	*40,000*
- Baked Goods	*10,000*	*10,000*	*15,000*	*10,000*
- Confectionery	*20,000*	*20,000*	*30,000*	*22,000*
- Dairy Products	*8,000*	*8,000*	*8,000*	*13,000*
- Fruits and Foods	*1,000*	*3,000*	*1,000*	*4,000*
- Other (Including Non-food) Uses	*0*	*0*	*0*	*0*
Population (millions)	7.7	7.7	7.7	7.7
Per Capita Sugar Consumption (kg/head)	24.0	24.5	25.5	25.0
EU Per Capita Sugar Consumption (kg/head)	38.0	37.9	38.0	37.9

Source: Serbia Ministry of Agriculture
Note: Figures do not include Kosovo.

1.29   Sugar consumption per head is currently below that of the EU, as would be expected given the disparity in per capita income, which is a key determinant of sugar consumption. If Serbian consumption averaged similar per capita levels as the EU, total annual consumption would rise to over 350,000 tonnes.

Agricultural and Trade Policy

Agricultural Policy

1.30   Serbia currently employs a discriminatory system of direct agricultural support designed to support production of so-called "industrial" crops. The crops currently enjoying support under this policy are sugarbeet, sunflower, soybean and tobacco, and each of these receives direct support in the form of an area payment. Table 1.4 presents the current level of area payments for each crop.

Table 1.4: Agricultural Area Payments for Serbia, 2003/04

	Area Payment	
	(YUD per hectare)	(€per hectare)
Sugarbeet	12,300	181
Sunflower	4,000	59
Soybean	4,000	59
Tobacco[1]	71,000	1,047

Source: Ministry of Agriculture
Notes: 1. Tobacco payments differ according to the type of tobacco grown. Payment shown is for Virginia tobacco.

1.31   The current system is a legacy of pre-1990s Yugoslavia, and was continued through the 1990s. Though the origins and basis for these area payments are unclear, these crops all support a domestic processing sector, and indications are that domestic production of industrial crops was based upon strategic rather than economic assessments. Prior to 2001, sugarbeet received a payment per tonne of sugarbeet produced. From 2001/02, in order to align Serbian agricultural policy more closely with EU policy, this became an area payment, which was followed in 2002/03 by area payments for soybean and sunflower. All payments were set at the same levels as today (Table 1.4).

1.32   The justification for continuing area payments in recent years has been to attempt to re-establish area at the levels experienced in the 1980s. The higher payment for sugarbeet is justified by the higher input levels required, and the consequent risks involved in sugarbeet farming, particularly for farmers lacking access to credit.

1.33   By contrast, wheat and maize producers have never enjoyed direct income support. Part of the reason for this is that, because of the large area under these crops, any direct support would be extremely expensive. Support for cereal crops has, therefore, taken the form of market interventions and price controls rather than direct support to the farmer. Moreover, prior to 2000, all crops in Yugoslavia received indirect support via state subsidisation of inputs and the availability of cheap state credit.

1.34   All payments to farmers are made through processors, who allocate payments to growers. Each year, the total area to receive area payments is agreed by the government after

applications from the processors. Any production above these agreed levels does not receive area payments. For the time being at least, these payments are likely to be maintained under the newly elected government of Serbia.

Trade Policy

1.35   Serbia currently supports domestic sugar prices via the imposition of duties and levies on imports of raw and white sugar. Table 1.5 displays level of border protection against imports that the sugar industry in Serbia currently receives.

Table 1.5: Current Trade Policy Information

	Raw Sugar		White Sugar	
	YUD	€	YUD	€
Current Tariff Rate (%)	20.5%		20.5%	
Additional Duty Rate (per tonne)	6,000	88	18,000	265
Total Effective Duty Rate (%)	**212%**		**248%**	

1.36   As the table shows, the domestic market is protected by an import tariff, which is currently set at 20.5%, and an additional duty of YUD 18,000 for white sugar. White sugar duties are set higher than for raw sugar to protect the domestic industry against the lower costs of freight for white sugar from the EU.

1.37   As a result of the tariff and duty, the estimated *ad valorem* tariff on white sugar averages almost 250% for the current 2003/04 season. This compares with an equivalent level of around 300% in the EU. However, the additional duty applicable to white sugar only changed to YUD18,000 per tonne, from YUD10,000 per tonne, in February 2004. It is possible that the new government may reform this measure, as some indications suggest that the rise may be unlawful. If the duty reverted to its previous level, the *ad valorem* rate of protection would fall to around 190%.

Western Balkans Agreement

1.38   The preferential access arrangements of the West Balkans free trade agreement are vital to the outlook for the Serbian sugar sector due to the high, stable support price available in the EU sugar market. This agreement extends to Albania, Bosnia, Kosovo, Croatia, Macedonia and Serbia & Montenegro. The trade agreement included quotas for wine and meat, but trade in sugar was fully liberalised. Therefore, sugarbeet sugar produced in these countries can be exported freely to the EU without tariffs or quota restrictions, subject to strict definitions of rules of origin. At present, the agreement is in place until the end of 2005, though the likelihood remains that the agreement will be extended beyond that date.

1.39   Under the stabilisation and association process, all EU import duties for products originating from the Western Balkans, were abolished at the end of 2001. Imports of sugar originating in the Western Balkans, which previously had been zero, reached 320,000 tonnes in the 2002/03 marketing year. Serbian exports rocketed during the first quarter of 2003 to as much as 84,000 tonnes. However, this privilege has been suspended in the case of Serbia since May 2003 due to suspected sales regulation offences, whereby sugar entering the EU from Serbia did not originate from Serbian production. The suspension has currently been extended until August 2004. The Western Balkans Agreement itself will be reviewed in 2006 as part of a wider review of economic relations.

Grower/Processor Relationship

1.40   The terms of the sugarbeet supply contracts between processors and sugarbeet growers are negotiated annually between individual processors and their growers. The government is not involved in this process. Though there is no growers' association to represent the collective interests of the growers at these negotiations, growers are free to sign sugarbeet contracts with the processor of their choice. As the processor pays for transportation of the sugarbeet, there is, therefore, an element of competition for sugarbeet among processors. The actual sugarbeet price is, however, agreed at present by all processors prior to the season.

1.41   There are no institutional arrangements for revenue sharing in the industry, and, therefore, any increases in the sugar price obtained by the processor are not automatically passed on to the grower. Without formal revenue sharing arrangements, the price of sugarbeet is likely to settle at the minimum level sufficient to guarantee processors their required volume of sugarbeets for the campaign, and therefore processors will get the benefit of EU access (if restored), and not growers.

1.42   For 2003/04, the most important terms of the sugarbeet contracts covering the majority of farmers are as follows. Unless indicated otherwise, these terms apply to contracts for all beet processors.

- *Sugarbeet Price:* The basic sugarbeet price is YUD2.0 per kilogram of sugarbeet (€29 per tonne). However, this price is payable only if the sucrose content of sugarbeet is a minimum of 15.5%.

- *Sucrose Premium/Penalty:* A premium of 8% is payable for every 1% above 15.5% sucrose content, with a penalty of 8% for every 1% below 15.5% sucrose.

- *Pre-Financing:* Processors commonly provide the growers with seed, fertilisers and crop protection inputs. If the grower chooses to provide these inputs himself, the sugarbeet price rises to YUD2.2 per kilogram (€32 per tonne).

- *Haulage:* This is paid by the processor, with the grower responsible for piling sugarbeets at designated collecting points.

- *Harvesting:* Harvesting schedule is decided by processor, who will inform the grower of the harvesting and collecting schedule at least 15 days before the

harvest. It is mutually understood that the last date for the sugarbeet harvesting is 15 November.

− *Tare:* Sugarbeets with tare levels up to 25% are accepted, with the grower obliged to pay for any difference.

− *Payment Schedule:* The processor should pay for 50% of received sugarbeet by 31st December. The balance of 50% will be paid by 31st March the following year. SFIR are an exception, bringing the balance of payment forward to 31st January.

− *Barter terms:* The processor can choose to pay the grower in sugar at the parity 1:18. These terms were used primarily during the period of hyperinflation in the 1990s, and meant that a grower may choose to receive one tonne of sugar in exchange for every 18 tonnes of beet delivered.

2. AGRICULTURE SECTOR

2.1   In this chapter, we consider the place of sugarbeet in the crop rotation in Serbia. First, we assess the technical performance of the sugarbeet sector, and compare the standards achieved in Serbia with other European producers. Second, we contrast the returns from sugarbeet relative to the principal alternative crops in the sugarbeet growing regions of Serbia. The objective of this analysis is to determine the minimum price required for farmers to retain sugarbeet in their crop rotation.

Sugarbeet Growing Regions of Serbia and the Principal Alternative Crops

2.2   Sugarbeet is grown overwhelmingly in the Vojvodina province in the north of Serbia. Within this area, variations in elevation and soil type account for the spatial pattern of cultivation intensities for sugarbeet and its principal alternative crops. The most favoured sugarbeet soils, with good moisture retention during the precipitation deficit period of July and August, are to be found in the Srem, southern Banat, and southern and central Bačka regions. On these chernozem and heavy black soils, sugarbeet has the potential to achieve yields of 50-55 tonnes per hectare, with sucrose content up to 16.0%. High summer temperatures prevent sucrose content rising far above this level. The principal alternative crops in these regions are maize and soybean, though sunflower and wheat are also widely grown due to the low input requirements, and sunflower's drought tolerance.

2.3   In the north of Bačka, lighter, sandier soils are less suitable for sugarbeet, while areas of slightly higher elevation in Bačka and Banat have poorer moisture retention. Sugarbeet yields are typically ten tonnes per hectare lower in these areas, as they do not retain sufficient moisture to promote growth during the latter stages of the sugarbeet growing season in July and August, when rainfall is low. For wheat and sunflower, however, the vegetative growth period has finished by this time, and moisture requirements are consequently lower in the summer season. As a result, sunflower and wheat are the dominant crops in these areas.

Field Technical Performance

2.4   Table 2.1 presents several key indicators of the Serbian sugar industry's field technical performance since 2000/01. The area under sugarbeet has grown rapidly, from just over 40,000 hectares in 2000/01 to around 70,000 hectares in 2003/04. The information contained in the table illustrates the high variability of the sector. This is due to extreme weather conditions, including the propensity to drought and hot summers. The past four years contain two that are in many ways anomalous (2000/01 and 2003/04). In 2000/01, the effects of the Kosovo war disrupted production severely, while in 2003/04 the crop was hit first by late frost, which caused a large amount of land to be resown, and then by an extremely hot and dry summer. Thus, the most indicative years for sugarbeet productive potential are 2001/02 and 2002/03.

Table 2.1: Sugarbeet Field Technical Performance, 2000/01-2003/04

	2000/01	2001/02	2002/03	2003/04
Area harvested ('000 ha)	40.1	43.7	55.1	67.2
Sugarbeet output ('000 tonnes)	938	1,853	2,426	1,927
Sugarbeet yield (tonnes per hectare)	23.4	42.1	44.0	28.7
Sucrose content (%)	15.5	14.3	14.1	13.2
Sucrose yield (tonnes per hectare)	2.9	4.9	5.0	3.1
Tonnes Sugarbeet/Tonnes Sugar (TB:TS)	7.8	8.7	8.9	9.2
Sugar production ('000 tonnes, white value)	120	213	273	209

Source: Institute of Field Crops and Vegetables, Novi Sad.

2.5   Turning to the longer term picture of Serbian sugarbeet production, Diagram 2.1 presents sugarbeet yields and sucrose content over the past twenty years, while Table 2.2 presents averages of sugarbeet crop data for three well-defined production periods covering this same period.

Diagram 2.1: Sugarbeet Yields and Sucrose Content, 1981/82-2003/04

Source: Institute of Field Crops and Vegetables, Novi Sad.

Table 2.2: Average Sugarbeet Yields, Sucrose Content and Sugar Yields, 1981/82-2003/04

	Sugarbeet Yield (tonnes per hectare)	Sucrose Content (%)	Sugar Yield (tonnes per hectare)
Average 1981/82-1990/91	42.0	16.0	5.5
Average 1991/92-2000/01	32.4	14.4	3.8
Average 2001/02-2003/04	38.0	13.9	4.4

Source: Institute of Field Crops and Vegetables, Novi Sad.

2.6　　　　Diagram 2.1 and Table 2.2 reveal that the technical performance of the sugarbeet field sector deteriorated considerably during the political and economic instability of the early 1990s. Since the mid 1990s, performance has improved gradually, notwithstanding the disruptions of 2000/01 and 2003/04, though performance has not yet reached the levels witnessed prior to the 1990s. On further variable that has altered since the 1980s is the propensity for hotter summer temperatures. According to the Institute of Institute of Field Crops and Vegetables in Novi Sad, average temperatures in Vojvodina are now 1^0C higher than in the 1980s. At the temperatures experienced in Vojvodina, this is sufficient to constrain the formation of sucrose. Therefore, average sucrose content may not fully recover the levels experienced in the 1980s.

2.7　　　　In terms of area, sugarbeet acreage halved from an average of around 100,000 hectares per annum in the 1980s to around 50,000 hectares by the mid-1990s. Sugarbeet area has since recovered towards around 70,000 hectares by 2003/04, as noted in Table 2.1.

Regional Comparison of Field Technical Performance

2.8　　　　More instructive for determining the productive potential of Serbian sugarbeet cultivation is a comparison with other producers of sugarbeet, both in the same agro-climatic region as Serbia and across the EU as a whole. Diagram 2.2 presents the average sugarbeet yield in the EU and Serbia since 1981/82. Diagram 2.3 compares sucrose content over the same period.

Diagram 2.2: Sugarbeet Yields for Serbia and EU, 1981/82-2003/04
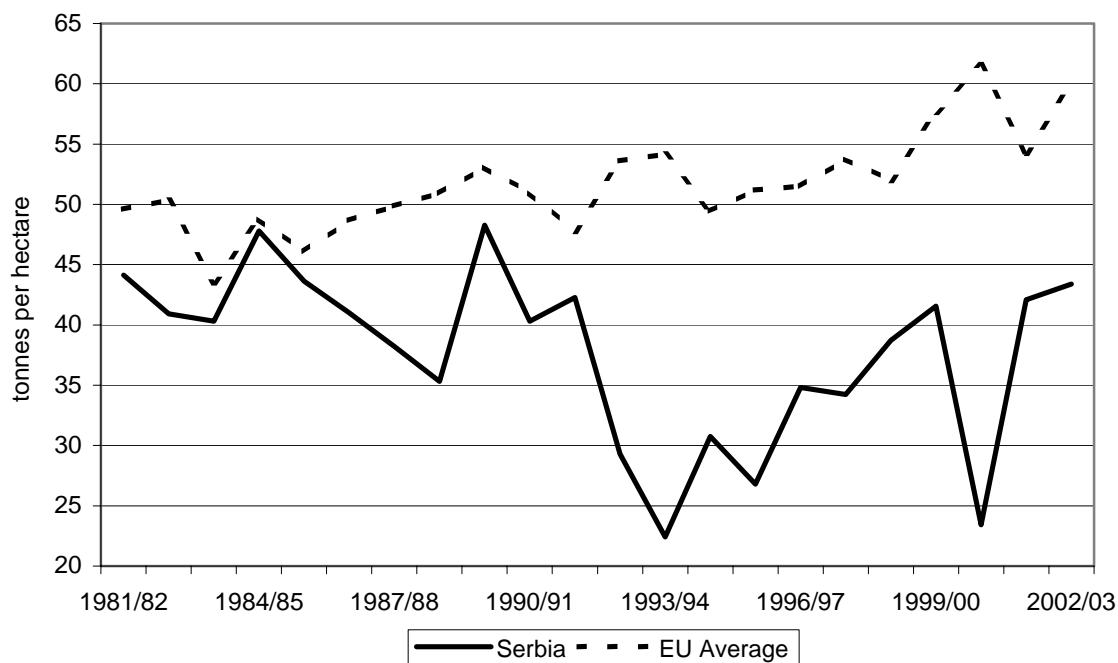
Source: CEFS; Institute of Field Crops and Vegetables, Novi Sad.

2.9   Diagram 2.2 reveals that sugarbeet yields in Vojvodina and the EU were similar in the mid 1980s, before diverging significantly during the early and mid 1990s. With the exception of the poor 2000/01 season, Serbian yields have since closed the yield gap, though the disparity remains considerable, particularly as EU yields have followed an upward trend over the entire period. Serbian yields, therefore, have the potential for significant improvement, assuming EU farming techniques can be translated to Serbian conditions.

Diagram 2.3: Sucrose Content for Serbia and EU, 1981/82-2003/04

Source: CEFS; Institute of Field Crops and Vegetables, Novi Sad.

2.10   Diagram 2.3 reveals that the sucrose content of sugarbeets in Serbia was also on a par with the EU throughout the 1980s, before Serbian sucrose levels plummeted in the 1990s. The potential for raising current sucrose content in Serbia is, therefore, extremely high, though there may be an upper ceiling of around 16% due to the high summer temperatures in Vojvodina, as discussed above.

2.11   To develop the comparison further, Table 2.3 presents a comparison of some key aspects of technical performance of the Serbian field sector with those of a comparison group of regional and EU industries.

Table 2.3: Field Performance Indicators, 2001/02-2002/03 (unless indicated)

Season	Beet Area (ha)	Beet Production (tonnes)	Beet Yield (tonnes/ha/year)	Sucrose Content (% beet)	Sucrose Yield (tonnes/ha/year)
Serbia (1986-1990)	102,426	4,160,301	40.6	16.2	6.5
EU (1986-1990)	2,030,479	102,956,201	50.7	16.3	8.3
Serbia (2001-2002)	49,376	2,139,506	43.2	14.2	6.1
EU-15	1,852,626	104,606,797	56.5	16.8	9.5
Austria	44,579	2,908,438	65.3	15.5	10.1
Italy	236,307	10,199,392	48.2	14.4	6.4
Hungary	62,000	2,916,534	47.0	15.6	7.3

Source: CEFS; LMC Database; Institute of Field Crops and Vegetables, Novi Sad.

2.12   The table reveals that Serbian field performance remains poor in comparison with the EU-15, particularly in the crucial measure of sugar yields. However, it is interesting to note that, during the late 1980s, Serbian sugar yields were comparable with those of Italy today, while sucrose content compared favourably with all comparison groups today.

2.13   Sugarbeet production in Serbia, therefore, has the potential to increase beet yields from current levels, perhaps to between 50 tonnes and 55 tonnes per hectare, and to increase sucrose content to perhaps 16%. To achieve these levels would require considerable improvement in the technical performance of the field sector from current levels.

Comparison of Field Technical Performance of Sugarbeet and Alternative Crops

2.14   The declines witnessed in sugarbeet yields since the 1980s are often attributed to the general decline in farming inputs that began during the 1990s. The reason commonly cited for the decline in inputs is the political and economic transformation experienced in Serbia over this period, and the declining availability of inputs and reduced access to credit. As an input intensive crop, sugarbeet is liable to suffer more during periods of reduced input application than crops of lower input intensity, such as sunflower and wheat. Diagram 2.4 examines this idea by presenting the indexed yields of sugarbeet compared with the low input crops sunflower and wheat.

Diagram 2.4: Crop Yields for Serbia, 1985/86-2002/03
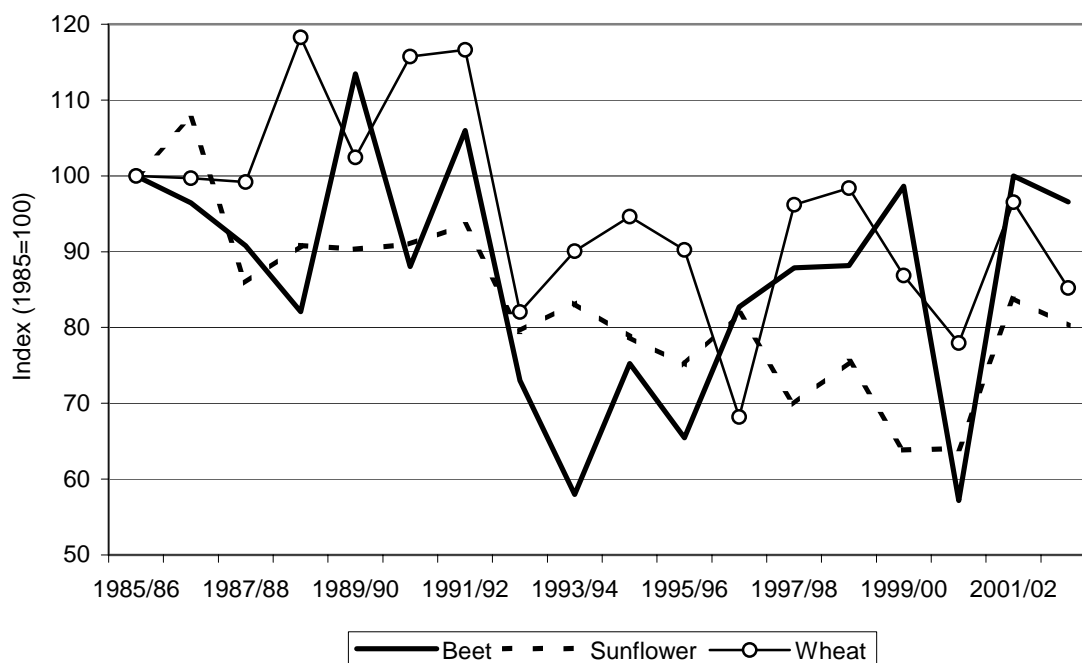
Source: Institute of Field and Vegetables Crops, Novi Sad.

2.15   Diagram 2.4 reveals that sugarbeet yields have typically fallen further than wheat and sunflower yields during periods of major disruption, such as the early 1990s and 2000/01. Moreover, sugarbeet yields have on the whole recovered further as input availability and quality has improved during the late 1990s and early 2000s (with the exception of the poor 2000/01 sugarbeet crop).

2.16   This discussion raises the question of the future potential for sugarbeet yields, and the yields of the major alternative crops to sugarbeet. Over the course of the mission conducted in Serbia for this study, industry observers referred to the potential for sugarbeet to yield 50-55 tonnes per hectare, as discussed above. The *Institute of Field and Vegetables Crops* in Novi Sad, which conducts extensive field research into the major arable crops in Vojvodina, regarded the following as indicative potential future yields for sugarbeet and its principal alternative crops in Vojvodina:

  –   50 tonnes of sugarbeet per hectare

  –   2.5 tonnes of sunflower per hectare

  –   8 tonnes of maize per hectare

  –   3.5 tonnes of soya per hectare

2.17   In the analysis that follows, we adopt these as the indicative potential future yields for sugarbeet and its principal alternative crops in Vojvodina.

Field Competitiveness of Sugarbeet and Alternative Crops

2.18   Informative though the field performance of sugarbeet in Serbia is, it is the competitiveness of sugarbeet when compared with its competitor crops that will determine the future of sugarbeet growing in Serbian. The risk that farmers will switch to alternative crops is considerable for sugarbeet processors, who require stable supplies of sugarbeet to contain costs. If farmers switch to alternative crops, even if only temporarily, a sugar industry will become severely threatened.

2.19   The competitiveness of sugarbeet in the crop rotation can be gauged by the commercial returns from sugarbeet relative to alternative crops, subject to agronomic and other constraints on land use. In this section, we consider this issue in the sugarbeet growing regions of Serbia.

2.20   In order to assess the competitiveness of sugarbeet, we first consider the gross margins, or returns, available from sugarbeet and its alternative crops. We then introduce the concept of the *profit-equalising sugarbeet price (PEP)*. The profit-equalising price determines the minimum price required by farmers in order to grow sugarbeet. At any price below this, we assume that growers would switch to the alternative with higher returns.

Gross Margin Analysis

2.21   Gross margin analysis determines the margin, or return, available to the grower from a range of crops on a per hectare basis. At its most basic level, the gross margin is calculated as:

Base Gross Margin = Total Revenue from Crop – Direct Costs of Growing Crop

2.22   The direct costs of growing include the costs of seed, fertilisers, crop protection and irrigation. Table 2.4 presents calculations for the base gross margin associated with sugarbeet and its major alternative crops in Serbia, based upon data from 2001/02 to 2003/04. Data is based upon a small sample of growers interviewed for this mission.

Table 2.4: Serbia Gross Margins, Average 2001/02-2003/04 (€per hectare, unless stated)

	Beet	Sunflower	Maize	Soya
Revenue				
- A. Price (€/tonne)	*26*	*150*	*103*	*186*
- B. Yield (tonnes/ha)[1]	*34.0*	*2.1*	*4.6*	*1.9*
C. Sales Revenue (AxB)	873	318	469	353
- D. Area Payment	*189*	*60*	*0*	*60*
E. Total Revenue (C+D)	1,062	378	469	413
F. Direct Costs	363	83	129	192
G. Base Gross Margin (E-F)	**699**	**296**	**340**	**221**

Notes: 1. Beet yields are calculated as the yield at 15.5% sucrose content, as this represents the basis of payment.

Source: LMC estimates; Industrial Crops Association

2.23   Table 2.4 reveals that sugarbeet is currently by far the most profitable arable crop available to growers in Serbia on a direct costs basis (base gross margin). However, in order to consider the longer term position of sugarbeet, we have also prepared Table 2.5. In this table we have adjusted prices and yields to more closely reflect the potential future situation for these crops in Serbia[1]. Yields are adjusted to the indicative potential yields expressed in the previous section. Under this potential future situation, beet remains as comfortably the most profitable crop.

Table 2.5: Serbia Gross Margins, Potential Future Situation (€per hectare, unless stated)

	Beet	Sunflower	Maize	Soya
Revenue				
- A. Price (€/tonne)	*26*	*102*	*81*	*177*
- B. Yield (tonnes/ha)[1]	*50.0*	*2.5*	*8.0*	*3.5*
C. Sales Revenue (AxB)	1,319	254	649	621
- D. Area Payment	*189*	*60*	*0*	*60*
E. Total Revenue (C+D)	1,508	314	649	681
F. Direct Costs	363	83	129	192
G. Base Gross Margin (E-F)	**1,145**	**232**	**519**	**489**

Notes: 1. Represents beet yield at 15.5% sucrose. In the future period, we assume beet yields will reach 50 tonnes per hectare with 15.5% sucrose content.

Source: LMC estimates; Industrial Crops Association; Institute of Field and Vegetable Crops.

2.24   The analysis suggests that beet is currently the most profitable crop, and may continue to be so in the future. However, this analysis considers only the direct costs incurred in production. There are other costs incurred in producing the crop that should also be deducted from

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[1]   Serbian prices are adjusted to reflect the difference between prevailing world prices over this period and their long run trend level.

revenues. These include the costs of machinery and labour applicable directly to the production of each crop[1]. As the additional costs associated with labour and machinery are larger for sugarbeet than the principal alternative crops, the profitability gap between sugarbeet and the alternative crops narrows when these costs are included. Nonetheless, sugarbeet remains the most profitable crop. Despite these relatively encouraging results, it should be noted that the revenues for sugarbeet include an area payment of YUD 12,300 per hectare (€189 per hectare). Of the major alternative crops, only soybean and sunflower currently receive area payments, and these are lower than those available for sugarbeet. Area payments are currently YUD 4,000 per hectare for both soybean and sunflower. Maize receives no area payment.

Profit-Equalising Price

2.25   Though sugarbeet has the highest gross margin of the major crops, this is not to say that growers will necessarily grow sugarbeet. When farmers evaluate the attraction of growing sugarbeet relative to other crops, they do not consider only the cost of growing sugarbeet. As their land can be used to grow other crops, they also take into account the return that they could earn from growing the next best crop. The sum of these two values defines the sugarbeet price that growers would have to receive for the profitability of sugarbeet production to exactly equal the profitability of the next best crop. We shall call this the *profit-equalising sugarbeet price (PEP)*.

2.26   The profit-equalising sugarbeet price represents the threshold level below which farmers can be expected to switch land out of sugarbeet into an alternative crop. This price is defined as the direct and additional costs of sugarbeet production <u>plus</u> the return (base gross margin) from the next best alternative crop. Table 2.6 presents the current profit-equalising price for sugarbeet relative to its major alternative crops[2].

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[1]   It is extremely difficult to estimate the costs of labour and machinery for each crop, as most farms tend not to record the application on each crop, but rather record the total cost for the farm as a whole. However, sugarbeet incurs a significantly higher amount of labour and machinery costs than the alternative crops in this study. Therefore, we have estimated the additional, or incremental, cost of labour and machinery applied to the sugarbeet crop only, based upon estimates derived in the course of the mission. We have, therefore, included an additional cost of €300 per hectare for sugarbeet labour, and €180 per hectare for sugarbeet machinery, giving a total of €480 per hectare for sugarbeet. These costs correspond with estimates received during the mission.

[2]   A credit equal to the amount of the area payment for sugarbeet (YUD12,300 / €189 per hectare) is included against the costs of growing sugarbeet to allow for the additional income the area payment provides for sugarbeet growers.

Table 2.6: Profit-Equalising Sugarbeet Price, Average 2001/02-2003/04 (€per hectare, unless stated)

	Sunflower	Maize	Soya
A. Base Gross Margin of Alternative Crop	**296**	**340**	**221**
Costs of Beet			
B. Direct Costs	*363*	*363*	*363*
C. Additional Labour and Machinery Costs	*480*	*480*	*480*
D. Beet Area Payment Credit	*189*	*189*	*189*
E. Total Beet Costs (B+C-D)	654	654	654
F. Beet Yield @ 15.5% Sucrose Content	34	34	34
G. Profit-Equalising Price (€ per tonne beet) [(A+E)/F]	**27.9**	**29.2**	**25.7**

2.27   The table reveals that maize represents the best alternative crop to sugarbeet, and that growers will currently switch to maize production if the price of sugarbeet falls below €29.2 per tonne of sugarbeet. At present, sugarbeet prices are set at YUD 2.0 per kilogram of beet with 15.5% sucrose content, which equates to €28.6 per tonne of sugarbeet.[1] Therefore, current sugarbeet prices are very close to the threshold sugarbeet price required to maintain sugarbeet's place in the crop rotation.[2] It is clear that sugarbeet production is currently susceptible to a fall in sugarbeet prices, or a rise in prices for alternative crops, or changes in the area payment structure for sugarbeet and alternative crops. Therefore, the future evolution of sugarbeet prices will be crucial in securing sufficient sugarbeet supplies for processors.

2.28   In Table 2.7, we consider the potential future profit-equalising price for sugarbeet using the potential yields and resulting gross margins presented in Table 2.5.

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[1]   Assumes an exchange rate of €1 = YUD70.0.

[2]   Sugarbeet growers receive a premium for sucrose content above 15.5%, and a penalty for sucrose content below this level (see Chapter 1). Clearly, these can be crucial to the continuance of sugarbeet production. Most growers currently receive less than YUD 2.0 per kilogram as sucrose content in the past three years has averaged below the required 15.5%.

Table 2.7: Profit-Equalising Sugarbeet Price, Potential Future Situation (€per hectare, unless stated)

	Sunflower	Maize	Soya
A. Base Gross Margin of Alternative Crop	**232**	**519**	**489**
Costs of Beet			
B. Direct Costs	*363*	*363*	*363*
C. Additional Labour and Machinery Costs	*480*	*480*	*480*
D. Beet Area Payment Credit	*189*	*189*	*189*
E. Total Beet Costs (B+C-D)	654	654	654
F. Beet Yield @ 15.5% Sucrose Content	50	50	50
G. Profit-Equalising Price (€per tonne beet) [(A+E)/F]	**17.7**	**23.5**	**22.9**

2.29   In the future, with potential yields achieved for all crops, the position of sugarbeet appears far more secure, though sugarbeet production remains susceptible to a fall in sugarbeet prices, or a rise in prices for alternative crops, or changes in the area payment structure for sugarbeet and alternative crops.

Impact on Profit-Equalising Sugarbeet Price of Removing Area Payments

2.30   Table 2.8 highlights the current vulnerability of sugarbeet production to sugarbeet price movements and policy changes. As we have discussed, sugarbeet is currently at an advantage to other crops because it receives a relatively high area payment. Table 2.8 therefore presents the current profit-equalising sugarbeet prices from Table 2.6, adjusted for a situation where area payments for all crops are removed (or, alternatively, where payments are equal for all crops, as is increasingly envisaged in the policy reforms of the European Union).

Table 2.8: Profit-Equalising Sugarbeet Price, Average 2001/02-2003/04, Excluding Area Payments

	Beet	Sunflower	Maize	Soya
Base Gross Margin (€per hectare)	510	236	340	161
PEP Beet (€per tonne beet)	**na**	**31.7**	**34.8**	**29.5**

2.31   Table 2.8 reveals that, if area payments were to be unified, sugarbeet would still represents the most profitable crop on a direct costs basis (base gross margin). However, after including the additional labour and machinery costs of producing beet, the profit-equalising sugarbeet price rises to €34.8 per tonne of sugarbeet against the best alternative crop, maize. Thus, growers would switch to maize at any sugarbeet price below €34.8 per tonne, which equates to YUD 2.4 per kilogram. This is above the YUD 2.0 per kilogram currently available to sugarbeet growers with 15.5% sucrose content. Therefore, the current place of sugarbeet in the rotation is crucially dependent upon the area payment structure.

2.32   We can extend this analysis further by considering the future situation where area payments are removed, <u>and</u> crops achieve their forecast potential yields. Table 2.9 presents the future profit-equalising sugarbeet prices from Table 2.7, adjusted for a situation where area payments for all crops are removed.

Table 2.9: Potential Future Profit-Equalising Sugarbeet Price, Excluding Area Payments

	Beet	Sunflower	Maize	Soya
Base Gross Margin (€per hectare)	956	172	519	429
PEP Beet (€per tonne beet)	**na**	**20.3**	**27.3**	**25.5**

2.33   When higher yields are achieved in the future, the removal of area payments results in the profit-equalising sugarbeet price falling to €27.3 per tonne of sugarbeet against maize. This equates to YUD 1.9 per kilogram, which is just below the YUD 2.0 per kilogram currently available to sugarbeet growers with 15.5% sucrose content. Therefore, the future place of sugarbeet in the rotation becomes marginal without the current area payment structure in place.

2.34   In future, for processors to be able to guarantee sufficient supplies of sugarbeet, the price of sugarbeet may have to be raised from its current level if the area payment structure alters. If EU access is restored, processors may utilise these increased margins to pay higher sugarbeet prices in order to guarantee sufficient quantities of sugarbeet to exploit preferential access to EU.

3. PROCESSING SECTOR

3.1   Serbia's sugarbeet processing facilities are now largely in private hands. In 2003, seven factories operated, and another (SFIR's Nova Crnj facility) was commissioned with a view to operating in 2004. There are also four state-owned factories, none of which operated in 2003, and there appears to be little prospect of any of these operating in the future.

3.2   Table 3.1 contains a list of all operating and non-operating factories, together with their processing capacity and sugar output in the 2003 sugarbeet campaign. MK Commerce is the largest processor, owning over half of the country's operational capacity and producing more than 50% of Serbia's sugar output. Hellenic Sugar is the second largest processor, with SFIR lying third. However, if SFIR brings the Nova Crnja factory back into operation, it has the potential to increase output to a level similar to that of Hellenic Sugar.

Table 3.1: Ownership and Capacities of Factories, 2003/04

Ownership/Name	Capacity	Sugar Production
	tonnes sugarbeet per day	*tonnes*
MK Commerce	*18,000*	*120,000*
Bač	4,000	17,700
Kovačica	4,000	29,700
Pećinci	4,000	27,600
Vrbas	6,000	45,000
Hellenic Sugar	*10,000*	*62,400*
Crvenka	6,000	31,900
Žabalj	4,000	30,500
SFIR	*9,000*	*26,600*
Senta	5,000	20,900
Nova Crnja	4,000	5,700
State	*19,000*	*0*
Zrenjanin	5,500	0
Kovin	4,500	0
Mitrovica	5,000	0
Sabac	4,000	0
Total	**56,000**	**209,000**

3.3   One of the striking features of the processing sector in Vojvodina is that a number of factories are poorly located in terms of their sugarbeet supply. The best sugarbeet regions (i.e., where sugarbeet has its greatest comparative advantage relative to alternative crops) are Srem (southern Vojvodina), central/southern Bačka and southern Banat. All of MK Commerce's factories lie within these regions. SFIR's factories are poorly located in relation to these areas, while Hellenic Sugar's factories are situated on the fringes of these regions. As a result, SFIR and Hellenic Sugar have to haul sugarbeets (at their expense) over relatively long distances. Thus, the

geographical location of MK Commerce's factories gives the company a competitive advantage over its competitors.

Factory Technical Performance

3.4   The Serbian processing industry is characterised by medium-sized factories, which are in the process of transition from the previous state-management to private entities. With the injection of private funds, factories are currently re-assessing technical performance levels as they attempt to move towards the performance standards of western European factories. Nonetheless, the factory sector faces many challenges, among the most important being the relatively short length of the processing season. The Serbian processing industry suffers from a relatively short season, which usually lasts for between 80 and 90 days per annum, as is the case in much of the EU. This is largely due to cold winters, which increase the risk of frozen sugarbeets from December onwards. The short season limits the extent to which processing capacity can be utilised. As fixed costs represent a significant part of total beet processing costs, short processing campaigns thereby increase many unit fixed cost indicators.

3.5   Although these technical issues are important, the future size and structure of the processing sector overall will depend largely on the restoration of preferential access to the EU market. At present, processing capacity is greater than the supply of beets, and without EU access it is likely the processing sector will have to contract.

3.6   Table 3.2 presents a summary of the key factory performance indicators since 2000/01.

Table 3.2: Key Factory Performance Indicators, 2000/01-2003/04

Season	Number of Factories	Average Factory Capacity (tbd)	Average Factory Throughput per day (tbd)	Duration of Slicing Season (days)	Sugar Produced (mt, wv)
2000/01	9	4,889	2,964	35	119,779
2001/02	9	4,833	3,116	66	212,600
2002/03	8	4,813	3,949	77	273,805
2003/04[1]	7	4,714	3,758	73	209,000

Note: 1. Excludes Nova Crenja, which operated for just two days of the campaign.

3.7   Factories in Serbia average around 4,800 tonnes of sugarbeet per day (tbd) capacity. However, average throughput is significantly below this level, and the duration of the season is relatively short. Together, these two factors mean that factory capacity is poorly utilised. Total fixed costs must, therefore, be spread over relatively small levels of sugar production. As a result, unit fixed costs are comparatively high when expressed on a per tonne of sugar basis.

3.8   The privatisation process in Serbia has been accompanied by the beginnings of a rationalisation of processing capacity. The number of factories in operation fell to seven in 2003/04, though eight remain operational. Though there are no technical reasons why the

additional factories could not operate, they are restricted by the available market for sugar. The four state factories in Table 2.1 are unlikely to function in future, and it is likely that the process of rationalisation will continue over the next few years. Many producers in Central and Eastern Europe have experienced similar patterns in the run-up to EU accession.

3.9   The trend in Serbia over the past five years is illustrated in Diagram 2.1, which also shows the impact of this rationalisation process on capacity utilisation. The average quantity of sugar being produced by each factory has increased from around 20,000 tonnes in 1998/99 to around 30,000 tonnes in 2003/04, notwithstanding the exceptionally poor season of 2000/01. We consider the cost implications of further factory rationalisation in Serbia later in the chapter.

Diagram 2.1: Comparison of the Number of Factories Against Sugar Produced per Factory
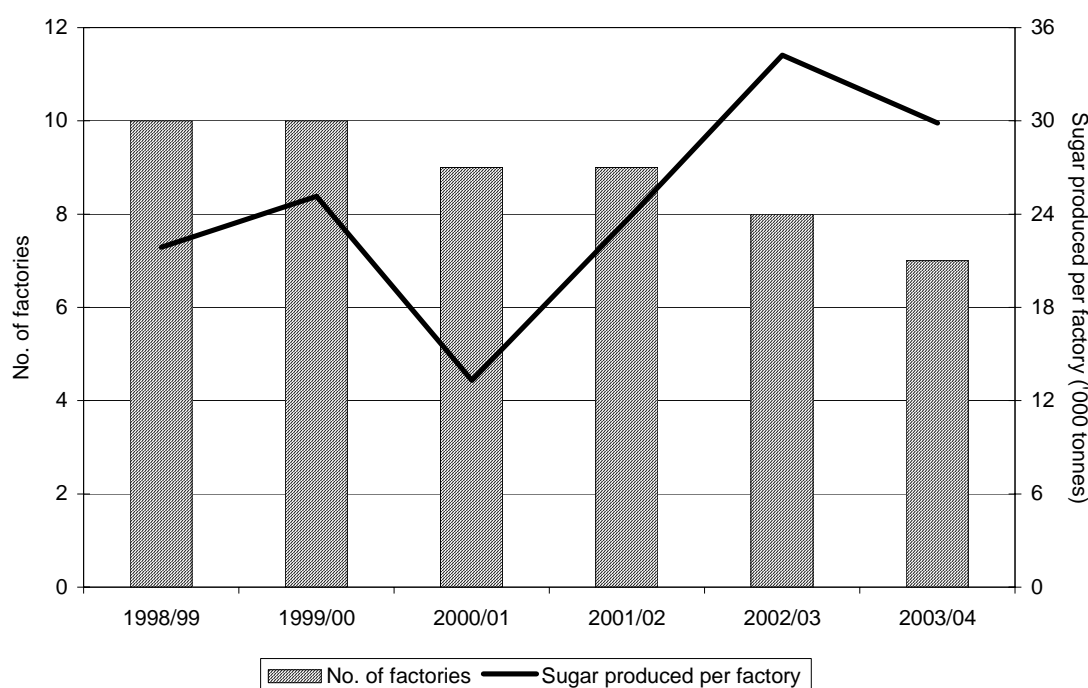
Regional Comparison of Factory Technical Performance

3.10   Table 3.3 compares the technical performance of the Serbian processing industry with that of the EU-15 and two new entrants, the Czech Republic and Hungary, whose industries have received considerable investment since privatisation.

Table 3.3: Factory Performance Indicators, 2001/02-2002/03

Season	Number of Factories	Average Factory Capacity (tbd)	Slicing Season (days)	Average Factory Throughput (tonnes/year)	Average Factory Throughput (tonnes/day)	Sucrose Recovery (%)	Sugar Produced (tonnes, wv)	Sugar per tonne of Slicing Capacity (tonnes)
Serbia	9	4,823	71	254,569	3,533	80.2	263,557	6.5
MK Commerce	*4*	*4,500*	*67*	*245,358*	*3,656*	*78.2*	*108,403*	*6.0*
SFIR	*1*	*5,250*	*75*	*321,521*	*4,243*	*80.0*	*37,500*	*7.2*
Hellenic Sugar	*2*	*5,000*	*78*	*309,670*	*3,952*	*82.2*	*76,500*	*7.7*
EU-15	135	9,923	85	777,885	9,128	86.6	15,757,523	11.8
Czech Republic	13	3,238	na.	303,946	na.	na.	523,450	12.4
Hungary	7	6,300	na.	447,529	na.	85.8	390,984	9.5

3.11   Average factory size in Serbia is broadly similar to that of the new entrants, but remains much smaller than the average of the EU-15. However, as we mentioned previously, further rationalisation of the Serbian industry is likely to occur over the next few years, which will increase factory size to a level closer to that in the EU. We discuss this prospect later in the chapter.

3.12   As we discussed in the previous section, factory capacity in Serbia is currently large relative to sugarbeet supply, and this is borne out by its technical performance. This is reflected in the relatively low level of capacity utilisation, which is presented in the final column of the table (and is expressed in terms of tonnes of sugar produced per tonne of installed daily sugarbeet processing capacity). Sugar produced per tonne of slicing capacity in Serbia is barely half of the average achieved in the EU, or that achieved in the Czech Republic. Capacity utilisation is a key driver of processing costs. However, processors only have partial control of this aspect of their performance, which will be affected by a variety of influences, in particular future access to the EU market.

3.13   Sucrose recovery rates are also low by international standards. However, there is no reason why the investment that is now flowing into the sector should not raise performance to levels approaching those witnessed in Hungary and the EU.

Costs of Processing

3.14   The technical performance standards achieved by the Serbian sugarbeet processing industry have a large bearing on the costs of producing sugar in the country. However, other factors, out of the control of processors, also impact upon processing costs. These include the quality of sugarbeets received, particularly in terms of sucrose content, the costs of inputs such as fuel and labour, and the costs of hauling sugarbeets to the factory. In this section, we present LMC's estimates of the costs of processing sugar in Serbia, and compare these with an international comparison group. We present estimates of processing costs under three scenarios, each one representing a different time period as the Serbian processing sector evolves. The sections are:

– *2004/05:* For the next campaign, we assume output of 300,000 tonnes of sugar.

– *Future – Short/Medium Term:* In this period, which represents perhaps the next 2-3 years, we consider output with and without EU access, and assume that only limited rationalisation and investment take place in the sector.

– *Future – Medium/Long Term:* In this period, covering the situation that is expected to prevail by the end of the decade, we assume considerable further rationalisation occurs, with the number of factories dependent upon EU access.

In each case, we assume input prices remain at current levels.

Derivation of Processing Costs

3.15   The full costs of processing are defined to include all fixed and variable costs, except interest. These costs are divided into cash costs, which are defined as out-of-pocket expenses that must be met if an operation is to continue operating in the short term, and fixed costs, which must be covered if the operation is to remain viable in the long term.

The cash costs of processing include:

– Transporting and receiving sugarbeets
– Fuel and chemicals
– Labour
– Repairs and maintenance
– Administration, which we assume to be 15% of the total processing cost.
–

The non-cash (fixed) costs of processing include:

– Depreciation, which we estimate based on the full replacement cost of capital and a depreciation period of 22.5 years.

3.16   Lastly, the revenues generated by the sales of molasses and sugarbeet pulp accrue solely to the processor in Serbia, and are, in the analysis that follows, credited against the costs of processing as a *by-product credit*.

Scenario 1: 2004/05 (Sugar Output of 300,000 Tonnes)

3.17   Table 3.4 presents the estimated costs of processing sugar in Serbia for 2004/05. The forecast is based upon sugar production of 300,000 tonnes, white value, based upon the forecast area for sugarbeet of 65,000 hectares. Under this scenario, the costs of processing are the same irrespective of the restoration of EU access, because the output will be similar in both cases.

Table 3.4: Serbia Processing Costs, 2004/05 (€per tonne sugar)

	€per tonne
Haulage	20
Cash Costs	149
By-Product Credit	(48)
Total Net Operating Costs	**121**
Non-Cash Costs	68
Full Costs	**189**

Source: LMC estimates.

Scenario 2: Future – Short/Medium Term (Limited Rationalisation, Sugar Output Dependent upon EU Access)

3.18   With the prospect of preferential access to the EU market being restored in August 2004, it is likely that sugar production will increase in the future. On the other hand, if preferential access to the EU market were withdrawn, it is likely that sugar production would quickly return to around the level of domestic consumption, with an allowance for annual yield variability.

3.19   In order to consider the impact of these two alternative situations on processing costs, we have modelled two scenarios for the short/medium term future, which may cover perhaps the next 2-3 years. We assume there is only limited further rationalisation of the sector, and that eight factories operate. The estimates are based upon current input prices.

3.20   In the first scenario, we assume that, with EU market access restored, production will increase to equal the current capacity of 400,000 tonnes. In the second, without EU access, we assume that sugar production will contract to 256,795 tonnes, which is equivalent to domestic sales of 233,450 tonnes, plus 10% to allow for annual yield fluctuations. We assume that sales into the domestic market represent domestic consumption less approximately 30,000 tonnes, to allow for the likelihood of some inflows of sugar. We present the production costs associated with these scenarios in Table 3.5, alongside our estimate for 2004/05 from Table 3.4.

Table 3.5: Serbia Processing Costs, Future – Short/Medium Term (€per tonne sugar, unless stated)

Time Period EU Access	2004/05 With/Without	Future - Short/Medium Term With	 Without
Sugar Production (tonnes)	300,000	400,000	256,795
Haulage	20	20	20
Cash Costs	149	136	156
By-Product Credit	(48)	(48)	(48)
Total Net Operating Costs	**121**	**108**	**128**
Non-Cash Costs	68	51	80
Full Costs	**189**	**159**	**208**

Source: LMC estimates, based on 2004/05 capacities and current input prices.

3.21   Table 3.5 reveals that the total costs of processing sugar would fall by approximately €30 per tonne if production increased to 400,000 tonnes, but would rise by almost €20 per tonne if production were to contract to domestic production levels.

Scenario 3: Future – Medium/Long Term (Considerable Rationalisation, Sugar Output Dependent upon EU Access)

3.22   With the injection of private and foreign investment into the Serbian processing sector, factories will adopt more advanced practices and gradually eliminate much current inefficiency. In this section, we consider the possible impact of factory rationalisation on Serbia's processing costs by the end of the current decade. To do this, we make the following assumptions:

(a)   The number of factories reduces from eight to five with EU access, and from eight to four without EU access.

(b)   Capacity utilisation improves significantly and the campaign length extends.

(c)   In season labour numbers decline from the current average of around 450 per factory to 250 per factory.

(d)   Energy efficiency improves by approximately one-third.

3.23   Applying these assumptions, we have modelled the future potential processing costs in Serbia following rationalisation both with and without EU access. Table 3.6 presents the results of these two rationalisation scenarios, alongside the 2004/05 and short/medium term future scenarios from Table 3.5.

Table 3.6: Processing Costs in Serbia with Rationalisation, Future - Medium/Long Term (€per tonne sugar)

Time Period	2004/05	Future - Short/Medium Term		Future - Medium/Long Term	
EU Access	With/Without	With	Without	With	Without
Rationalisation	No	No	No	Yes	Yes
Sugar Production (tonnes)	300,000	400,000	256,795	400,000	272,553
Number of Factories	8	8	8	5	4
Haulage	20	20	20	20	20
Cash Costs	149	136	156	87	90
By-Product Credit	(48)	(48)	(48)	(48)	(48)
Total Net Operating Costs	**121**	**108**	**128**	**59**	**61**
Non-Cash Costs	68	51	80	44	46
Full Costs	**189**	**159**	**208**	**103**	**108**

Source: LMC estimates.

3.24 Table 3.6 reveals that, with a rationalisation to four or five factories, Serbia's processing costs will fall by around €80-€85 from 2004/05 levels, to close to €100 per tonne. Following rationalisation, costs will be broadly similar both with and without EU access. This is because the number of factories is reduced further (to four factories) without EU access, as the sector contracts to the size of the domestic market.

Comparison of Processing Costs with Regional Producers

3.25 We can compare the costs of the Serbian processing industry, under each of the three time period scenarios discussed above, with the equivalent processing costs of the current EU-15, and the new entrants to the EU from May 2004, whose industries have received considerable investment since privatisation.

3.26 Within the EU-15, full processing costs range from approximately €65-€200 per tonne, with most industries having costs closer to €100 per tonne, excluding interest payments. For the new entrants to the EU from May 2004, full processing costs are found within a similar range.

3.27 Table 3.6 reveals that, for 2004/05, without any significant rationalisation in the Serbian processing sector, and even with renewed access to the EU, processing costs in Serbia would remain above those of the majority of EU-15 producers. This is for several reasons:

(i) Though Serbia benefits from relatively low wages in its factories, this is partially offset at present by the large numbers of employees — a legacy of state-managed facilities.

(ii) One significant area where Serbia's cost performance suffers is in the high volume of sugarbeet that has to be processed for every tonne of sugar recovered, as expressed in the high TBTS ratio (see Chapter 2). To improve this

crucial variable would require an improvement in sucrose content on the agricultural side, and a higher sucrose recovery in the factory.

(iii)   Serbia has high fuel costs, due to inefficient fuel usage.

3.28   Costs in several acceding EU member states offer an indication of the potential for Serbia's factories. These producers also benefit from low wage rates, but private investment and factory rationalisation has led to improved standards of labour and fuel efficiency, as well as higher capacity utilisation rates. We estimate that several acceding countries are now able to process sugarbeets more cheaply than the EU average. In Table 3.6, we include our estimates for Serbian processing costs for the medium/long term future, following factory rationalisation and efficiency improvements. Under these scenarios, Serbian costs compare favourably with the EU average and with many of the best performers among the new EU members states.

Refining Imported Raw Sugar at Sugarbeet Factories

3.29   One theoretical possibility for the Serbia sugar sector is to follow the lead of a number of regional producers and refine imported raw sugar at existing sugarbeet factories. This method supplies sugar to the domestic market in Croatia, Slovenia and Romania among others.

3.30   Foremost among the advantages of importing raw sugar is the potential for increasing the length of the processing campaign and, therefore, improving capacity utilisation in the factory if raw sugar is processed outside of the sugarbeet processing season. However, despite the accepted advantages of processing imported raw sugar, there are factors particular to Serbia that make the viability of such an undertaking less clear cut.

−   Other regional producers who have imported raw sugar for local refining have structural deficits in the domestic market. Thus, there is an import requirement for sugar in most years, and domestic duty structures have been tailored towards the importation of raw sugar for domestic refining, as opposed to importing white sugar. By contrast, Serbia does not have a structural deficit in sugar production, and any imported raw sugar would, in most years, displace domestic sugarbeet sugar.

−   Though Serbia does experience intermittent deficits in its domestic market due to weather variations, as occurred in 2000/01 and 2003/04, the irregular nature of these deficits is likely to discourage producers from investing in the start-up capital required to receive and process raw sugar.

−   Serbia does not have a coastal port facility, and the costs of freighting raw sugar up the Danube from the Black Sea coast to Novi Sad, and onward by rail, road or barge to the destination sugarbeet factory, are relatively high.

3.31   One way of addressing the first of these problems, if EU access were restored, would be to export a large part of domestic production to the EU, thereby creating a deficit in the domestic market that could be filled by refining imported raw sugar. This approach has been adopted by Croatia in recent years. Nevertheless, the freight cost problem remains, and the economics may prove less favourable for Serbia than a coastal producer. Moreover, recent

indications are that Serbian processors plan to offer a voluntary restraint on exports to the EU, limiting exports to 160,000 tonnes per annum. This figure would not be enough to create a domestic market deficit if domestic production expanded to the current production capacity of 400,000 tonnes, with domestic consumption at around 240,000 tonnes.

3.32   Finally, in the course of the mission undertaken to Serbia in preparation of this report, a number of processors expressed doubts concerning the economic viability of processing importing raw sugar. Feasibility studies had been undertaken by several processors, and none had found the economics of importing and refining raw sugar to be viable at present at existing sugarbeet factories.

4. MARKETS AND REVENUES FOR SERBIAN SUGAR

4.1   In this chapter, we turn to the marketing of Serbian sugar. In so doing, we will consider the likely prices and volumes of sales to be faced in three key markets:

-        Domestic market

-        EU market

-        World/regional market

4.2   The average selling price of Serbian sugar is determined predominantly by sales into the domestic and EU markets. However, it is possible that, in future, if EU access were to remain withdrawn, temporary surpluses would have to be sold into regional markets at world market prices. As discussed in Chapter 1, Serbia's access to the EU under the terms of the Western Balkans agreement is currently suspended. However, this suspension is currently due to be lifted in August 2004.

Domestic Market

4.3   The political and economic upheavals of the 1990s have affected the domestic market for sugar in Serbia, and the previously accessible markets of the Former Republic of Yugoslavia have been effectively removed, for the time being at least, for Serbian production. Diagram 4.1 presents the level of domestic consumption for Serbia since 1996/97.

Diagram 4.1: Domestic Consumption, 1996/97-2003/04
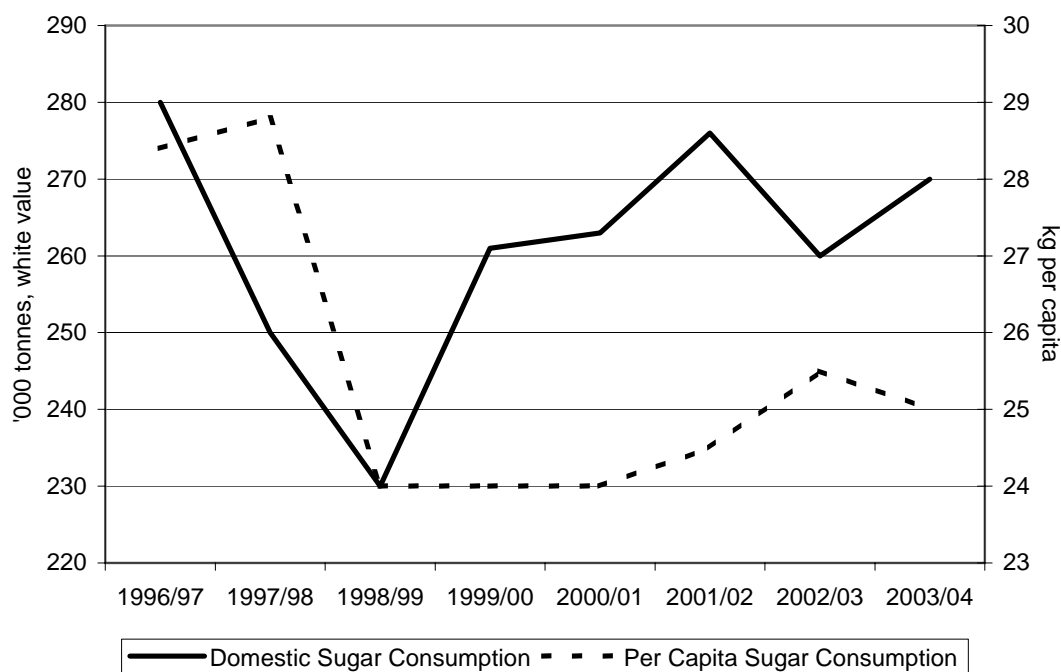
Source: Serbia Ministry of Agriculture

4.4   Though the actual annual estimates for consumption in Serbia may be somewhat unreliable given the difficulty in collating data and monitoring trade during the 1990s, the approximate levels of consumption, both in aggregate and on a per capita basis, are indicative of the prevailing situation in Serbia. Though domestic consumption is currently around 260,000, previous levels as high as 280,000 tonnes have been recorded, and this may represent a viable target for domestic consumption in the near term. Moreover, consumption per capita of around 25 kilograms per annum compares with an EU-15 level of around 38 kilograms, indicating that levels of consumption have considerable room for expansion.

Domestic Market Prices

4.5   Serbia has had a supply deficit in sugar for the past ten years or so, and, therefore, in normal circumstances, the price of sugar in the domestic market reflects the price of importing sugar from the EU. Over the past couple of seasons, Serbian producers have had duty-free access to the EU sugar market, and the industry has been able to expand to produce a surplus of sugar, notwithstanding the poor 2003/04 season. As a result, prior to the suspension of EU access, all surplus production could be exported to the EU, the domestic market could be cleared of surpluses and, consequently, prices have continued to reflect import parity conditions, despite these production surpluses.

4.6   As this situation is likely to prevail once again in the near future, we assume that sugar prices in the Serbian domestic market will reflect the cost of making imports from the EU, i.e., the import parity price. Table 4.1 presents the derivation of the current import parity price for Serbia based on prices prevailing in early March 2004.

Table 4.1: Derivation of Import Parity Price, March 2004 (YUD/€ per tonne, unless stated)

	YUD per tonne	€ per tonne
World White Sugar Price (US$/tonne)	204	204
YUD/US$: €US$	54.7	0.80
World White Sugar Price	11,146	162
Tariff (@20.5%)	2,285	33
Levy (@ YUD18/kg)	18,000	262
Implied logistics costs	4,568	66
Final price	**36,000**	**524**

Source: LIFFE No. 5 Futures contract, first position; Serbia Ministry of Agriculture; LMC estimates.

4.7   Table 4.1 reveals that the current import parity price for sugar is around YUD 36,000, or €525, per tonne. However, it is worth noting that actual market prices in Serbia were below this price at the time of writing (March/April 2004), as suspension of EU preferential access had left many producers with a surplus of sugar available for the domestic market. Domestic prices are unlikely to rise while this supply overhang persists in the system. In the future, we expect currently depressed world prices to revert to the trend world price level, which gives an import parity price of around €580 per tonne.

4.8   In order to forecast import parity prices for 2004/05, we have used actual futures prices for 2004/05 quoted on the LIFFE exchange at the time of writing (April 2004). Longer term, we expect world prices to revert to their long term trend levels from their currently depressed levels. Table 4.2 presents our estimates of the import parity price for 2004/05, and the future import parity price at the long term trend level.

Table 4.2: Import Parity Prices, 2004/05 and Future Trend Value (YUD/€ per tonne, unless stated)

	2004/05		Future	
	YUD per tonne	€ per tonne	YUD per tonne	€ per tonne
World White Sugar Price (US$/tonne)	204	204	260	260
YUD/US$: €US$	55	1	55	1
World White Sugar Price	11,144	162	14,209	207
Tariff (@20.5%)	2,380	33	2,913	42
Levy (@ YUD18/kg)	18,000	262	18,000	262
Implied logistics costs	4,655	66	4,568	66
Final price	**36,178**	**523**	**39,691**	**578**

EU Market

4.9   The market for sugar in the European Union is tightly regulated, and duty levels are such that imports are effectively restricted to those producers enjoying preferential access terms. Annex 1 provides a detailed overview of the EU sugar market, while Annex 2 explains the complex sugar policy of the EU and the options for policy reform currently under discussion.

4.10   The amounts of sugar entering the EU under the Western Balkans agreement form only a small fraction of EU consumption of over 13 million tonnes per annum. Nevertheless, inflows of Western Balkans sugar do have the ability to disrupt regional EU markets within the EU, such as in Greece or Italy, at least in the short term. In the medium term, the EU quota system adjusts to absorb inflows of sugar by reducing domestic production quotas for EU producers.

4.11   In an effort to restore good relations with the EU, Serbia's three processing companies have proposed to the Serbian government that they limit their future exports to the EU to 160,000 tonnes, which equates to their current surplus production capacity.

EU Market Prices

4.12   Exports to the European Union under the Western Balkans agreement receive the supported EU market price in the destination markets. The EU pricing system is explained in detail in Annex 2. For Serbian sugar, the overwhelming majority of exports have entered the Italian market. We have, therefore, used the market price in Italy in our estimations of the EU market price. The cost of making exports must be deducted from this price to give the factory gate price in Serbia. Thus, EU export market sales reflect the export parity price. The derivation of the EU export parity price is presented in Table 4.3. We assume this price will apply in 2004/05, as EU support prices are unchanged for the coming year.

Table 4.3: Export Parity Calculations, 2004/05 (YUD/€ per tonne, unless stated)

	YUD per tonne	€ per tonne
EU market price (€/tonne)	700	700
YUD/€	68.7	-
EU market price	48,090	700
Logistics costs	4,568	66
Final price	**43,522**	**634**

4.13   Table 4.2 reveals that the current and 2004/05 export parity price for sugar is around YUD 43,500, or €635, per tonne. Preferential sugar exports to the EU, therefore, generate revenues of over €100 per tonne more than domestic sales at current prices.

Implications of EU Reform

4.14   Fundamental reform of the EU sugar regime is currently under discussion, and it is accepted that the regime will have to adjust in some manner to the various pressures it now faces. If Serbia is to export under preferential terms to the EU market, by far the most important aspect of reform will be the implication for prices in the EU. In Annex 2, we present a detailed assessment of the various reform options under consideration in the EU, and the implications for market prices in 2015/16 (following completion of the reform process) under each scenario. These are reproduced here in Table 4.4. From each of these future market prices should be deducted the costs of exporting. The export parity prices for 2015/16 are included in Table 4.4 as the final row[1].

Table 4.4: Long Term Future EU Sugar Market Price (€per tonne, white value)

	Fixed Quotas Scenarios				
Reduction in Tariffs	20%		36%		EU Commission
Safeguard Duties	Retained	Eliminated	Retained	Eliminated	Price Cuts Scenario
2015/16 Sugar Price	683	571	606	494	450
% Price Cut	-6%	-21%	-16%	-32%	-38%
Export Parity EU Price in Serbia	617	505	540	428	384

Source: LMC estimates; EU Commission

World/Regional Market

4.15   Any sugar that Serbia is unable to sell in the domestic or EU markets has to be sold on the world market. In reality, this means the deficit regional markets located close to Serbia, such as Romania. In the absence of tariff preferences in these markets, sales are made at world market prices, though Serbia is able to extract the value of its freight advantage, courtesy of its geographical proximity. The derivation of the world export parity price received for Serbian sugar in regional markets is presented in Table 4.5.

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[1]   This assumes Serbia is not a member of the EU. If it were, it would receive the EU support price.

Table 4.5: Export Parity Prices, 2004/05 and Future Trend Value (YUD/€per tonne, unless stated)

	2004/05		Future	
	YUD per tonne	€per tonne	YUD per tonne	€per tonne
World White Sugar Price (US$/tonne)	204	204	260	260
YUD/US$: €US$	55.9	0.81	55.9	0.81
World White Sugar Price	11,394	166	14,528	211
Logistics costs (EU to regional market)	4,568	66	4,568	66
Regional market price (excl. duties)	15,962	232	19,097	278
Logistics costs (Serbia to regional market)	2,061	30	2,061	30
Ex-factory price in Serbia	**13,901**	**202**	**17,036**	**248**

4.16   Table 4.4 reveals that the current export parity price for sugar is around YUD 13,600, or €200, per tonne. In the future, we expect currently depressed world prices to revert to the trend world price level, which gives an export parity price of almost €250 per tonne. In Chapter 5, we present the full costs of producing sugar in Serbia. We estimate that, following rationalisation, the minimum full cost of producing sugar in Serbia in future will be over €300 per tonne. As this cost is greater than the estimated price obtainable by selling into regional markets, it is extremely unlikely that Serbia will become a structural producer of sugar for the world market.

Outlook for Average Selling Prices

4.17   The outlook for average selling prices in Serbia over the next few years will be largely determined by two inter-related factors:

>   (i)   The future level of sugar production.

>   (ii)   Access to the EU market.

4.18   Today, the industry has the capacity to produce around 400,000 tonnes of sugar[1]. However, domestic consumption is estimated at around 260,000 tonnes, and appears to be growing slowly. This suggests the industry has, at present, the capacity to produce at least 140,000 tonnes for export, depending on the volume that can be sold into the domestic market. Whether or not this sugar can be exported duty-free to the EU will have far-reaching implications for processors' future average selling price. This is because the alternative to selling this sugar in the high-priced EU market is to sell it in regional markets where it would earn a far lower price.

4.19   As mentioned above, Serbia's three processing companies have proposed to the Serbian government that they limit their future exports to the EU to 160,000 tonnes, which equates to close to their current surplus production capacity. Assuming that an arrangement similar to this is agreed, we have prepared forecasts of average selling prices with and without duty-free access to the EU market from August 2004. If duty-free access is, for some reason, not

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[1]   This figure is based on a the combined processing capacity of MK Commerce, SFIR and Hellenic Sugar of 37,000 tonnes sugarbeet per day, 80 operating days, sucrose content of 16% and a sucrose recovery rate of 84%.

restored, there is little prospect of production exceeding domestic demand in the long term, because the return from regional export sales would be insufficient to cover processors' costs, as explained in the previous section.

4.20   To determine the implications for average selling prices with and without EU access, and over the three time periods described in Chapter 3, we have assumed that:

(a)   With EU access, the domestic production surplus over 160,000 tonnes is sold within the domestic market, with imports supplying any domestic deficit.

(b)   *2004/05*: Indications are that around 300,000 tonnes of sugar will be produced based upon area estimates of 65,000 hectares of sugarbeet, and assuming sugar yields of around 4.6 tonnes of sugar per hectare. Prices correspond to the 2004/05 levels presented in the sections above.

(c)   *Future Short/Medium Term:* We assume that production reaches its potential capacity of 400,000 tonnes if duty-free access to the EU market is restored. Without EU access, we assume that production will be determined by the level of domestic consumption, with a 10% surplus generated, on average, due to yield variability. This surplus would be exported to regional markets at world market prices. Prices in the EU remain at current levels, while domestic and world market prices revert to the long term trend levels described in the previous sections.

(d)   *Future Medium/Long Term:* Production is again dependent upon EU access, as in the short/medium term future period. Domestic and world market prices again revert to the long term trend levels described previously, while reform in the EU market causes prices to fall by 21%, as presented in the second scenario of Table 4.4.

4.21   Table 4.6 presents the estimated selling prices under these assumptions.

Table 4.6: Average Selling Prices (€per tonne)

Time Period	2004/05		Future - Short/Medium Term		Future - Medium/Long Term	
EU Access	With	Without	With	Without	With	Without
Sales Volume (tonnes)	300,000	300,000	400,000	256,795	400,000	272,553
- EU	160,000	-	160,000	-	160,000	-
- Domestic Market	140,000	230,000	240,000	233,450	240,000	247,775
- Regional/World Market	-	70,000	-	23,345	-	24,778
Selling Price (€per tonne)						
- EU	634	-	634	-	505	-
- Domestic Market	523	523	578	578	578	578
- Regional/World Market	-	202	-	248	-	248
Average Selling Price	**582**	**449**	**600**	**548**	**549**	**548**

Source: LMC estimates.

4.22 The table reveals that for 2004/05, average selling prices are around €130 per tonne higher with EU access than without. This differential narrows to €50 per tonne in the short/medium term future period, as domestic prices rise back to trend from their currently depressed levels, and smaller volumes are sold at low prices on the world market. By the medium/long term future period, the differential is largely eliminated as EU reforms cause prices in the EU market to fall sharply.

4.23 Table 4.7 presents the sales revenue generated in each market from the volumes and prices presented in Table 4.6. The table confirms that sales revenue would be enhanced significantly with EU access, even in the medium/long term future.

Table 4.7: Sales Revenue (€million)

Time Period	2004/05		Future - Short/Medium Term		Future - Medium/Long Term	
EU Access	With	Without	With	Without	With	Without
- EU	101	-	101	-	81	-
- Domestic Market	73	120	139	135	139	143
- Regional/World Market	-	14	-	6	-	6
Total Sales Revenue	**175**	**135**	**240**	**141**	**219**	**149**

Source: LMC estimates.

5. SUSTAINABILITY OF THE SERBIA SUGAR SECTOR

5.1   The relative levels of prices and costs will determine the future economic viability of the sugar sector in Serbia. In this chapter, we draw upon the analysis of costs and prices presented in previous chapters to evaluate the sustainability of the Serbian sugar sector.

5.2   As in previous chapters, we present results, with and without EU access, for three time periods, with each time period corresponding to different periods of adjustment in the Serbian industry:

   –   *2004/05:* For the next campaign, we assume output of 300,000 tonnes of sugar.

   –   *Future – Short/Medium Term:* In this period, which represents perhaps the next 2-3 years, we assume that only limited further rationalisation and investment in the processing sector.

   –   *Future – Medium/Long Term:* In this period, which is intended to represent the situation that might prevail by the end of the decade, we assume further considerable rationalisation occurs, with the number of factories dependent upon EU access.

5.3   For each period, we consider the profitability of the sugar industry both with and without area payments.

With Area Payments

5.4   Table 5.1 presents the profitability of the sugar sector over the three time periods, with and without EU access. We have made the following assumptions in compiling these results:

   –   *Output:* Output corresponds to the volumes used in Chapters 3 and 4. In 2004/05, we assume output of 300,000 tonnes; output in both future periods will depend upon EU access, with supply either expanding to the potential production capacity of 400,000 tonnes, or contracting to the level of domestic consumption, plus a 10% allowance for yield variability.

   –   *Sales:* For the domestic market, we assume maximum sales are approximately 30,000 tonnes less that domestic consumption, due to some inflows of sugar. Without EU access, production in excess of domestic sales is exported to the world market. With EU access, we assume exports area voluntarily restrained to 160,000 tonnes per annum.

   –   *Sugarbeet Prices:* For 2004/05, sugarbeet prices have already been negotiated at YUD 2.0 per kilogram (€28.6 per tonne of sugarbeet, assuming an exchange rate of YUD70/€1), based upon an assumed sucrose content of 15.5%.

Assuming a TBTS ratio of 7.96[1], this gives a sugarbeet price of €228 per tonne of sugar. In the future, we assume the price required to guarantee sugarbeet supplies will reflect the profit-equalising price (PEP) of sugarbeet. For the short/medium term future, we assume the PEP reflects current yields, while in the medium/long term future, we assume the PEP reflects potential future yields.

5.5   The table presents two measures of profitability: (i) before depreciation, interest and tax *(operating margin)*; and (ii) profit before interest and tax.

Table 5.1: Profitability of Sugar Sector with Area Payments (€per tonne sugar, unless stated)

Time Period	2004/05		Future - Short/Medium Term		Future - Medium/Long Term	
EU Access	With	Without	With	Without	With	Without
Rationalisation	No	No	No	No	Yes	Yes
Production (tonnes)	300,000	300,000	400,000	256,795	400,000	272,553
- EU Market Sales	160,000	-	160,000	-	160,000	-
- Domestic Market Sales	140,000	230,000	240,000	233,450	240,000	247,775
- World Market Sales	-	70,000	-	23,345	-	24,778
Average Selling Price	582	449	600	548	549	548
Beet Price	*228*	*228*	*233*	*233*	*187*	*187*
Haulage	*20*	*20*	*20*	*20*	*20*	*20*
Net Cash Processing Costs	*101*	*101*	*88*	*108*	*39*	*41*
Total Operating Costs	348	348	340	361	246	248
Operating Margin	234	100	260	187	303	299
Depreciation	*68*	*68*	*51*	*80*	*44*	*46*
Profit before Interest and Tax	**165**	**32**	**209**	**107**	**259**	**253**

5.6   The following conclusions can be drawn from the results presented in Table 5.1:

–   *2004/05:* Profitability of sugar production in 2004/05 is highly sensitive to the restoration of preferential access to the EU market. Production is likely to be only marginally profitable on a full costs basis without EU access, and this excludes any interest payments. Without access, the industry would have a surplus of 70,000 tonnes that would have to be sold on the world market, undermining the profitability of the industry.

–   *Future - Short/Medium Term:* The industry would be profitable both with and without EU access, though profitability would be around €100 per tonne higher with EU access restored. Profitability without EU access is higher than in 2004/05 for several reasons, the most important being the far higher world and domestic prices obtained as world prices return to trend and the reduced proportion of sales made into the low priced domestic market.

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[1]   This TBTS ratio assumes sucrose content of 15.5% and 81% slucrose recovery.

− *Future – Medium/Long Term:* The industry would be highly profitable both with and without EU access, with little difference between the two access scenarios. The reason for this is that processing costs are very similar after rationalisation takes place, and average selling prices are also very similar. This is because in the medium/long term, we expect EU prices to fall by 20% as the reform process is completed. Rationalisation of the Serbian processing sector is sufficient to raise profitability from the short/medium term levels, even with lower average selling prices, as processing costs fall dramatically.

Without Area Payments

5.7   Table 5.2 presents the profitability of the sugar sector over the same three time periods, with and without EU access, but without any area payments. In effect, the only difference in the two sets of results is that the elimination of area payments serves to raise the price of sugarbeet in the future scenarios as the profit-equalising sugarbeet price rises. This does not affect the profitability for 2004/05, as sugarbeet prices are assume to be fixed already at YUD 2.0 per kilogram for 15.5% sucrose content.

Table 5.2: Profitability of Sugar Sector without Area Payments (€per tonne sugar, unless stated)

Time Period	2004/05		Future - Short/Medium Term		Future - Medium/Long Term	
EU Access	With	Without	With	Without	With	Without
Rationalisation	No	No	No	No	Yes	Yes
Production (tonnes)	300,000	300,000	400,000	256,795	400,000	272,553
- EU Market Sales	160,000	-	160,000	-	160,000	-
- Domestic Market Sales	140,000	230,000	240,000	233,450	240,000	247,775
- World Market Sales	-	70,000	-	23,345	-	24,778
Average Selling Price	582	449	600	548	549	548
PEP of Beet	*228*	*228*	*277*	*277*	*217*	*217*
Haulage	*20*	*20*	*20*	*20*	*20*	*20*
Net Cash Processing Costs	*101*	*101*	*88*	*108*	*39*	*41*
Total Operating Costs	348	348	385	405	276	278
Operating Margin	234	100	215	143	273	269
Depreciation	*68*	*68*	*51*	*80*	*44*	*46*
Profit before Interest and Tax	**165**	**32**	**164**	**63**	**229**	**223**

5.8   The table reveals that the removal of all area payments lowers future profits by between €30-€45 per tonne of sugar. However, profits remain considerable under the medium/long term scenarios, thereby calling into question the necessity for the current area payments structure to be maintained long term. In the short/medium term, profitability is reduced without area payments, and some form of payment may be required in this period while processors are investing in rationalisation.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1   The purpose of this report is twofold:

(i)   To assess the immediate prospects for the Serbian sugar sector in 2004/05.

(ii)   To assess the longer term outlook for the sector as a whole.

General Conclusions and Recommendations

6.2   For the 2004/05 season, access to the EU market will be crucial to the profitability of the Serbian sugar industry. With average yields, domestic production will exceed domestic consumption by as much as 70,000 tonnes. The production surplus will be sold either at high EU support prices, or at low world market prices, and this will have far-reaching implications for average selling prices and industry profitability. Without access to the EU market, industry profits are likely to be very modest.

6.3   In the longer term, the Serbian sugar sector appears to have a viable future, assuming that the government is willing to maintain a similar level of border protection (a tax on consumers) to that which has prevailed in recent years. The sector has excellent agricultural potential and the processing sector has a strong foundation upon which to build.

6.4   The key to the future size and profitability of the sugar industry will be access to the EU market. Serbia is highly unlikely ever to become a competitive exporter to the world market. As a result, production will consistently exceed domestic consumption only if EU market access is restored. By the end of the decade, with EU access restored, we estimate that Serbia could produce around 400,000 tonnes of sugar in five factories, with beet production covering around 60,000 hectares. Without EU access, sugar production is likely to contract to around the level of domestic consumption, with four factories producing perhaps 270,000 tonnes of sugar, with beet acreage of around 40,000 hectares.

Specific Conclusions and Recommendations

Agriculture

–   The most favoured sugarbeet soils are to be found in the Srem, southern Banat, and southern and central Bačka regions of Vojvodina. On these soils, sugarbeet has the potential to achieve yields of 50-55 tonnes per hectare, with sucrose content up to 16%. In these regions, the most important alternative crops are maize and soybean.

–   Though our analysis suggests there is potential for considerable improvement in the technical performance of beet production, it is unlikely that the position of beet relative to its major competing crops will improve significantly. This is

because the scope for improvement appears similar for all major alternative crops in the main beet regions.

− The supply price of beet today is influenced by the provision of direct area payments, which discriminate in favour of beet production. The higher support payment payable to beet acts to lower the supply price of beet by over €5 per tonne of beet.

− There is a relatively strong case for maintaining the discriminatory area payment for beet in the short to medium term. Without the area payment, the profitability of beet production would diminish and supplies could not be guaranteed. Therefore, during the next few years, while processors' resources are tied up in restructuring factory capacity, the beet price may require support from direct area payments.

− In the longer term, if EU access is restored, profits in the industry should be strong enough, particularly following rationalisation, to allow for the phasing out of these area payments, as processors would be able to pay higher prices for beet.

Processing

− Several of the factories currently operating in Serbia are located away from the optimal beet producing areas. In this respect, the geographical location of MK Commerce's factories gives the company a competitive advantage over its competitors.

− Factories in Serbia are medium sized and current capacity is underutilised. There is a need for further rationalisation and investment in order to lower processing costs. Restored access to the EU market will allow processors to finance this process, and, in the longer term, relieve the government of the need to make direct area payments to growers.

− In the longer term, the number of factories in Serbia will decrease irrespective of EU market access. With EU access, we estimate that five factories could produce around 400,000 tonnes of sugar. Without EU access, we estimate that production will contract to around the level of domestic consumption, with four factories producing around 270,000-280,000 tonnes by the end of the decade.

− Alongside rationalisation, we expect efficiency improvements to reduce the labour force to around 250 workers (permanent and seasonal) per factory during the campaign.

Position of MK Commerce

6.5   In terms of the specific position of MK Commerce, the company has several distinct advantages over other processors in the sector:

−   MK has a strong emphasis on guaranteeing sugarbeet supplies, which is crucial to the success of any sugar industry. MK seeks to promote links with the best, expanding growers.

−   The four MK factories are located in the prime sugarbeet producing areas, where sugarbeet has a comparative advantage over alternative crops.

−   MK currently supplies around 50% of Serbian sugar, and enjoys scale advantages over other processors.

−   The historic links of MK Commerce and its trading arm with domestic end-users provide a marketing advantage over competing processors. Moreover, SFIR and Hellenic have less experience of competitive market situations with volatile prices, having traded predominantly in the ordered EU market.

6.6   However, there are some weaknesses attached to MK Commerce's position in Serbia:

−   MK has a comparatively poor reputation for prompt payment among the growers encountered in the course of this mission. Nevertheless, the MK payment schedule runs until 31.03.04, and it is possible that payments may be forthcoming.

−   MK's political influence is likely to be considerably weaker with the newly-elected Government of Serbia than that experienced with its predecessor.

FEDERAL REPUBLIC OF SERBIA AND MONTENEGRO

REVIEW OF THE SUGAR SECTOR

ANNEX 1

CURRENT SITUATION IN THE EU SUGAR MARKET

ANNEX 1

CURRENT SITUATION IN THE EU SUGAR MARKET

1. The sugar industry of the European Union (EU) is governed by the EU sugar regime, which determines the production quotas and guaranteed prices underpinning EU regulations. Despite the apparent stability of this system, in the near future the sugar regime will face increasing pressure for reform from the current WTO Doha Round negotiations and EU policy initiatives (including enhanced third country access and budgetary reform). We address these pressures, and the likely direction of reform, in Annex 2. In this first annex, we present the key features of the current operation of the sugar regime in the EU.

A. EU Supply Demand Balance

2. Table 1 presents the supply demand balance for the EU for the past five years. Total sugar consumption is currently 13.3 million tonnes, and is largely unchanged over the period.

Table 1: EU Supply Demand Balance, 1999/2000-2003/04 ('000 tonnes, white value)

3.

	1999/00	2000/01	2001/02	2002/03	2003/04
Production	17,942	17,018	14,908	17,203	15,179
Consumption	13,280	13,200	13,200	13,264	13,290
Imports - Total	1,835	1,855	1,976	1,889	1,907
Raws	*1,645*	*1,703*	*1,674*	*1,674*	*1,684*
Whites	*190*	*152*	*302*	*215*	*223*
Exports - Total	6,185	6,177	3,985	5,379	3,949
Raws	*-*	*-*	*-*	*-*	*-*
Whites	*6,185*	*6,177*	*3,985*	*5,379*	*3,949*
Apparent Stock Change	312	(504)	(301)	449	(153)

B. Key Features of the EU Sugar Regime

Introduction

4. Sugar policy in all the EU member states derives directly from sugar policy in the European Union (EU) as a whole. There are regional differences in the application of certain elements of policy, which mean that producer prices may differ from country to country, and that different EU member countries receive different production quotas.

5. Sugar production in the EU is governed by the sugar regime — a largely self-financing system that provides guaranteed prices to growers and processors. The regime has as its core objective the establishment and defence of these prices. Three main policy instruments are used to defend the minimum, or *intervention*, price that the Commission establishes:

– *Production quotas*, which regulate the quantity of sugar produced for sale at the guaranteed price.

– *Export restitutions*, which ensure that all surplus quota sugar is exported by compensating producers for the difference between the price of sugar on the domestic and world markets.

– *Import tariffs and tariff-rate quotas*, which control the quantity of foreign sugar that comes onto the domestic market.

6. The domestic price of sugar remains at a level far above the world price. The benefits of price support are passed onto the beet growers, because the price of beet is also institutionally determined, as a function of the support (intervention) price of sugar. However, contracts between individual processors and their growers may differ slightly, such as in payments relating to certain aspects of beet quality.

Production Controls

7. The EU Commission grants sugar quotas to each member state. These define how much sugar can be sold at the EU's high, supporting price, rather than limiting the total amount of sugar that may be produced. The quotas are allocated, in turn, among domestic beet processors. Beet processors are responsible for allocating their quotas among their growers.

8. There are no equivalent production quotas for cane refined sugar. However, cane refined sugar output is effectively controlled by the Maximum Supply Needs (MSN) set for the six EU refineries. Raw sugar import quotas are then set in line with the MSN.

9. There are two beet sugar production quotas in the EU: the *basic*, or A, quota and the *specialisation*, or B, quota. The A quotas broadly reflect national consumption levels, while the B quotas are set as a percentage of the A quotas. The magnitude of B quotas in relation to A quotas varies between countries. For 2003/04, A quota was 11.7 million tonnes, and B quota was 2.6 million tonnes.

10. These production quotas refer to the production of *beet* sugar only, with the exception of the French overseas territories (DOMs) and the Azores, which receive quotas for *cane* sugar. An additional 1.7 million tonnes of raw sugar is imported for refining in the UK, Portugal and Finland.

11. The guaranteed prices of the EU sugar regime have been extended until 2005/06. Until that time, sugar production quotas are likely to be adjusted only to meet the EU's WTO commitments, as in the case of quotas for the current marketing year, or to accommodate increased third country imports.

12. Any sugar produced in excess of the maximum quota is known as *C sugar* and must be exported to the world market without any subsidies. The only instance in which C sugar need not be exported is if it is "carried forward" (in storage) to the following season, when it will be considered to be the first part of the following season's A quota production. The quantity of C sugar which may be carried forward is limited to a maximum of 20% of the A quota.

Domestic Price Support

13.　　　The sugar regime operates within a structured system of official, or institutional, prices, which are set at levels far above world market levels. Each year, the EU Commission announces a schedule of prices and levies for the beet processing industry and for the cane sugar refining sector.

Beet Processing

14.　　　The derivation of the basic intervention price for white sugar for the current 2003/04 season is presented in Table 2.

Table 2: Derivation of the Intervention Price of White Sugar, 2003/04

	€/tonne sugar
Raw Material Cost	366.7
Beet Transport & Reception Costs	44.1
Processing Margin	243.6
Total Expenses	654.4
Less Return from the Sale of Molasses	-22.5
Intervention Price	631.9

Note:　1. Prices derived from a standard beet price of €47.67/tonne of beets (basis 16% sucrose) on the assumption that factories recover 13% sucrose as sugar.

15.　　　The *actual* price received for beets is negotiated privately between processors and growers, and tends to be above the minimum price.

Cane Sugar Refining

16.　　　Imported cane raw sugar is refined in four member states: Finland, France, Portugal and the UK. The volumes and prices of imported raw cane sugar are determined by the EU sugar regime.

Intervention Price for Raw Sugar

17.　　　The raw sugar intervention price is calculated by deducting from the white sugar intervention price (as defined above) a transport allowance and a processing margin, and adjusting for the polarisation loss from raws to whites The raw sugar intervention price is used as the basis for pricing imported raw sugar that enters the EU under preferential arrangements. The derivation of the basic intervention price for raw sugar for the current 2003/04 season is presented in Table 3.

Table 3: Derivation of the Raw Sugar Intervention Price, 2003/04

	€/tonne
Basic White Sugar Intervention Price	631.9
Transport Allowance	8.5
Refining Margin	54.2
Raw Sugar Intervention Price (white value[1])	**569.2**

Note: 1. Allowing for the polarisation loss, this equates to €523.7 per tonne raw value.

EU Market Access

18.   The volume of imported raw sugar that enters the EU is defined by the so-called Maximum Supply Needs (MSN) of the EU refining industry.

19.   The refiners' MSN are supplied by several sources, in the following order of preference:

- *DOM sugar* — Raw sugar produced within the EU's domestic sugar production quotas, essentially by the French overseas departments (DOM), namely Reunion, Guadeloupe and Martinique.

- *Protocol sugar* — 1.295 million tonnes (white value) of raw sugar imported from the African, Caribbean and Pacific (ACP) group of countries under the Sugar Protocol of the Lomé Convention, plus 10,000 tonnes of white sugar from India under the 1983 Agreement.

- *MFN sugar* — Finland's raw sugar import quota represents a WTO commitment that preceded Finland's accession to the EU.

- *EBA sugar* — Under the Everything But Arms initiative, Least Developed Countries (LDCs) are granted duty-free access to the EU. It was agreed to introduce a tariff rate quota (TRQ) for raw sugar of 74,185 tonnes, white sugar equivalent, from 2001/02. This TRQ would be increased by 15% each year to 2008/09 (when it would reach 197,355 tonnes), after which unlimited duty free access will be granted to LDC countries (from July 1st 2009).

- An added feature of the EBA initiative is that between 2006/07 and 2008/09, the rate of duty on out-of-quota raw sugar imports and all white sugar imports is also to be reduced for LDC countries. The import duty on out of quota imports is to be reduced by 20% on 1st July 2006, by 50% on 1st July 2007 and by 80% on 1st July 2008 before the complete elimination of import duties on 1st July 2009. At this point the TRQ and tariff on out of quota imports would cease to exist and there would be complete harmonisation of trade for all LDC sugar allowing unlimited and duty free access to the EU market.

- *SPS sugar* — If there is still a deficit after these sources have been allowed for, then an additional quantity of raw sugar is imported under the "Special Preferential Sugar" (SPS) quota, which is allocated among the ACP countries, and India which holds a further 10,000 tonne white sugar quota under the SPS scheme.

- In addition to raw sugar imports, small but increasing volumes of white sugar imports enter the EU under the preferential access arrangements of the West Balkan free trade agreement. This agreement extends to Albania, Bosnia, Kosovo, Croatia, Macedonia and Serbia & Montenegro. Beet sugar produced in these countries can be exported freely to the EU without tariffs or quota restrictions, subject to strict definitions of rules of origin. At present the agreement is in place until the end of 2005, though the possibility remains that the agreement may be extended beyond that date.

20.   Table 4 presents the approximate volumes and duties associated with these preferential trade arrangements for 2003/04.

Table 4: EU Preferential Trade Arrangements, 2003/04 (white value)

Trade Arrangement	Volume ('000 tonnes)	Effective Duty1 (€/tonne)
Sugar Protocol	1,305	0.0
MFN	82	98.0
EBA	98	29.2
SPS	178	29.2

Notes: 1. EBA and SPS sugar enter the EU duty-free. However, the price they receive is lower than the full raw sugar intervention price by the amount of the adjustment aid paid to raw sugar refiners, i.e., €29.2 per tonne.

Import Tariffs and WTO Commitments

21.   In practice, no imports enter the EU outside those that receive some kind of relief on import duties. Table 5 illustrates the EU's tariff commitments tabled to the WTO at the Uruguay Round.

Table 5: Current Trade Policy Information

	Raw Sugar	White Sugar
Current Tariff Rate	€339/tonne	€419/tonne
WTO Tariff Commitments		
Base Rate	€424/tonne	€524/tonne
Final Rate	€339/tonne	€419/tonne

Source: LMC database; WTO.

22.   In addition to the tariffs illustrated in Table 4, the EU has applied additional duties under the Safeguard Clause. These rates are applied on a continuous graded scale and are inversely linked to the world sugar price. Table 6 presents the additional white sugar safeguard duties at selected levels of the world price. These rates were applicable during the implementation period of the Uruguay Round, which ran to 2000/01 inclusive (and continue to be applied in the meantime).

23.   Any or all of these arrangements may, of course, be subject to change in the current WTO Doha negotiations.

Table 6: Selected Safeguard Duties for White Sugar Imports (€per tonne)

C.i.f. World Price	Safeguard Duty
150	145
200	110
250	82
300	57

C. Pressures on the EU Sugar Regime

24.   Despite the apparent stability of the EU sugar regime, in the near future the sugar regime will face increasing pressure for reform from the current WTO Doha Round negotiations and EU policy initiatives (including enhanced third country access and budgetary reform).

25.   Indeed, in the past year the regime has been under attack from all sides. In this introductory section, we identify the most important forces gathering against the continued stability of the EU sugar regime.

26.   In a potentially significant move, Brazil, Australia and Thailand have lodged formal complaints with the WTO against the EU sugar regime. The substance of the complaints is directed against the alleged cross-subsidisation of "C" sugar exports to the world market, and the WTO waiver granted to the re-export subsidies payable on 1.6 million tonnes of sugar displaced annually by raw sugar imports under the EU's various preferential access arrangements. In

addition, the differential rates of duty paid under these preferential access arrangements have also been questioned by the Brazilian, Thai and Australian challenge.

27.   The provisions of the Agreement on Agriculture formulated at the WTO Uruguay Round of trade talks have begun to bite into the sugar regime. Low world prices and EU production surpluses have meant that agreed limits on export subsidies have been threatened, forcing the EU Commission to make permanent and temporary cuts in production quotas. Against this background looms the future outcome of the current Doha Round of WTO trade talks, with the distinct possibility of further concessions on export subsidy commitments, tariff levels and safeguard duties.

28.   While EU enlargement increasingly threatens to add to production surpluses, the negotiation of new preferential market access agreements will place further strain on the operation of the EU sugar regime. Two access agreements stand out:

–   *EBA:* Under the Everything But Arms (EBA) initiative, Least Developed Countries (LDCs) are to be granted unlimited duty-free access to the EU from 2009. During a transition period from 2001/02 to 2009/10, the LDC's will receive an increasing duty-free quota each year.

—   *West Balkans Agreement:* Small but increasing volumes of white sugar imports enter the EU under the West Balkans free trade agreement. Beet sugar produced in the West Balkans region can be exported freely to the EU without tariffs or quota restrictions.

29.   These many and varied pressures are substantial. Whether the regime survives in its present form beyond the expiry of the current arrangements in 2006 remains to be seen, but it is certain that either or both of the basic tenets of the regime — production quotas and possibly also guaranteed prices — will be subject to significant adjustment in the near future. The likely direction of these reform options and the effect on the evolution of EU prices forms the subject of Annex 2.

FEDERAL REPUBLIC OF SERBIA AND MONTENEGRO

REVIEW OF THE SUGAR SECTOR

ANNEX 2

EU SUGAR POLICY REFORM

ANNEX 2

EU SUGAR POLICY REFORM

1.   The current EU sugar regime is due to run until the end of 2005/06. July 1st 2006/07 is therefore scheduled to mark the beginning of the subsequent regime.

2.   Having agreed to maintain its current structure until 2006, the sugar regime now finds itself beset by a host of new pressures. With the WTO Doha Development Round of trade negotiations underway, internal pressures for agricultural reform strengthening, and a range of bilateral trade agreements with third countries increasing access to the EU sugar market, the European Commission is currently evaluating options for the future direction of EU sugar policy.

3.   In this Annex, we present the possible future direction of EU sugar policy, drawing on:

   (i)   The families of policy options that are currently being considered by the Commission, and their projected influence on EU sugar prices.

   (ii)   A range of likely outcomes from the WTO Doha Round.

4.   Although the EU has agreed to maintain the current sugar regime until 2005/06, in the past few years, the EU has entered into a number of bilateral trade agreements that have enhanced third country access to the internal market. The friction between agricultural policy, as represented by the sugar regime, and trade policy, as represented by the new bilateral agreements, has launched the EU into unprecedented arenas of potential conflict. The future policy direction for the sugar regime will, therefore, to a large degree, be dictated by developments within the EU trade policy environment.

EU COMMISSION FAMILIES OF OPTIONS FOR REFORM OF THE SUGAR REGIME

5.   Within the framework of the Mid Term Review procedure for the current EU sugar regime (2001-2006), the EU Commission entered into a consultation process designed to consider the options for reform of the current regime's arrangements beyond 2006. As part of the consultation process, the Commission proposed four families of options for future reform.

6.   The consultation process led to the publication of an Extended Impact Assessment (EIA) summary, in late September 2003, in which the Commission set out the implications of the four options for reform of the EU's sugar sector.

The Four Families of Policy Options for Reform of the EU Sugar Sector

7.   Of these four options, industry support has centred on the <u>Fixed Quotas</u> option, while the Commission appears to favour the <u>Price Cuts</u> option.

8.   Under the Fixed Quotas option, the EU sugar market would be managed by quotas on domestic beet sugar production and imported sugar under third country access arrangements. By contrast, under the Price Cuts option, the EU market would, in effect, be managed by price, with domestic prices set at the level necessary to maintain a balanced market.

9.   The EIA describes the four proposed policy options as follows:

> ***Status Quo:*** The present regime would be extended beyond 2006. The necessary reduction of quotas, tariffs and prices would be made within the current common market organisation (CMO). Price cuts would be limited to the minimum required to prevent imports, in line with future WTO commitments, while quota cuts would preserve the support price by accommodating third country imports.
>
> ***Fixed Quotas:*** Quotas would be reduced in order to maintain a high EU price. Negotiated quotas would be granted to LDCs rather than unlimited access, and Sugar Protocol beneficiaries would continue to be granted quota access rather than any future arrangement for unlimited access. Price cuts would again be limited to the minimum required to prevent imports, in line with WTO commitments.
>
> ***Fall in Prices:*** The phasing out of production quotas and the EU internal price would be allowed to adjust itself to the price of the non-preferential imports.
>
> ***Full Liberalisation:*** A complete liberalisation from the current sugar regime has been considered, incorporating the removal of production quotas and support prices. Producers would be integrated into the Single Farm Payment (SFP) system.

10.   The EU's assessment of the implications of these two families of options is presented below.

1. Fixed Quotas

–   The sugar protocol and EBA agreements would be renegotiated to provide restricted quota access for all current beneficiaries, while the current quota regime for EU domestic producers would be retained.

–   A high internal support price would be maintained in the EU, taking into account future WTO commitments.

–   Tariffs and duties, and domestic production quotas, would be reduced in accordance with any future WTO commitment.

–   **Prices would be reduced by 15-20% from current levels due to future WTO commitments.**

2. Fall in Prices: A Reduction in the EU Internal Price

11.   This option envisages a two-stage process of reform to 2015. In the initial transitional stage, up to 2011:

–   Current access arrangements would be maintained, though guaranteed prices would fall in line with the internal market price.

−   Import tariffs would be reduced to allow non-preferential sugar to be imported "at parity with the EU market price".

−   Sugar production quotas would be subjected to cuts to maintain market balance after allowing for imports of sugar under the various preferential access arrangements. However, production quotas would be tradable within the EU.

−   **Prices would be cut by 15-20%.**

12.   In the second stage, from 2012 to 2015, the following reforms are envisaged:

−   Once the levels of imports and production have stabilised, production quotas would be phased out.

−   The internal market price would be allowed to adjust itself to the price of non-preferential imports, subject to EU border protection.

−   To soften the effects of the reduction in EU sugar prices, this option also considers the possibility of allowing EU sugar producers to benefit from the Single Farm Payment (SFP), in line with the June 2003 CAP reform.

−   **Prices would be reduced by 38% from current levels. The raw sugar intervention price would be cut to €325 per tonne from its current €523.7 per tonne.**

−   For these first two options, lowering the level of the EU internal price would make the EU market less attractive for the least competitive sugar producing countries among those with preferential access, possibly leaving room for other producers worldwide. Also, reduced exports from the EU would leave room for the capture of market share by other exporters to the world market.

EVOLUTION OF EU PRICES UNDER FIXED QUOTAS AND PRICE CUTS REFORM OPTIONS

13.   Under the fixed quotas option, the actual level of prices in the EU will depend upon the negotiated outcomes of the ongoing WTO Doha Round of trade talks. The following diagrams describe the price cuts associated with the range of policy options modelled by the EU Commission and LMC to cover the possible outcomes under a Fixed Quotas reform option and the Price Cuts option. The prices covered are:

−   White sugar intervention price.

−   White sugar market price, assuming a 15% market premium.

14.   We first present the EU Commission's price projections, as contained within the *Extended Impact Assessment*. We then present LMC's forecasts for prices under a range of Fixed Quota options. Each of these contains a range of price cuts under different WTO Doha Round outcomes.

EU COMMISSION PROJECTIONS

15.   Diagram 1 presents the EU Commission's forecasts for intervention prices under the Fixed Quotas and Price Cuts reform options. Under Fixed Quotas, prices are forecast to fall to €523 per tonne by 2015/16, while under the Price Cuts option, prices are expected to fall to €392 per tonne by 2015/16. The equivalent market prices, allowing for a 15% market premium, are €600 per tonne under the Fixed quotas reform, and €450 per tonne under the Price Cuts reform.

Diagram 1: White Sugar Intervention Price Associated with EU Commission's Fixed Quota and Price Fall Families of Options
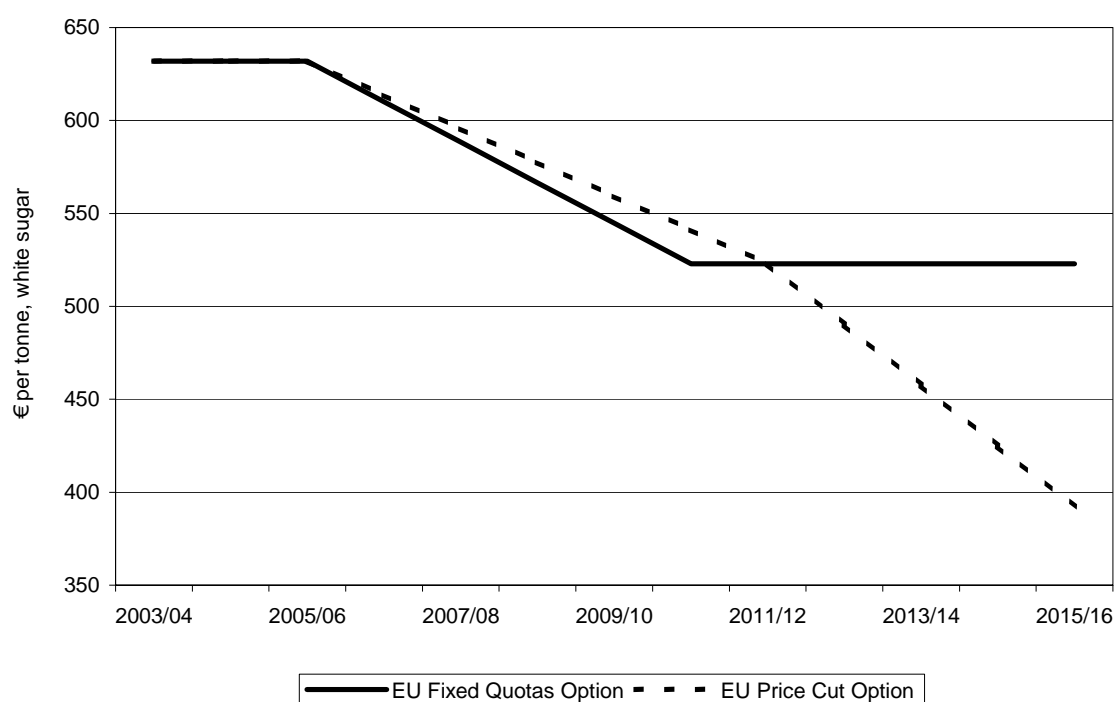
LMC FIXED QUOTAS PROJECTIONS

16.   As prices under the Fixed Quotas option will be determined by the EU's commitments on tariffs and safeguard duties at the WTO Doha Round, and as the outcomes of the Doha Round are as yet unknown, we have modelled a range of outcomes for the Fixed Quotas option to place alongside the EU Commission's projection presented in Diagram 1.

Modelling WTO Commitments

17.   Of crucial importance for the future is the level of tariffs, and the decision on the continuation of safeguard duties, that emerge from the Doha Round negotiations. Most observers believe the outcomes from the current talks will be at least as onerous as those from the Uruguay Round. Even if the EU Commission were to decide to continue with the sugar regime in its current form, this would impose a minimum level of price cuts during the implementation period of the Doha Round.

18.   In the 1994 Uruguay Round Agreement (URA) on Agriculture, the EU became subject to important policy commitments to:

−   Reduce tariffs on sugar imports.

−   Decrease both the volume of subsidised exports of sugar and the expenditure on such exports.

19.   The Doha Round of WTO negotiations is expected to push for further significant reductions in the protection of the agricultural sector, taking forward the policy commitments made in the URA. This section highlights the assumptions made in this study regarding these key elements of trade liberalisation and their potential impact on the EU sugar regime. Although it is not possible to identify exactly how the EU will decide to reform the sugar regime, we have attempted to establish what we believe to be the likely boundaries for change over the next decade.

20.   In our analysis, we have made several key assumptions:

(a)   Following the failure of the WTO trade negotiations at Cancun, Mexico, in September 2003, we have assumed that the EU's commitments will be frozen at the 2003/04 level for the next five years. The first full year during which the agreements from the Doha Round could therefore be applied is 2008/09.

(b)   Since there is no way of knowing in advance the nature of the agreement on trade barriers, we have assumed two alternative scenarios for the EU's commitments to reduce tariffs. We assume that tariffs will be reduced by either:

−   20% by 2012/13, or

−   36% by 2012/13[1].

These figures correspond to the outcomes of the Uruguay Round Agreement on Agriculture (URA). 20% was the agreed reduction in sugar tariffs, while 36% was the standard tariff reduction for agricultural products.

(c)   We have also considered two different outcomes for the application of safeguard duties:

−   In one, we assume that the EU can continue to apply the current schedule of safeguard duties to imports of sugar.

−   In the second, we assume that the EU is forced to abolish safeguard duties, relying purely on its basic tariffs as protection against sugar imports.

---

[1]   This timetable follows the proposal of Stuart Harbinson, the WTO agriculture chairman at Cancun, in WTO document TN/AG/W/1/Rev.1 of 18 March 2003, to phase in tariff reductions over five years.

21.   The analysis then adopts as its point of reference the intervention price in Spain, including the total cost of storing sugar for a year. This is based on the assumption that sugar imports would enter the EU at the point at which the intervention price is the highest, i.e., in Spain, where the intervention price incorporates the highest possible regional premium. This, therefore, would form the highest possible level of EU prices under each scenario.

22.   Accordingly, sugar imports will enter the EU if the c.i.f. world price plus the tariff, and possibly the safeguard duty if appropriate, is below the intervention price in Spain, including the costs of storing sugar for a year, i.e.:

(World price + freight + tariff (+ safeguard?)) < (Spanish intervention price + €39.6)

23.   Based on these assumptions, we estimate that the impact of WTO commitments on tariff and safeguard duties will oblige the Commission to cut intervention prices as follows by the end of the five-year transition period in 2012/13 (and thereafter remaining unchanged to 2015/16):

(i)   If tariffs are cut by 20%, the white sugar intervention price falls by 6% if safeguard duties are retained and by 21% if safeguard duties are eliminated.

(ii)   If tariffs are cut by 36%, the white sugar intervention price falls by 16% if safeguard duties are retained and by 32% if safeguard duties are eliminated.

24.   Table 1 presents current and future intervention prices under these assumptions.

Table 1: EU White Sugar Intervention Price, 2003/04 and 2015/16 (€per tonne)

Reduction in Tariffs	20%		36%	
Safeguard Duties	Retained	Eliminated	Retained	Eliminated
2003/04	632	632	632	632
2015/16	595	498	528	431
% Price Cut	-6%	-21%	-16%	-32%

25.   These intervention prices can be converted to market price estimates, assuming a current market price of €725 per tonne, which assumes a market premium of approximately 15% above intervention prices. Table 2 presents current and future market prices under each WTO scenario.

Table 2: EU White Sugar Market Price, 2003/04 and 2015/16 (€per tonne)

Reduction in Tariffs	20%		36%	
Safeguard Duties	Retained	Eliminated	Retained	Eliminated
2003/04	725	725	725	725
2015/16	683	571	606	494
% Price Cut	-6%	-21%	-16%	-32%

26.　　　　Diagrams 2 and 3 present our forecasts for intervention prices under these four outcomes of the Doha Round for the Fixed Quotas option. For comparison, we also include the EU Commission's Price Cuts projection.

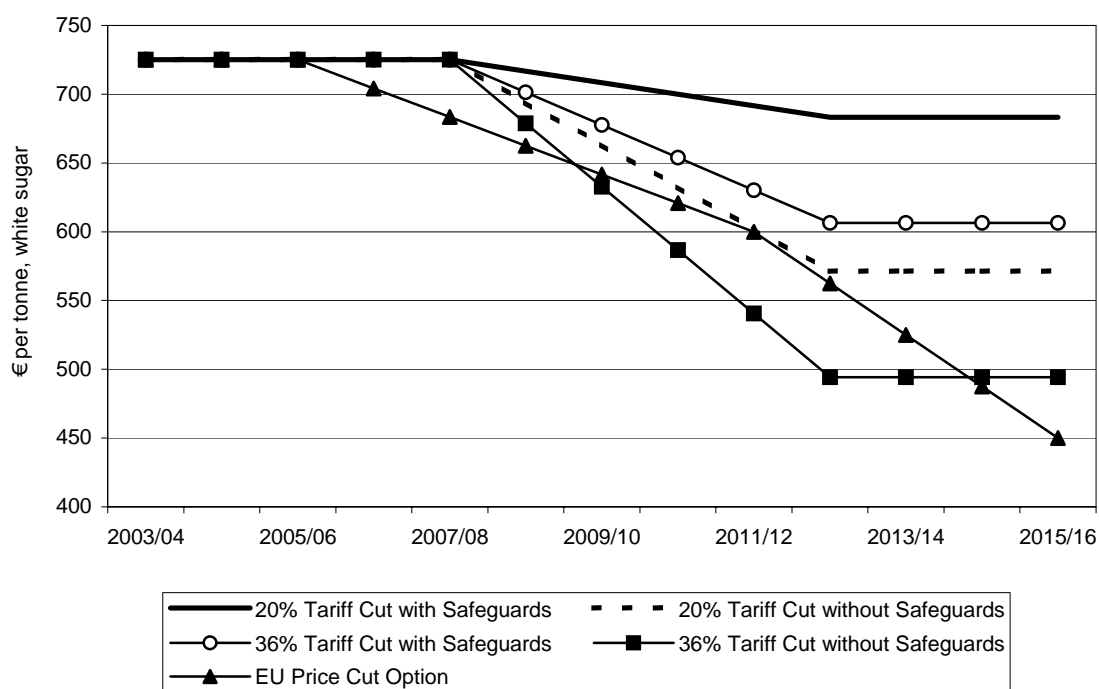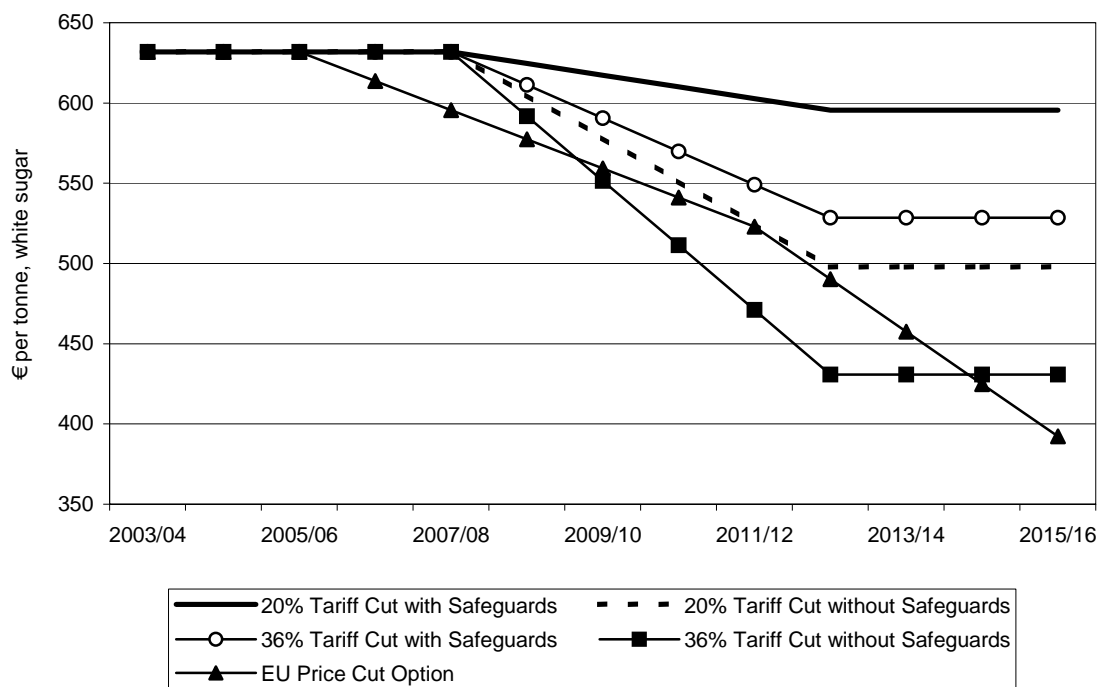**Diagram 2: White Sugar Market Price Associated with Fixed Quota Options**

Diagram 3: White Sugar Intervention Price Associated with Fixed Quota Options

FEDERAL REPUBLIC OF SERBIA AND MONTENEGRO

REVIEW OF THE SUGAR SECTOR

ANNEX 3

TERMS OF REFERENCE

ANNEX 3

TERMS OF REFERENCE

Background

1.   Serbian Agro industry accounted for 9.8% of the total country's GDP in 2001[1] - revenues totalled €3 bn. out of which the sugar industry accounts for approximately €0.6 bn. The overall sugar production capacity in Serbia and Montenegro ("Serbia") is around 350,000-400,000 tonnes per annum which exceeds the domestic demand by 130,000-150,000 tonnes[2]. Average yield (sugar beet per 1 tonne sugar) in Serbia is around 7.6 t which compares to the EU average of 9.2 in 2002/2003 season. The country has eight sugar refineries, most of which had been privatised in 2002. Four of them are owned by MK Commerce, two – by the Italian company SFIR, while the Greece Hellenic Sugar owns also two.

2.   Although still lagging behind the EU15 average consumption the sugar consumption in Serbia has been increasing along with the increase in the standard of living[3] and the current level assumptions call for a consumption equal to ca. 27 kg/cap[4]. During the 90's Serbian state controlled the sugar industry. Prices were determined at a centralised level and were extraordinarily depressed to circa €85/MT as compared to the pre-war level of around €500/MT.

3.   EU sugar market is highly regulated and the quota principle applies. In terms of the EU price regime an internal support is provided and income safeguarded by intervention buying of sugar and minimum price for beet. Intervention agencies are obliged to buy in eligible sugar offered to them and sugar manufactures are required to buy beet from growers at a pre-set minimum price. The Community prices are guaranteed only for production within quotas. The total quota amount to 14.4 m. t for the community splits into "A" quotas (82%) and "B" quotas (18%) set per member.

4.   Under the stabilisation and association process implemented by the European Union all import duties for products originating from the Western Balkans were abolished at the end of 2001. Imports of sugar originating in the Balkans, which had previously been zero, reached 320,000 MT during the 2002/2003 marketing year. During 2001 and 2002 Serbian sugar exports amounted to 41,000 MT (76,000 MT according to the Serbian customs) and 97,000 MT (163,000 MT) which was close to the production surplus. Exports rocketed during 1Q 2003 as much as 84,000 MT following the permission to export to the EU region. However, this privilege in the case of Serbia and Montenegro has been suspended since May 2003 due to sugar-sales regulation offence.

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[1]   *Source: Serbian Investment and Export Promotion Agency ("SIEPA").*
[2]   Local market demand is in the band of 220,000-250,000 t p.a.
[3]   With a major interruption during the war.
[4]   EU average is app. 33 kg/capita.

EBRD Potential Investment In The Serbian Sugar Sector

5.   In the context of a potential investment by the EBRD in one of the leading players in the Serbian sugar market – MK Commerce – FAO has been contacted to undertake a review of the sugar sector in Serbia and Montenegro.

Objective of the Assignment

6.   This assignment aims to provide a clear and comprehensive understanding on the Serbian sugar sector and on the EU policy towards imports. As the influence of government policies/interventions will continue to affect the sector this assignment will also aim to analyse the position of the Serbian Government, with a view on tariff determination and intervention in the sector. An additional objective is gain an understanding of the sustainability of the Serbian sugar sector and the competitiveness of MK Commerce with regard to local and regional players in the sector.

Scope of Work

7.   The following will be investigated:

Sugar production and consumption

- Analysis of the sugar sector in Serbia covering the structure of the industry, general statistics on the local sugar production and a list of main refineries involved (capacity and volume produced; ownership, etc).

- Analysis of the gross margins of sugarbeet and the principal alternative cereal and oilseed crop. The information will be used to derive a minimum supply price for sugarbeet.

- Assessment of the operating efficiency and technical capability of the plants owned by the key players in Serbia (including comparative operating/processing costs etc.) compared to the EU and global industry leaders.

- Evaluation of the economics of refining cane raw sugar at beet factories, with a view to determining whether this could be a viable complementary activity to beet processing.

- General sustainability of the sugar industry in Serbia vs the EU and global producers. Analysis of the likely evolution of the price of sugar in Serbia and of the main cost drivers in the sugar industry.

- The level of domestic demand for sugar (direct consumption, industry use etc.). Current situation and likely scenarios.

- Exports to EU and other countries. Analysis on the competitiveness of Serbian sugar exports into EU. Current situation and likely scenarios.

- Main cost drivers in the sugar industry

MK Commerce competitiveness

- Special Emphasis to be put on the analysis of the competitiveness of MK Commerce vs. other local/regional producers in the medium to long term.

Serbian Government policies

- Description of the past and current government policies in the sector, namely (i) price support for sugar beet and sugar; (ii) trade policies and trade protection mechanism (tariffs, export taxes); (iii) other policies with a significant impact on the sector. Likely evolution and comparison with EU policies in this regard.

- Description of the likely evolution of the Government policy regarding sugar in light of WTO, CEFTA and EU accession.

EU sugar market analysis

- A review of the import and export policies of the EU. A review of the tariffs/quotas applied by the EU to the main exporters into the EU.

- Sugar demand in the EU and price evolution. Current situation and likely scenarios.

- A review of reforms to the EU sugar policy. Current plans and options.

Resources Requirement

8.   The assignment will require the services of sugar market & industry expert. The assignment will start in February 2004 with one week period in the field, where visits of the main production sites of MK Commerce will be organised as well as meetings with relevant Government officials. All relevant information on the sector will be collected. Fieldwork will be followed by a two-week report writing period.

Deliverables

9.   FAO will present a first draft report to the EBRD Operation Leader (OL) not later than 3 weeks after the experts have returned from the field. The report will include an executive summary and annexes that include data backing the conclusions in the main text. After receiving OL's comments, the experts will have 1 week to finalise the report and submit it to the Bank no later than end-March 2004.

FEDERAL REPUBLIC OF SERBIA AND MONTENEGRO

REVIEW OF THE SUGAR SECTOR

ANNEX 4

PERSONS MET AND CONTACTS

ANNEX 4

PERSONS MET AND CONTACTS

Sugarbeet Grower: Petar Gagic (100 ha of beet contracted with SFIR)
Village: Dobrinci
Tel: +38122 453 055, mobile : +38163 501 550

European Agency for Reconstruction

- Simon Davis, Environment and Agriculture Programme Manager
Tel: +381 11 3023 442   e-mail: simon.davis@ear.eu.int

Sugar Factory "Zrenjaninska"
Zrenjanin, (state owned))

- Veso Miskiljin, General Manager

- Bojan Ljutic, Vice Manager (mobile:+381 64 155 22 52)

Sugar Factory "Sajkaska"
Zabalj (owned by Hellenic Sugar)

- Theodoros Anhomelidis, General Manager
Tel: +381 21 831 462

Farm "Hercegovina"
Ravni Topolovac (State owned farm)

- Svetislav Rakic, Farm Manager

- Mirjana Micovic, Accountant
Tel: + 381 23 829 003

Sugar Factory "TE-TO"
Senta (owned by SFIR)

- Ljubisa Radenkovic, Factory Manager

- Fabio Martinelli, Special Projects Assistant
Tel: + 381 24 815 215, mobile : +381 63 528182

Industrial Crops Association
Novi Sad

- Olga Curovic
Tel: +381 21 616 633

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Institute for Field and Vegetable Crops
Novi Sad

- Petar Cacic ,Vice Manager of sugar beet department
Tel: +381 21 4898 100

MK Commerce Main Office
Novi Sad.

- Srdan Ilin, Managing Director

- Bogdan Bubnjevic, Manager of Agricultural Department
Tel: + 381 21 4878 319

Ministry of Agriculture
Belgrade

- Dr. Ivana Dulic-Markovic, Serbian Minister of Agriculture

FAO Office
Belgrade.

- Goran Zivkov, Program Co-ordinator/Ministry Official
Tel: +381 111661713

FEDERAL REPUBLIC OF SERBIA AND MONTENEGRO

REVIEW OF THE SUGAR SECTOR

ANNEX 5

MAP OF SUGARBEET PRODUCING REGION

TCI901-116/YUGOSLAVIA

FEDERAL REPUBLIC OF SERBIA AND MONTENEGRO

REVIEW OF THE SUGAR SECTOR

ANNEX 6

MAP OF VOJVODINA SHOWING SUGARBEET PROCESSING FACTORIES

MAP OF VOJVODINA SHOWING SUGARBEET PROCESSING FACTORIES