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BAKALÁŘSKÁ PRÁCE

Sugar Policies of the European Union within the Framework of International Trade in Sugar

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Prohlášení

Prohlašuji, že jsem bakalářskou práci vypracovala samostatně a použila pouze uvedené prameny a literaturu.

V Praze dne 20. 5. 2008

…….

Terezie Lokajíčková

Poděkování

Na tomto místě bych ráda poděkovala vedoucímu mé práce, Doc. Ing. Vladimíru Benáčkovi, CSc., za jeho cenné rady. Děkuji také kolegovi Bc. Tomáši Havránkovi a těm členům mé rodiny, kteří si tuto práci přečetli, za jejich hodnotné připomínky a komentáře.

Všechny chyby a omyly jsou pak jen mé vlastní.

ABSTRACT

This thesis concentrates on the sugar policies of the European Union (EU). Its objective is to analyse the development which has lead to the current configuration of the sugar regime of the EU and to examine its consequences on different stakeholders both in the past and in the nearest future. First, general information on sugar as an agricultural commodity is provided and the development of the international trade in sugar in the last seven centuries is described. Second, the origins, objectives and instruments of the Common Agricultural Policy of the EU and the Common Market Organisation in sugar, together with its latest reform, are dealt with. Fourth, the consequences of the EU sugar regime before the process of its modification began in 2006 are examined for three groups of stakeholders: the EU, the countries having preferential arrangements for exports of sugar to the EU and the countries operating mainly on the world sugar market. Then the consequences of the 2006 reform and the subsequent changes of the EU sugar regime, as well as those of its potential full liberalisation, are analysed. Finally, also the biofuels made from sugarcane are discussed.

ABSTRAKT

Tato práce se zabývá cukernými politikami Evropské Unie (EU). Klade si za cíl analyzovat okolnosti, které vedly k vytvoření současného cukerného režimu EU, a také důsledky tohoto uspořádání pro různé účastníky obchodu s cukrem v minulosti i v nejbližší budoucnosti. Nejdříve jsou podány základní informace o cukru jakožto zemědělské komoditě a je popsán vývoj mezinárodního obchodu s cukrem během posledních sedmi století. Poté se práce zabývá vznikem, cíli a nástroji Společné zemědělské politiky EU a Společnou organizací trhu s cukrem, včetně její poslední reformy. Dále jsou analyzovány důsledky existence cukerného režimu EU pro tři skupiny hráčů: pro samotnou EU, pro země, které mají s EU uzavřeny speciální smlouvy, které jim zajišťují preferenční přístup na trh cukru EU, a konečně pro země, které působí převážně na světovém trhu s cukrem. Také jsou zde analyzovány důsledky reformy z roku 2006, následných změn cukerného režimu EU a případné úplné liberalizace trhu s cukrem v EU. V závěru práce pojednává o biopalivech vyráběných z cukrové třtiny.

TABLE OF CONTENTS

ABBREVIATIONS

ACP countries = African, Caribbean and Pacific states
CAP = Common Agricultural Policy of the EU
c.i.f. = a delivery term that includes the costs as well as insurance and freight charges of the delivery of goods to a given destination as defined in the ICC Incoterms 2000.
CMO = Common Market Organisation (for a given product)
CSA = Commonwealth Sugar Agreement
DEFRA = Department for Environment, Food and Rural Affairs
EBA = Everything but Arms
EC = European Communities
EDF = European Development Fund
EEC = European Economic Community
EU = European Union
EUR = euro, currency of the EU
FAO = Food and Agriculture Organisation of the United Nations
FDI = foreign direct investment
GATT = General Agreement on Tariffs and Trade
HFCS = high fructose-corn syrup
ISA = International Sugar Agreement
LDC = least developed country
MFN = most favoured nation
MSN = maximum supply needs
NAFTA = North American Free Trade Agreement
ODA = Official Development Assistance
PSE = producer subsidy estimate
SADC = Southern African Development Community
SP = Sugar Protocol
SPS = special preferential sugar
UK = United Kingdom
UNCTAD = United Nations Conference on Trade and Development
US, USA = United States of America
USD = United States Dollar
USDA = United States Department of Agriculture
USSR = Union of Soviet Socialist Republics
WTO = World Trade Organization
WWII = Second World War

LIST OF FIGURES AND TABLES

1 INTRODUCTION

The sugar policies of the EU have been often discussed since it became known that the EU was considering how its sugar regime could be reformed. The press has often been presenting stories of people working in the sugar industries in countries such as Guyana or Mauritius. These were alerting that if the EU reformed its sugar regime too quickly or too deeply, their livelihoods would be seriously affected.

Some of the people that are not familiar with the EU sugar policies might be surprised at first sight: why are these people complaining about the potential reform when the EU only wants to deregulate its sugar market? Is it not something which should help them, given that less regulation in the EU would probably mean better conditions on the sugar market for them? *Vive la libéralisation!* The reason of this becomes obvious when one finds out more about the EU policies in this sector.

Briefly outlined, the EU has been producing sugar at very high costs, which has only been made possible by high guaranteed prices. Furthermore, it has been producing more sugar than its citizens and food industries could consume. In addition to this, the EU has been importing sugar from certain countries (imports from all other countries have not been possible due to prohibitive tariffs) and has been offering these suppliers the same prices as it offers to its own producers. Therefore it is logical that the reform of the EU sugar sector would affect people producing sugar to be exported to such remunerative market. Obviously, the EU has had to be getting rid of the resulting surplus sugar. Nevertheless, the world market price has been so low in comparison with the price in the internal market of the EU that these exports have had to be heavily subsidised. And we, European consumers, have had to be buying sugar for prices approximately three times higher than those on the world market.

This scheme might be considered illogical and strange. Therefore it is very important to understand what has lead to the current state of affairs, and why. The aim of this thesis is to help readers orientate better in this very complex issue and to analyse both the development which has lead to the current configuration of sugar trade in the EU and the consequences that this configuration has had on different stakeholders. Also the impacts of the reform of the EU sugar regime, which began in 2006, will be analyzed.

In Chapter 2 sugar will be described as an agricultural commodity: its basic characteristics and the behaviour of its prices will be discussed. Then the development of the international trade in sugar until the 19th century will be depicted. The last part of this

Chapter will concentrate on international sugar trade in the 20th century and will also outline what countries are the most important players on the international scene.

Chapter 3 will focus on the sugar policies of the EU. First, the Common Agricultural Policy (CAP) of the EU will be discussed. Its development will be described and its objectives and instruments will be presented and analysed. Also and overview of the most important reforms of the CAP will be presented. Second, the Common Organisation of the Market in sugar will be discussed. Its main instruments and its development until the 2006 reform will be described. Finally, also the reform itself will be outlined.

The impacts of the EU sugar regime until the process of its modification began in 2006 are analysed in Chapter 4 for three groups of stakeholders: the EU itself, countries having preferential arrangements for exports of sugar to the EU and countries operating mostly on the world market. The consequences of the 2006 reform and subsequent changes on these stakeholders will also be analysed, together with the financial assistance that the EU offers in connection with the reform of its sugar regime. The potential liberalisation of the EU sugar sector will also be taken into account.

Chapter 5 will discuss biofuels used in transportation because a significant part of bioethanol is made from sugarcane. The market in this liquid fuel is therefore not independent from that in sugar, which has to be taken into account especially for the future when an increased use of biofuels may be expected.

2 SUGAR AND WORLD TRADE IN THIS COMMODITY - A HISTORICAL REVIEW

For a better understanding of different aspects of sugar production and trade, this chapter will provide some general information on sugar as an agricultural commodity, and also the volatility of its price will be examined.

Then, the history of sugar production and trade will be discussed, which is very important for the purpose of this thesis. The development of sugar cultivation and trade has been very complicated, especially in recent decades: it has been highly regulated and much inefficiency has arisen. It would be very easy to judge such configuration being unwise and useless (because for many market participants, such as consumers, sugar has become very expensive), but it is necessary to be aware of the fact that what has happened in recent years is determined by the whole history of sugar production and trade that was highly influenced by the policies of colonial powers.

2.1 Sugar as an Agricultural Commodity

> *"(There is) a reed in India that brings forth honey without the help of bees, from which an intoxicating drink is made, though the plant uses neither beans nor fruit."*
>
> *Nearchus, 325 BC, First datable reference to sugarcane.*

2.1.1 A Brief Overview

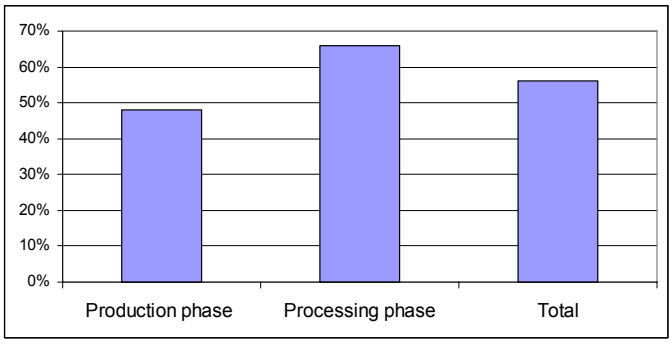
The word sugar, which comes from a word in Sanskrit, 'sarkara', is a common name for one of the simplest carbohydrates – sucrose. Sucrose[1] is a disaccharide which is formed during photosynthesis in green plants and is composed of one molecule of glucose and one molecule of fructose. Honey was the traditional sweetener and sugar was only used in pharmacy and later also as condiment and preservative. Until the 18th century sugar was consumed especially by the rich, but from the 19th century on it has been accessible to all people and nowadays it covers an important proportion of world caloric consumption (9-10% according to The Fourth World Food Survey published by the FAO (Lucke, 1991) and according to Hannah & Spence (1996) in 1990 it was the fourth largest source of calories. Sugar is used not only in the food industry (in the production of baked goods, confectioneries, chocolate, both alcoholic and non-alcoholic beverages, and also jams and

[1] Its chemical formula is $C_{12}H_{22}O_{11}$.

fruit preserves where sugar prevents growth of spoilage microorganisms), but also in pharmaceutics (as an ingredient of medicaments) or in biotechnology.

Although sugar can be extracted from many plants, there are two main sources of commercially produced sugar: sugarcane and sugar beet. Sugarcane (*Saccharum officinarum*) is a perennial grass cultivated in tropical and subtropical areas for several thousand years already and is very sensitive to the cold. It can grow up to 5-8 metres high and its sap is rich in sugar (sugarcane consists of 10-18% of sucrose). Today in most countries harvest is performed mechanically. However, for example in Mauritius this is made impossible by the terrain, and also in some areas in India cane is harvested manually. Sugar beet (*Beta vulgaris*) is a biennial plant cultivated in temperate and cold regions since the 19th century. However, it was already in 1747 that a German apothecary, Andreas Marggraf, obtained sugar crystals from the beet. Later, in 1802, a sugar-beet factory was erected in Silesia by his student, Franz Karl Achard.[2] Roots of this plant can contain up to 20% of sucrose. Today harvest of sugar beet is completely mechanical. Concerning costs of production, it is more expensive to make sugar from beet than from cane. This is illustrated by Figure 2.1.

Figure 2.1. *Ratio of cane sugar and beet sugar production costs in % (costs of production of cane sugar / costs of production of beet sugar)*



Source: www.unctad.org

2.1.2 Sugar Processing

Sugarcane, after being cut, has to be processed quickly because it very soon starts losing its sucrose content. This process is a little slower in the case of sugar beet. This explains why the processing plants are never situated too far from the fields. Primarily, sugar juice is pressed out from cane or beet and then is purified, filtered and clarified, so that sugar (raw sugar precisely) can crystallize from it. There are several by-products of the sugar production. From sugarcane, it is mainly bagasse, a fibrous stalk residue which is either

[2] In the United States beet sugar was first produced in 1838.

burnt at the procession plant or used as feed for animals, and molasses, syrup remaining after raw sugar is crystallized out of cane juice and which used to be employed for industrial ethyl alcohol production and is still used for rum production and as feed for farm animals. When there is no more remaining extractable sucrose in the molasses, it is called blackstrap molasses. By-products of sugar beet processing are molasses, dried beet pulp and beet tops that are usually used on farms.

Refining of raw sugar is only another stage of its processing and basically consists of further purification of sugar so that it contains more than 99,9% of pure sucrose. This is what is known as white sugar or table sugar. It is important to be aware of the fact that crystalline sugar is highly hygroscopic and that white sugar is even more hygroscopic than raw sugar, which logically makes its transportation or storage even more difficult and expensive. This explains why the majority of world trade in sugar is carried out with raw sugar that is usually refined close to the place of consumption.

2.1.3 Alternative Sweeteners

Many alternative sweeteners have been discovered and invented. According to Harrison (2001), they constitute nearly 20% of world sugar/sweetener annual production.[3] Two of the most important natural sweeteners other than cane or beet sugar are isoglucose (wheat) sweeteners and the high fructose-corn syrup (HFCS), which is made from maize. HFCS is mainly used in the United States[4] and Japan and it is added for instance into soft drinks such as Coca Cola. From non-nutritive (intensive) sweeteners best known are saccharin, aspartame, acesulfame-K, dulcin, cyclamates or sorbitol. However, the use of some of them has been prohibited in various countries because they were toxic or causing cancer. Many debates and studies about the health risks of use of artificial sweeteners have been ongoing, but the results are unclear.

2.1.4 Volatility of the Price of Sugar

For most of its history, world sugar market has been viewed as residual and volatile. Many countries have tried to stabilize the prices, concluding several International Sugar Agreements, as discussed in Chapter 2.3. Using quartiles, Figure 2.2 illustrates very well the instability of prices in the second half of the 20th century.[5]

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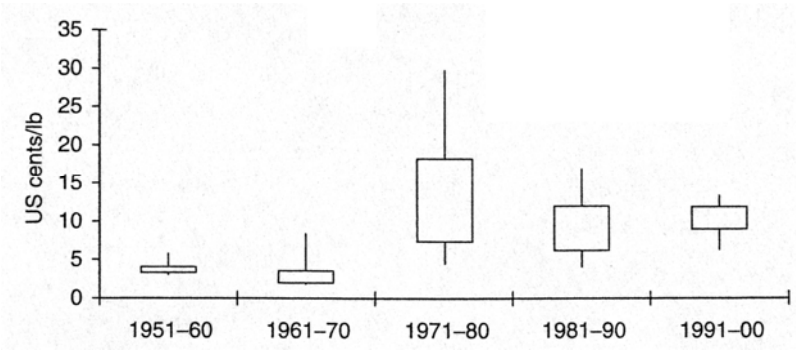
[3] Quantity of intensive sweeteners is measured in sugar equivalents.
[4] In the United States corn sweeteners consumption exceeded cane and beet sugar consumption at the end of fthe 1980's when prices of sugar were very high (Gudoshnikov et al., 2004).
[5] From the range of prices in every period highest and lowest 25% of data were removed so that in every rectangle in Figure 2.2 there is medial 50% of data.

Figure 2.2. *Volatility of real raw sugar prices – quartiles.*



Source: Gudoshnikov et al. (2004).

There have always been many factors contributing to such characteristics. Between 1900 and 2001 the share of market made by exports decreased from 60% to 20%. However, the size of the free market is even smaller because around 8% of total world exports are carried out under special arrangements (Gudoshnikov et al., 2004). Moreover, sugar sold on the free market is very often dumped by exporters that need to sell their excess sugar.

Another factor is that producers can react to changes in the demand for sugar only very slowly because sugar cane is a perennial plant which besides this requires very high capital investments both in fields and factories. Also, sugar cane harvest is highly affected by weather conditions.

As described in Gudoshnikov et al. (2004), in the 1990's a theory about price elasticity was very popular. Its basic assertion was that an important factor contributing to the price volatility was the low price elasticity of the demand of sugar importers. In the 1970's, the developed countries had a 65% share on world imports. For example in the US and Japan, around 80% of imported sugar was used for manufacturing of food and beverages. For the producers it was most important to retain their market share, so their demand for sugar was not price elastic at all. This caused that sometimes prices were extremely high (reaching several tens of US cents/lb in 1974) while demand was not falling. But later in some countries (especially in the US and Japan) HFCS started to be used more. Furthermore, prices of sugar declined, which also contributed to the decrease of the share of developed countries on world imports to about 35% in 1995.[6] Given that in developing countries the demand for sugar is more price elastic, prices on the world market should also have stabilized. This held during most of the 1990's, but in 1998 prices of raw

[6] Also rising oil prices have contributed to this, because countries that were both oil exporting and sugar importing could start buying more sugar.

sugar fell below 7 US cents/lb and in 1999 further to 4.78 US cents/lb. Nevertheless, it must be acknowledged that prices have become less volatile than before the 1990's.

Even concerning residual nature of the market, today's situation is better than before: except for the US, the EU and Japan, sugar market has been deregulated and trade in sugar has been more liberal. In most countries there is a certain connection between the world and the domestic price, often through the use of a tariff. Also the break-up of the USSR contributed to this development because Cuba could no longer export its sugar into the USSR under a special arrangement and had to start operating on the free world market.

2.2 Development of Trade in Sugar Until the 19th Century

> *"The heat was fierce, since there was no means of cooling the sugar house. Temperatures of 140 degrees Fahrenheit were recorded… Humidity would also be very high and therefore exhausting. It was a job for… slaves, not free men."*
>
> *Henry Hobhouse, 1999. Seeds of Change. Macmillan, London.*

Sugarcane probably comes from Micronesia, where it spread between 7000 and 4000 BC. From there sugarcane spread to the Philippines, China and India. According to The New Encyclopaedia Britannica (1990), sugar making was known in India already in 3000 BC. Into the Middle East it was brought thanks to both conquests and trade. By the 8th century, sugarcane was grown in Arabic Spain and southern France. However, Atlantic islands such as Madeira or the Canary Islands were more suitable for its cultivation because of stable temperature and regular rainfall.[7] From the 11th to the 13th century, Egypt was the major importer of sugar into Europe. Then it was superseded by Tripoli, Sicily and Cyprus. In sugar refining, for a long time Venice was most important until it was replaced by Antwerp in the 16th century. In 1544 two refineries were established in London and in 1689 another one in New York.

In 1493 sugarcane was brought to the New World by Christopher Columbus. A great success of its cultivation in San Domingo led to the spread of sugarcane cultivation to other islands in the West Indies and from there further to Mexico and Peru. Caribbean sugar was first shipped back to Europe in 1516 already. Sugarcane harvest is very labour-intensive. Since the size of the local population was not sufficient and people were not willing (and often also able) to do such a hard work, and because there were only few

[7] In addition to this, as work in sugarcane fields was extremely hard, use of slaves was very convenient. But Christian Europe could not approve the use of slave labour, at least within its territory. When this was happening as far as on some subtropical Atlantic islands, it was not really a problem.

indentured workers from Europe, colonizers began to import labour force from Africa. Already in 1518 the Spanish Government granted a license to import 4,000 slaves from Africa into the Spanish colonies. The use of slaves had spread in the following two centuries all over the West Indies, especially to sugar growing islands. New slaves had to be imported all over again, because labour in the fields and processing plants was toilsome and dangerous and many workers died.

The so called triangular trade developed between Europe, West Africa and the West Indies. Goods like toys or textiles were shipped from Europe to Africa where it was bartered for slaves who were brought to the West Indies to work in sugar production. Sugar and rum were then shipped to Europe. This pattern of trade lasted until the end of the 18th century.

The Portuguese brought sugarcane cultivation to Brazil whose sugar industry was most important in the 16th century. Their sugar was mostly traded by the Dutch. In the 17th century, however, the British began their territorial expansion and their sugar industry became very important. Colonial powers also started to care much more about their interests in compliance with the mercantilist theory and besides the use of tariffs a new way of protection occurred: in 1660 the Navigation Act was passed in Great Britain. It should promote British naval trade and among other things it forced English planters to buy slaves from English traders only and, in exchange, their sugar had preferential access to the British market. A similar legislation was passed in France and these laws were something that started the dependency of the Caribbean islands on their colonizers' sugar markets. The dependency on external factors was reinforced in the 18th century[8] and still exists today. Furthermore, at the end of the 17th century an Act was passed which assured that when some goods were transported between two British colonies, they were subject to the British import tax. However, besides the Caribbean, sugar was imported to Europe also from other parts of the world: as early as in 1615 the Dutch East India Company started importing sugar from Java and the surrounding countries. Later in the 18th century tariff policies became more complex: re-export was facilitated by the possible refund of duties under the drawback system and tariffs on imports of refined sugar were higher than those for raw sugar. Furthermore, for a country's own colonies, preferential tariffs were introduced.[9]

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[8] Practically only sugarcane was cultivated in the Caribbean, other food crops had to be imported and no indigenous agriculture has been established. In addition to that, because of the high taxes levied on refined sugar, this value-added activity was not performed there.

[9] For more details see Early & Westfall, 1996.

In the 17th and 18th centuries, sugar production was very lucrative, but was also very risky because of crop failures, hurricanes, droughts and wars in the Caribbean between the colonial powers. Also there were many times more black slaves than white planters. After an initial boom in the sugarcane production, the soil fertility became to decline on practically every island and the production spread elsewhere. Furthermore, only a smaller proportion of the sugar industries were efficient in the 18th century. British planters were lobbying a lot for their sugar's preferential access to the British market, but as Great Britain was expanding, it was also granting this access to planters from more and more islands. Until 1776, when independence was declared by the United States, British West Indies had had preferential access also to the US market.

During Napoleonic wars the situation of Caribbean planters worsened: trade was interrupted, there was a lack of equipment, and conflicts between local governors and commanders were very common. Furthermore, higher taxes were imposed on English planters and export duties on sugar were also increased. This situation lasted until Napoleon was defeated. Meanwhile in Europe, as the access to Caribbean sugar was very difficult in France due to the British naval blockade and because its price increased significantly, Napoleon started to direct his interest to sugar production from beet. Soon around 40 factories were built in Western Europe. The industry declined sharply after Napoleon's defeat because French ports were again open to cane sugar imports. However, it started to recover as soon as in the 1840's and it enabled European countries not to be dependent as heavily on cane sugar imports, especially from the former colonies. Even if the production of sugar from beet was more expensive than from cane, the protection in Europe was high enough to enable the beet sugar production to be increasing rapidly and while in 1840 93% of sugar was made of sugarcane, in 1880 more sugar was made of sugar beet than of sugarcane, and in 1899 67% of sugar was made of sugar beet, worldwide (The New Encyclopaedia Britannica, 1990).[10] In 2004 only around 26% of sugar was made of sugar beet (CEDUS, 2007).

At the end of the 18th century critique of mercantilism was more and more common and it also appeared in The Wealth of Nations by Adam Smith (1776) and slavery also started to be questioned. After long and hard debates, slavery was abolished in Great Britain in 1838. France followed in 1848 and Spain in 1884. As free trade oriented Great Britain had access not only to sugar from British West Indies, but also to sugar from the East (especially the Philippines, Mauritius and Hawaii), sugar made of beet or cheaper

[10] It was in 1915 that cane sugar production exceeded beet sugar production.

sugar from Spanish colonies, the price of sugar declined and the British West Indies had become less important for their mother country and their situation had deteriorated. Unfortunately for the islands, money earned from sugar processing was often not re-invested there. Furthermore, people working in sugar processing had to be paid after the abolition of slavery. All this resulted in reduced profitability of sugar industries. Also many other business opportunities emerged and thus many people started to invest their time and money elsewhere.

In spite of all this, sugar remained an extremely important commodity for the Caribbean even in the 19th century. Concerning labour force, many indentured workers came from the East (for instance from India).[11] Also many freed slaves had to remain in sugar industries because it was made very difficult for them to acquire land. This made the establishment of indigenous agriculture or communities independent of sugar production impossible. Mechanisation and centralization were the best solutions to reduced profitability. Several plantations had to be merged to supply sugar cane to a central factory, which, nonetheless, required huge capital investments. Mostly it was US corporate capital. In the 19th century, production was especially increasing in Cuba thanks to its size, virgin soil, modern technologies, ability to centralize production and also, as it was a Spanish colony, a longer use of slave labour. The Dominican Republic, the Philippines, Mauritius and Hawai emerged as important exporters, too. During the 19th century sugar cane cultivation and processing continued to spread within Africa. Cane sugar also started to be produced in Australia and later in the 20th century in India.[12] Concerning beet sugar, by 1850 also the Russian Empire had a relatively well established industry.[13]

In the second half of the 19th century some Caribbean economies were slightly diversified for instance thanks to tourism, but not everywhere the agricultural sector itself was also diversified. Whether an island remained a sugarcane monoculture depended especially on the freed slaves' possibility of acquiring land to grow food crops there. Even today Caribbean islands are not self-sufficient in food production.

[11] Their contracts were often concluded for 5 years, the trip back home included. However, indenture reeked of slavery and conclusion of further contracts was prohibited in 1916.
[12] In India sugarcane was known several thousand years ago, but modern methods of processing started to be used in the 20th century.
[13] For more details see Gudoshnikov et al., 2004.

2.3 Sugar in the 20th Century

The most significant characteristics of sugar trade in the 20th century were regulation and the existence of special, preferential trade arrangements and international sugar agreements. The aim of this chapter is to provide their brief overview. Only special trade arrangements of the EU will be discussed in more detail in Chapter 3.2.

2.3.1 Special Trade Arrangements

Many special trade arrangements were concluded in the 20th century. The most important were the Commonwealth Sugar Agreement (CSA), the "ACP-Sugar Protocol", the US Sugar Act and the special arrangement between the USSR and Cuba. Especially raw sugar has been traded under these arrangements.

The aim of the CSA established in 1951 was to ensure supply of sugar to the United Kingdom and maintain a stable price for the exporting countries. Price quotas were negotiated, which permitted exporting nations to sell a given quantity of sugar to the UK for a relatively high price.[14] This agreement was not renewed after the UK joined the EEC in 1973; it was in fact replaced by so-called ACP-Sugar Protocol which is described below. By this time, the UK had been importing 2 million tonnes of raw sugar annually under this agreement.

Protocol No. 3 on ACP Sugar, or also the ACP-Sugar Protocol, which was part of the Convention of Lomé, was signed between the EEC and thirteen ACP countries in 1975.[15] It ensured to the exporting signatories a favourable price for their exports to the EEC up to given quotas[16] (annual imports were 1.3 million tonnes of raw sugar). The price that signatory ACP importers were offered was the EEC intervention price that was paid also to the domestic farmers. The aim of this arrangement was rather to help developing countries than to ensure supply of sugar to Europe because this continent had already been sufficient in sugar production. Thus the imported raw sugar was only refined and then re-exported to be sold on the world market. Australia, as a developed country, was excluded from this arrangement. Lomé Convention was replaced by the Cotonou Agreement signed in 2000.

[14] However, in some years, such as 1974, world prices of sugar rose so much that also the UK had to offer a higher price than agreed.
[15] ACP countries that are now signatories of the Sugar Protocol are listed in Annex I.
[16] For example Mauritius was alloted one of the largest quotas.

The EU has also other special arrangements, such as "Most favoured nation sugar" (MFN), "Special preferential sugar" (SPS) or "Everything but arms" (EBA). These will be described in more detail in Chapter 3.2.

The US Sugar Act originated in 1934. It allotted quotas that were divided between domestic and foreign suppliers.[17] After the expiration of this Act in 1974, there were no support programs in the two following years. In 1977 support for domestic producers was enacted, but this did not disable efficient producers from acquiring market shares in the US. Nevertheless, in 1982 a new quota system on sugar imports was imposed. This was the only way how to protect domestic producers, facing imports and also increasing competition from producers of HFCS. Tariff rate quotas are shared by around 40 countries. Because of the accession of the US to NAFTA in 1994, it was decided that sugar market in North America should be free by 2008.

After the Cuban revolution, the Soviet Union started to import sugar that Cuba could no longer export to the US. This was a political decision, because the Soviet Union was self-sufficient in sugar production. Not much is known about this trade agreement, but most probably Cuban sugar was bartered for petroleum and machinery.[18]

2.3.2 International Sugar Agreements

Several international sugar agreements were concluded in the 20th century. They were supposed to stabilize prices on the world market but were not really successful.

The first one was the Brussels Convention signed in 1902 by several European countries. It was supposed to ensure that production and export subsidies are lowered. It became inoperative due to the First World War. In 1937 a new agreement was concluded at the International Sugar Conference in London. It was signed by sugar importers and exporters from all over the world and it should regulate production and marketing of sugar. The Second World War made it inoperative, but the Sugar Council was maintained in the hope of its further operation after the war.

After the Second World War, prices of sugar were very volatile and there were many efforts to stabilize them. Four international sugar agreements (ISA's) with economic clauses were signed: in 1953, 1958, 1969 and 1977. Adjustable export quotas were used to stabilize prices, to which creation of stocks was added in the last agreement. However, only the first agreement was relatively successful. The 1958 ISA failed to keep prices stable when after the Cuban revolution the US started to import sugar from the world

[17] Until the Cuban revolution, Cuba was the most important of the foreign suppliers.
[18] For more information see Lucke (1991).

market, driving prices extremely high. The other agreement did not manage the sugar price boom in 1973-1974. The 1977 ISA's trouble was that the EEC was not its signatory but was exporting a lot of sugar. Therefore, for the signatories it was very difficult to control prices of sugar which surged in 1980 and then fell rapidly.

No more ISA's with economic clauses have been concluded since then. This might have been caused by three facts: first, prices have become less variable than before 1980's. Second, Keynesian beliefs on which regulation was based have been (at least partly) abandoned. Third, regulated prices were not reflecting reality and were giving wrong signals to all players in the sugar trade. However, in 1992 an ISA was concluded, having in 2004 71 signatories.[19] Its objective is to provide information on sugar and other sweeteners, to act as a forum for governments' debates about sugar and sugar policies and to support demand for sugar.

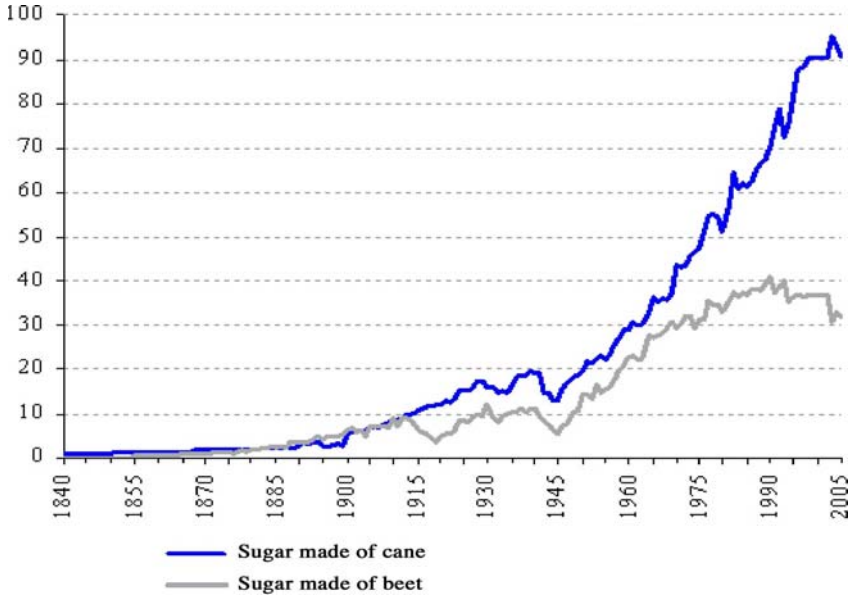
2.3.3 Patterns of Sugar Trade in the 20th Century

Trade in sugar encountered many changes in the 20th century. Production rose from 10 million tonnes in 1900 to 145 million tonnes in 2006 (according to CEDUS estimates) and exports rose nearly seven times (from 6 million tonnes in 1900 to 40 million tonnes 2001 according to Gudoshnikov et al., 2004). Figure 2.3 illustrates the development of production of cane and beet sugar between 1840 and 2005. Sugar production and trade have been deregulated in many countries since the 1990's. For example in Brazil, sugar and ethanol markets have been fully liberalized. Also many negotiations on sugar trade liberalization have taken place during the last several rounds of talks within the WTO.

During the 20th century, while consumption of sugar was rising steadily, its production encountered various fluctuations. The most important characteristics of the recent development are decreasing share of sugar made of beet, increasing dominance of efficient producers (and also increased dependence of importers on a lower number of exporters, which may prove to be dangerous in case of crop failures etc.) and rise of significance of Latin American and Asian producers. The recent rise in production was caused especially by the increase in production of Brazil and India. Figure 2.4 shows the estimated top ten sugar producers. Out of these ten countries, only three (Brazil, Australia and India) belong to ten most efficient producers. The EU and the US that belong to top five producers subsidise their production of sugar very significantly.

[19] These countries produce 83% and consume 65% of sugar worlwide; their exports and imports constitute 92% and 36%, respectively, of world sugar exports and imports.

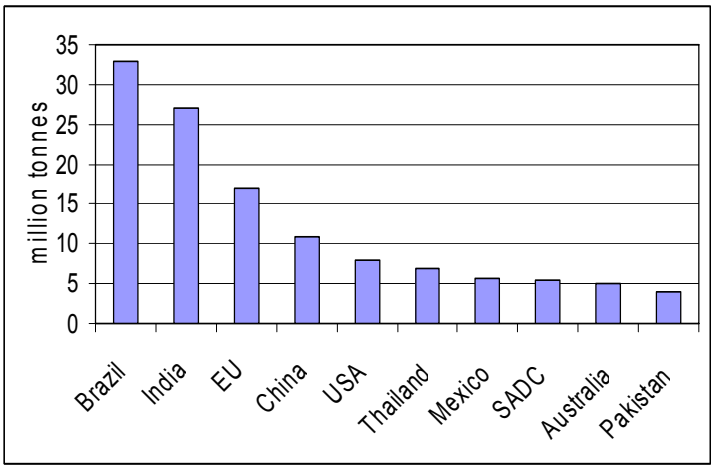
Figure 2.3. *World production of cane and beet sugar between 1840 and 2005 (in million of tonnes)*



Source: www.unctad.org

Generally, sugar production has stayed price irresponsive, which is, besides factors mentioned in Chapter 2.1.4, also influenced by government policies that often cause that sugar production is not connected to world prices. Changes in exchange rates can puzzle price signals as well.

Figure 2.4. *Top sugar producers 2006/07 estimate*



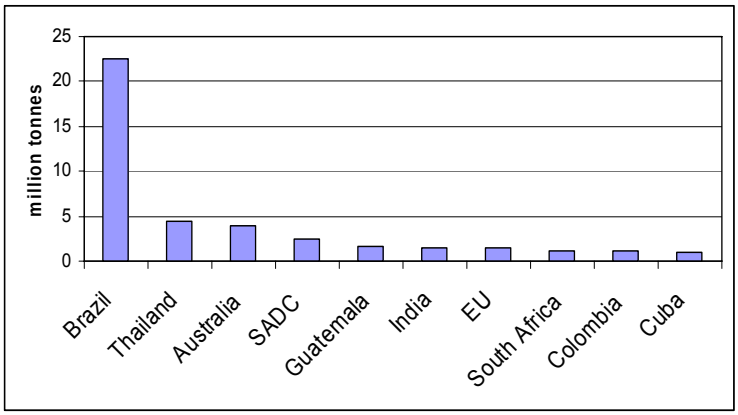
Source: www.illovo.co.za

In 1960, the biggest importers were the US and the UK. In the 1970's Western Europe increased its production and, as it was also importing sugar from ACP countries, it started to export significantly. Thus, in 1980 the EEC was the biggest exporter of white sugar. In the 1990's Brazil emerged as an exporting country and today it is the biggest exporter.[20] Ten most important exporters and quantities supplied by them to the world

[20] One of the factors that helped Brazil increase its exports was the devaluation of the Real in 1999.

market are shown in Figure 2.5. Today, approximately 31% of sugar is traded internationally.

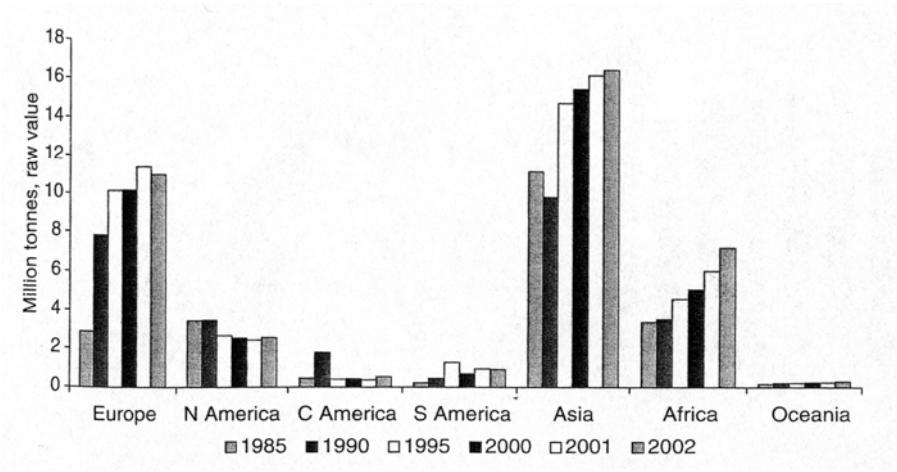
Figure 2.5. *Top sugar exporters 2006/07 estimate*



Source: www.illovo.co.za

Share of different countries in world imports has also encountered changes. This can be seen in Figure 2.6 which illustrates the development of imports in different regions of the world between 1985 and 2002.

Figure 2.6. *World sugar imports by region*



Source: Gudoshnikov et al. (2004)

CHAPTER SUMMARY

The sugar market is very complex. This commodity can be made both from sugarcane and sugar beet, and also many alternative sweeteners have been discovered. The prices of sugar were very volatile especially until the 1990's, which was also caused by the fact that less than one quarter of total world sugar production was traded internationally and that many preferential arrangements have been in operation.

The Europeans have brought sugarcane cultivation to many parts of the world and they have developed sugar industries processing sugarcane into raw sugar in most of their colonies with suitable climatic conditions for sugarcane growing. However, given that often a substantial part of arable land was dedicated to sugarcane cultivation, many colonies developed a dependence on sugar exports while being forced to import food. This dependence has lasted until the 21st century, being supported by special preferential arrangements. Due to the volatility of prices also several international sugar agreements have been concluded in the 20th century. However, none of them has been successful.

In 2006, Brazil was the biggest producer and exporter of sugar, followed by India and the EU in sugar production. Concerning international trade in this commodity, Brazil was exporting more than four times as much sugar as the second largest exporter, Thailand.

3 SUGAR IN THE EUROPEAN UNION

The aim of this chapter is to give some information on the Common agricultural policy (CAP) of the European Union - as sugar policies are part of it - and to describe in more detail the Common Market Organisation (CMO) for sugar.

3.1 Common Agricultural Policy of the EU

In this Section, first the establishment of the CAP will be discussed. As it is one of the most criticised policies of the EU, it is important to understand why it was established. Second, the objectives, principles and instruments of the CAP will be presented. Third, the objectives of the CAP will be evaluated, also with respect to the sugar policies. On the other hand, we will not deal with all instruments of the CAP because they are not all used for the implementation of sugar policies. Therefore only some of these will be discussed in Subsection 3.2 that is devoted to sugar policies. Fourth, a brief overview of the reforms of the CAP will be made.

3.1.1 Establishment of the Common Agricultural Policy

The Common agricultural policy (CAP) of the EEC has its origins in the 1950's. Its general objectives were set by the Treaty of Rome[21] which also extended the common market to agriculture and agricultural products, and its principles were defined at the Stresa Conference in July 1958. Mechanisms of the CAP were adopted by the signatories of the Treaty of Rome in 1960 and the CAP came into force in 1962.

There are several different views on the main reasons for the establishment of the CAP and all of them seem to be legitimate. In its publication *The Common Agricultural Policy Explained* the European Commission stresses that after WWII and also during the 1950's Western European states had problems with food supply and their agriculture was paralysed. The aim of the CAP, therefore, was to ensure safe food supplies, affordable prices for consumers and a viable agricultural sector.

On the other hand, in its *Fact Sheets* the European Parliament emphasizes matters connected with the common market: at the end of the 1950's there were lots of state interventions at the national level (in production, prices and farm structures), which would distort the common market that was going to be created. National interventions could not

[21] Signed in 1957 by six Western European states: France, West Germany, Italy, Belgium, the Netherlands and Luxemburg.

be abolished, also due to the pressures from some member states (e.g. France) and farmers' professional organisations; therefore they had to be transferred to the Community level.

Pelkmans (2001) explains that an important reason for creation of the CAP was that a significant part of the population was dependent on incomes from farming (in 1958 23% of people were employed in agriculture) that were threatened by the instability of prices which is mainly caused by the supply side - external factors such as the weather conditions or changes in input prices. Well known is the Cobweb analysis which explains that when the price of a commodity increases, farmers start to invest more. Therefore in the next season the quantity supplied is higher, which on the contrary decreases the commodity's price. If the elasticity of demand is higher than the elasticity of supply, prices converge to an equilibrium price. Otherwise, prices tend to diverge. This seems to be the case of developed countries, which are relatively saturated in their demand for food and which can afford to buy the same quantity of food even at higher prices. Therefore the risk and uncertainty over agricultural incomes are significant in the EC and some support and stabilization of farmers' incomes are important.

3.1.2 Objectives, Principles and Instruments of the CAP

Article 39 of the Treaty Establishing the European Economic Community sets out that the 5 objectives of the CAP are:

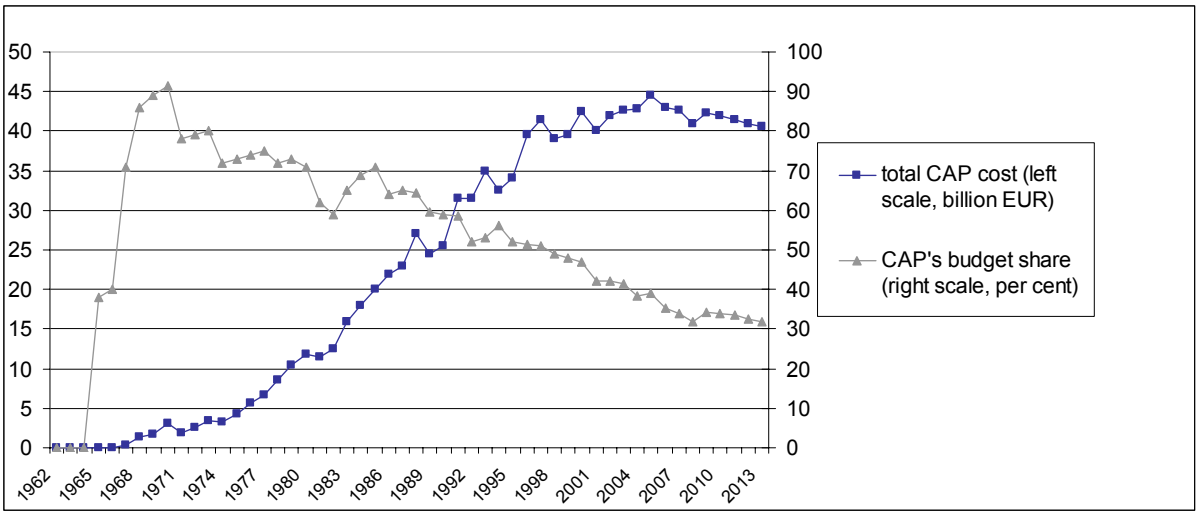
1) to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, in particular labour;
2) thus to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture;
3) to stabilise markets;
4) to assure the availability of supplies;
5) to ensure that supplies reach consumers at reasonable prices.

Principles of the CAP are the following: a unified market (i.e. free trade in agricultural products within the EC), financial solidarity (costs of the CAP are borne by the budget) and Community preference.[22] The development of the total CAP costs and CAP's

[22] The last one seems to be in contradiction with Article 18 of the Treaty of Rome which stated that „The Member States declare their readiness to contribute to the development of international trade and the lowering of barriers to trade…". Its implementation was also made impossible by the Community farmers' income protection. Later this Article was deleted.

budget share in 1962- 2001 are illustrated by Figure 3.1. While the total costs have been rising more or less steadily, the CAP's budget share has been decreasing since the 1970's.

Figure 3.1. *Total CAP costs and budget share, 1962-2013.*



Source: Figures for 1962-1999: The Community Budget: The facts in Figures, European Commission, 2000.[23]
Figures for 2000-2005: European Commission (2007a).
Figures for 2006-2008: European Commission, (2006a, 2007b, 2008).
Figures for 2009-2013 (commitments): Decision 29/2008 of the European Parliament and the Council.

The main instruments of the CAP are: price support (a minimum price, set by agricultural ministers, is guaranteed), deficiency payments (payments to producers equal to the difference between the guaranteed price and the market price), single farm payments (direct income support that is independent of the quantity produced), import taxes (thus it is ensured that imported products are not cheaper than the Community products), intervention (support by selling or storing surpluses), stock disposal (surpluses are disposed of by other means – e.g. Free Food Scheme), export subsidies (this is in fact dumping of Community surpluses, which destabilises prices on the world market) and production controls (quotas on different products and "set aside" payments for land).

3.1.3 Evaluation of the CAP Objectives

In our discussion of the objectives of the CAP we will also use some insights made by Pelkmans (2001).

Concerning the first objective (increasing agricultural productivity), Pelkmans (2001) interprets it as to increase efficiency and regional specialisation in the agricultural sector. Productivity has indeed risen in this sector (e.g. between 1963-67 and 1972-77 even more than in the whole Community economy), which seems to be especially due to the use of fertilizers, high rate of physical capital investments and decline in employment in

[23] As cited in Baldwin & Wyplosz (2004), p. 224.

agriculture. However, regional specialization has not occurred so much because of the high level of guaranteed prices which did not force less efficient producers to leave the sector. This applies also to the sugar sector: as can be seen from Table 3.1 and Figure 3.2, it is common that even less efficient Member States are allocated relatively high quotas (efficiency is expressed by the price of sugar below which they would cease production: the higher it is, the less efficient the Member State is).

Table 3.1. *Prices below which Member States cease sugar production.*

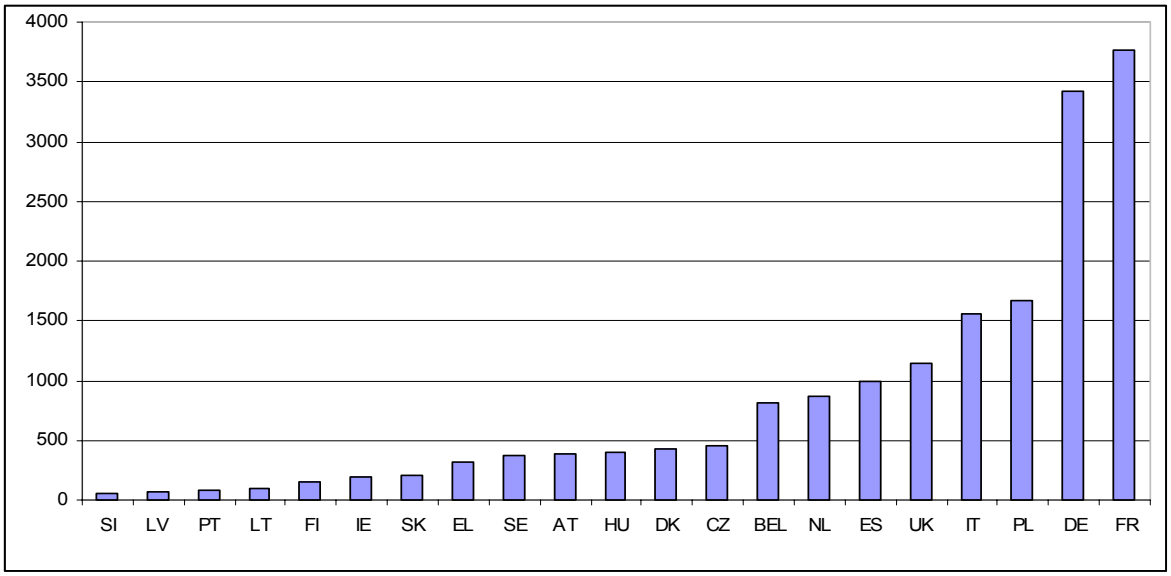
EU Member State	EU market price (EUR/tonne)
Greece	725 – 626
Ireland	
Italy	
Spain	625 – 526
Finland	
Latia	
Lithuania	
Portugal	
Slovakia	
Slovenia	
Belgium	525 – 476
Czech Republic	
Denmark	
Hungary	
Netherlands	
Austria	475 – 425
Germany	
Poland	
Sweden	
UK	
France	425 – 400

Source: European Commission (2003)

As for the second objective (ensuring a fair standard of living for the agricultural community), it is not clear whether fair standard of living (i.e. sufficiently high income) should be ensured only for all current farmers, or also for their descendants, or for anyone willing to enter the agricultural sector. Anyway, according to the analysis performed by Larsen et al. (1994),[24] in all EU countries except Portugal the average disposable income (including non-farm income) of agricultural households was higher than the average income of all households. That would mean that the gap between agricultural and non-agricultural incomes has ceased to exist. Given that sugar has become one of the most profitable crops, this objective seems to have been fulfilled.

[24] As mentioned by Pelkmans (2001), p. 215.

Figure 3.2. *Distribution of sugar quotas to Member States of the EU in marketing year 2002/2003 (in thousands of tonnes of sugar)*



Source : European Commission (2004c)

Nevertheless, there is another issue to be discussed on the second objective, its wording. Article 39 (later 33) states for this objective: 'thus to ensure a fair standard of living…'. From these words one may understand that the second objective should be ensured by the fulfilment of the first one. It seems that the objective of ensuring fair income for farmers has been the most important one. Unfortunately the instruments used for its fulfilment have often not been compatible with the other objectives of the CAP.[25]

The interpretation of the third objective (stabilisation of the markets) might not be completely homogenous. If it is understood as ensuring short-term stability (of e.g. prices), it could be considered to have been fulfilled. However, the equilibrium between supply and demand in the long run, which may be the second interpretation of this objective, has not been achieved. On the contrary, the Community agriculture has generated a lot of surpluses. This is also the case of sugar: prices have been very stable (and also very high), but there has been a significant overproduction of sugar in the EU.

Assuring the availability of supplies, objective four, has really been achieved, especially thanks to very common surpluses. It is however disputable whether this is the best way of fulfilling the objective: in these days it might be more efficient and not less safe to have a diversified, wide range of suppliers from outside the EU. In any case, production surpluses of the EU do not seem to be sustainable in the long run.

[25] For example, the attempt to ensure fair standard of living of Community farmers in fact does not support the increase of efficiency and usually does not ensure reasonable prices for consumers.

Objective five (ensuring reasonable prices for consumers) does not seem to have been well fulfilled. When the decision of setting prices in the EEC was being taken, Germany was influential enough to ensure that the price level was set only slightly below German prices which were one of the highest. Therefore prices within the EU have been higher than those in the world markets, although the difference could be smaller if the EU was not dumping its surpluses in the world market. On the contrary, according to the analysis by Larsen et al. (2004)[26] Community prices have become even more unreasonable between 1979 and 1991, because world agricultural prices were falling faster than those in the Community. Also sugar prices have been higher than the world market prices - occasionally even three times higher.

3.1.4 Reforms of the CAP

Since the establishment of the CAP, there have been many attempts to reform it. However, only a few of them have been implemented without being significantly changed and reduced. This is not surprising given that for the deepest reforms the decisions in the Agricultural Council, which is the main decision-making body when the CAP is concerned, have to be taken unanimously.

In 1968, so called Mansholt Plan (named after the Dutch European Commissioner for Agriculture) was presented. Its proposals were relatively very bold: not to reach disequilibrium in agricultural markets, the EEC should decrease the area of cultivated land by 5 million hectares. Furthermore, it suggested that around 5 million farmers should leave the business so that the size of the remaining farms could be increased and these thus become more efficient. The Plan also warned of the limitations of the price and market support policies. However, based on pressure from some Member States, the original proposal was significantly reduced and in 1972 only three EEC Directives, which did not bring much change, were issued.

After the failure of the Mansholt Plan, not many reformers appeared in the 1970's. However, due to high budget costs of the CAP and surpluses in the 1980's, production quotas on dairy products were introduced in 1984. Moreover, in 1988 a limit to expenditure on the CAP was set.

So called MacSharry reforms from 1992 (named after the Irish European Commissioner for Agriculture) intended especially to decrease the Community agricultural production. Therefore institutional prices were decreased for some products (e.g. by 29%

[26] Cited in Pelkmans (2001), p. 216.

for cereals and by 15% for beef), 'set-aside' payments for withdrawal of land from production were introduced, as well as compensatory payments to farmers that should compensate them for the losses arising from the price cuts.

Since 1995 prices in the EU have become more linked to world prices due to the fact that the WTO members had to convert variable levies and quantitative import restrictions into fixed tariffs.[27] The EU also had to decrease the domestic support to farmers, although compensatory payments were not affected.

CAP reforms of Agenda 2000 that were agreed on in 1999 in Berlin divided the CAP in two 'pillars': support of production (where Common Organisations of Markets belong) and rural development. It reformed sectors such as dairy products, beef or arable crops by further decreasing institutional prices and increasing direct payments. Also the total CAP spending was fixed in real terms.

In 2003 a significant reform of the CAP was agreed. It mainly brought decoupling of income support from the quantity of crop produced. However, to receive new 'single farm payments' farmers have to comply with conditions concerning food safety, environment protection and animal welfare (so called 'cross-compliance').

The last crucial change in CAP came when the EU was enlarged by 10 new member states in 2004. The number of farmers increased by 40%, the area of cultivated land by 30% and agricultural production by 10-20%. New member states were given immediate access to price support measures (these are especially export refunds and intervention buying); however, direct income payments were planned to be phased in during 2004-2013.

3.2 Common Organisation of the Market in Sugar

This Section will focus more deeply on the Common market organisation (CMO) for sugar. First, its main instruments will be discussed. Then, given that the sugar sector was usually omitted when the CAP was reformed, reforms of the CMO for sugar will be discussed. The last part of this chapter will be devoted to the latest and also deepest reform in 2006. By then, it had already been necessary to change thoroughly the CMO for sugar, especially due to pressure from the WTO and also because of commitments that the EU took on towards some developing countries.

[27] These were, however, set very high by the EU – usually between 40 and 150 per cent.

3.2.1 Instruments of the CMO for Sugar

For better understanding of this overview, the main instruments of the CMO for sugar were divided into two groups: domestic production measures and border measures. The former consists of production quotas and price guarantees, and the latter consists of export measures and restriction on imports.

3.2.1.1 Domestic production measures

Production quota system

Production quotas were introduced so that there is a limitation on Community sugar production for which there are relatively very high guaranteed prices. Production within quotas has not only had guaranteed prices, but it could also be exported with a refund, as is explained in Subsection 3.2.1.2. Out-of-quota production was also possible (so called C production or C sugar), but there have been no guarantees for its conditions of sale.

C sugar can be exported to the world market without refund or can be carried over to the next marketing year. This means that it has to be stored for a minimum period of one year and is then treated as production within quota of the given factory.

It is also possible to produce "non-CMO sugar". There are no limits on its quantity and no CMO measures apply to it. It can be used for production of alcohol, bioethanol or yeasts.

Price guarantees

The minimum price for sugar beet is the price that sugar processors have to offer to farmers for their beet. It is set annually by the Council and it should ensure a fair income to sugar beet growers and an equitable distribution of revenues from sugar between growers and manufacturers.

The intervention price is also set annually by the Council. If a manufacturer has sugar that is eligible for intervention and cannot sell it at or above the intervention price on the Community market, he can offer it to intervention agencies that have to buy such sugar for the intervention price. This has, however, happened only once, in 1986. Such rare need of intervention buying, which is conceived as a safety net, is due to the fact that internal prices are kept high above world market prices by the use of import duties and quotas.

Different prices referred to in the CMO for sugar are depicted in Figure 3.3. The EU market price and world free market price vary, whereas the reference price (and thus the intervention price, too) are fixed annually.

Figure 3.3. *Illustration of different prices in the EU.*

Author's illustration.

3.2.1.2 Border measures

Restrictions on imports

Until 1995 the EU was using variable levies to protect its internal market in sugar. However, due to the decision taken under GATT, which was already mentioned in Subsection 3.1.4, these had to be converted to fixed tariffs. These are set by the Council in accordance with WTO commitments of the EU. Since 1995 fixed tariffs on sugar have been set very high so that all non-preferential imports of sugar are in fact excluded.[28]

In case the world price of sugar falls below the so called trigger price, there is one special safeguard clause for the CMO that allows the EU to use an additional duty whose height depends on the development of the world price.

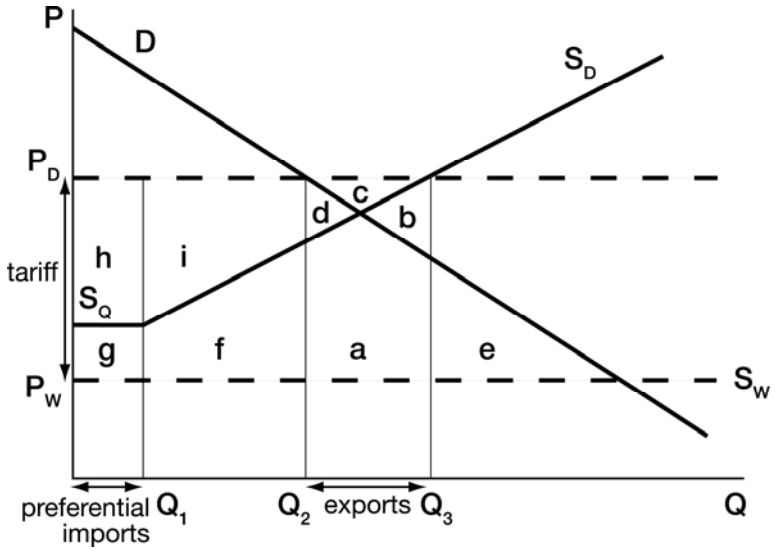
Suspension of tariffs is possible for molasses and raw sugar for refining. This has happened during 1995/1996 marketing year.

The EU also has some preferential imports of raw sugar limited by quotas, which are discussed in more detail in Subsection 3.2.2. The situation is depicted by Figure 3.4: by the use of a tariff the price on the internal market is kept high. The lower the tariff would be, the higher the non-preferential imports would be. However, the actual tariff is so high that instead of having also non-preferential imports, the EU is generating large surpluses (exports are the difference between Q_3 and Q_2). The supply curve of preferential imports is higher than the world price because we depicted preferential imports from relatively high-cost producers. Such situation is connected with several phenomena: the occurrence of

[28] For year 2008 a specific tariff of 419 EUR/tonne of white sugar applies.

large dead weight losses (depicted by areas *a, b, f, d, e* and *g*) and rents (areas *c, d, h* and *i*). These will be more discussed in Chapter 4.

Figure 3.4. *Border measures of the EU.*



Author's illustration.

Export measures

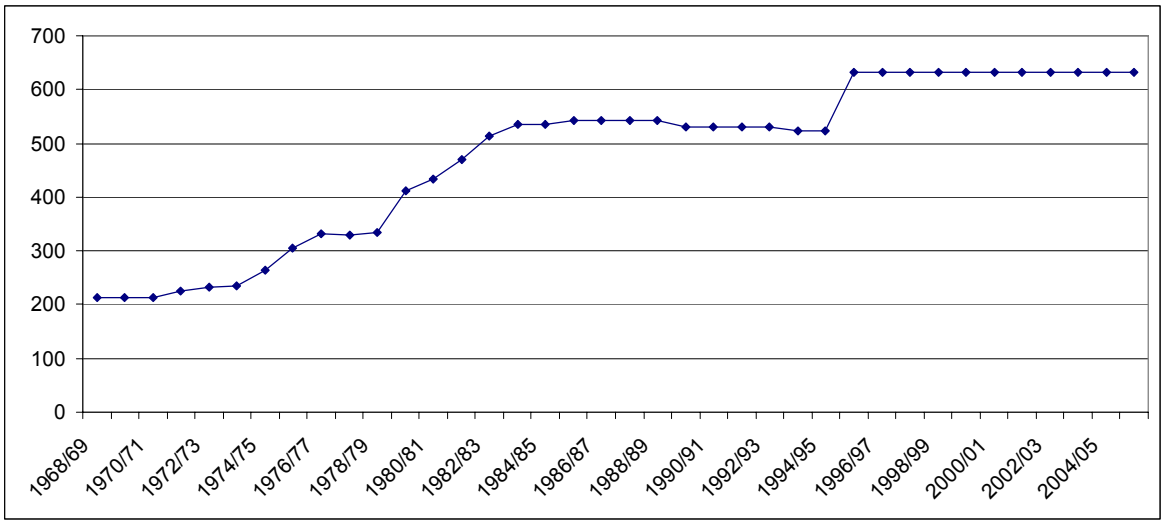
Sugar produced within quota and also sugar imported under preferential agreements can be exported to the world market with a refund (subsidy), which was introduced to cover the difference between the Community sugar price (P_D) and the lower world price (P_W). Export subsidies are depicted in Figure 3.4 by area *a+b+c+d.*

Export refunds, however, should not represent a burden to the Community budget. Therefore levies were imposed on sugar production. They are collected from factories (although the burden is shared by both manufacturers and farmers) and then are booked to the Community budget.

3.2.2 Development of the CMO for Sugar until the Latest Reform

The CMO for sugar was established by EEC Regulation no. 44/67 and has been in operation since 1968. A minimum price for beet and an intervention price for white sugar were set. From the development of the latter in 1968 - 2005 that is illustrated by Figure 3.5 it is clearly visible that this price was increasing significantly until 2005. Such high price level was supported by the use of import duties.

Figure 3.5. *Development of the intervention price for white sugar from 1968 to 2005 (price per tonne in unit of account from 1968 to 1979, in ecus from 1979 to 1998 and in EUR since 1999)*



Source: The European Commission (2004a)

To control the Community production, quotas were set: the basic and the additional one. The former was set at the level of the Community consumption and was allocated to the Member States (and onwards to the factories). It has become the recently known A quota. The additional quota could amount 30 to 45% of the basic quota, based on the possibility of market disposal. It has become the recently known B quota. The sum of the two quotas was the maximum production quota of each Member State or factory. Costs of exporting the surplus were covered by production levies, originally applied on B quota sugar only, that were imposed on producers and that were booked to the Community budget.[29] Due to this and also to the fact that high sugar prices were paid by the consumers, the CMO for sugar usually did not need any budget expenditure and therefore there has been less internal pressure for reform.

A change in the CMO for sugar came in 1974 with EEC Regulation no. 3330/74. Intervention prices were increased (in successive years as well) and in the end, production quotas were, contrary to the Commission's projection of quota reductions, raised too, with B quota being set to 45% of the basic quota.

Another increase of quantity of sugar on the Community market was caused by the validation of the ACP-Sugar Protocol of the Lomé Convention in 1975. This special trade arrangement allowed certain ACP countries to import their cane sugar, within given quotas, to the Community market without any import duties, being guaranteed a minimum purchase price. In reality, this price has been at the level of the intervention price. In the same year a similar agreement was concluded with India. These new imports of sugar

[29] On the contrary, producers of sugar used in chemical industry could get a production refund.

together with a gradual increase of production quotas resulted in the Community becoming a net exporter of sugar in the 1980's. It is also important to note that as imports from ACP countries were viewed as a form of foreign development aid, sugar surpluses arising from them were exported at the expense of the Community budget.

By Regulation 3330/74 levies on B quota production were limited to 30% of the intervention price. Even if this limit was raised to 37.5% by EEC Regulation no. 1785/81 that also introduced levies on all A and B quota sugar production (these were limited to 2% of the intervention price), levies on sugar production were not able to cover the expenditure on export subsidies any more. So that producers are fully financially responsible for the disposal of their production under quota, in 1986 an additional, unlimited levy was introduced for the case when the two, limited quotas, are not high enough to cover costs of export subsidies.

In 1995, apart from the conversion of variable levies into fixed tariffs due to the WTO, the EU also had to limit its export refunds (to 1 273 million tonnes or 499 million EUR). Given that this limit did not apply to the preferential sugar from ACP countries and India, the EU could in fact be giving refunds on export of 1.3 million tonnes of imported preferential sugar and on top of that on another 1 million tonnes (which was making approximately the maximum 499 million EUR of refunds) of its own sugar.

During that year, additional special preferential arrangements were agreed, all of them concerning raw sugar for refining only: so called MFN sugar (Most Favoured Nation sugar, recalling the GATT principle of MFN) and Special Preferential Sugar. The MFN sugar means sugar to which the EU opened its market up to a certain quota which was mostly shared by Cuba and Brazil. No price was guaranteed under this arrangement. Also, so as to better utilise refining capacities of sugar processors, the EU defined maximum supply needs of states that had excessive refining capacities (the UK, Portugal, France and Finland; later also Slovenia). The Special Preferential Sugar scheme was established to ensure that if maximum supply needs are higher than actual sugar imports, missing raw sugar will be imported.[30] In this case a minimum purchase price has to be offered, but it is lower than the intervention price.

In February 2000 the Lomé Convention was replaced by the Cotonou Agreement concluded for twenty years with planned revisions every five years. However, its trade component will last eight years only. Therefore this agreement also set out the basic principles of negotiations of Economic Partnership Agreements (EPAs) between the EU

[30] Under a given hierarchy of preference.

and the ACP countries which should deepen the cooperation between them on a reciprocal basis.

In 2001, two new special trade arrangements were introduced: opening of the Community market to Western Balkans' sugar and "Everything but Arms" (EBA) initiative. Since the end of 2001, all import duties on sugar from the Western Balkans were abolished. In consequence of this additional sugar supply the EU had to decrease its production quotas not to violate its WTO commitments on decrease of export refunds. Balkan States were importing sugar into the EU which was, on the other hand, exporting sugar to them. To avoid re-import of this sugar it was decided that sugar exported to the Balkans was not eligible for export refunds (i.e. only C sugar could be exported there).

The EBA initiative was agreed in February 2001. Its main provision is that customs tariff duties shall be abolished for all products except arms coming from the LDCs.[31] However, sugar was one of the products for which a transitional period was set: quotas on raw sugar would be increased gradually until marketing year 2008/2009 and the abolition of tariffs on non-quota sugar would start in marketing year 2006/2007. This is illustrated by Table 3.2. EBA sugar has the status as the SPS sugar whose quantity therefore has had to be reduced adequately.

Table 3.2. *Quotas and tariffs for EBA sugar*

Marketing year	**Quotas in tonnes (white sugar equivalent)**	**Tariffs on non-quota sugar**
2001/2002	74,185	Full duty
2002/2003	85,313	Full duty
2003/2004	98,110	Full duty
2004/2005	112,827	Full duty
2005/2006	129,751	Full duty
2006/2007	149,213	20% duty reduction
2007/2008	171,595	50% duty reduction
2008/2009	197,335	80% duty reduction
2009/2010	No quota	No duty

Source: Santana Baodo (2005).

[31] Least Developed Countries are listed in Annex II.

3.2.3 The Latest Reform of the CMO for Sugar

The latest reform of the CMO for sugar, set down by EC Regulation no. 318/2006, was at least partly enforced by the ruling of the WTO panel in 2005, which found that the EU was dumping three times more sugar exports than it was allowed to export under WTO rules (the EU's commitment in the Uruguay Round was to export maximum 1.3 million tonnes of sugar with subsidies annually, but it actually exported 4.1 million tonnes of sugar in marketing year 2000/2001). The EU was claiming that 2.7 million tonnes were not subsidised, but the WTO panel found that it was cross-subsidised by very high support provided for sugar produced under quotas. The panel also decided that the EU by the subsidised re-export of ACP and Indian sugar was breaching its WTO commitments (Oxfam, 2005). Therefore the EU had to take appropriate steps to remedy this situation.

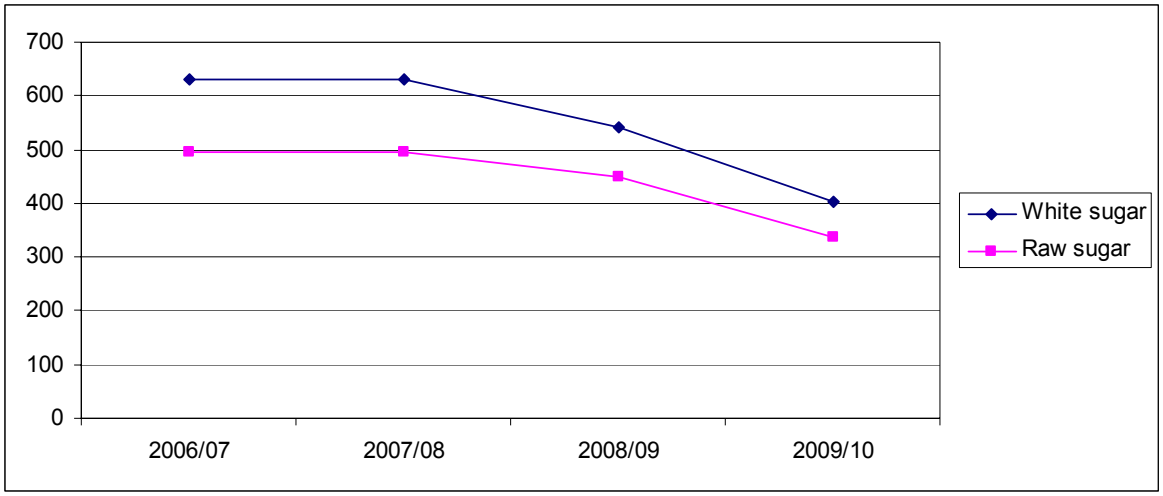
The 2006 reform brought several very important changes. First, it merged A and B production quotas while maintaining their volumes (17.44 million tonnes),[32] with out-of-quota sugar classified as surplus sugar being subject to a levy amounting 500 EUR/tonne. Nevertheless, previous producers of high quantities of C sugar would be allowed to buy additional quotas amounting in total to 1.1 million tonnes. The quota system was extended until the end of marketing year 2014/2015. Second, the reform set that the production levy shall amount 12 EUR/tonne of sugar produced under quota.

Third, the regulation determined how reference price for white sugar and also minimum price for beet will be reduced: the reference price for white sugar was set to 631.90 EUR/tonne in 2006/2007 marketing year and should decrease to 404.40 EUR/tonne in 2009/2010 marketing year. The minimum price for quota beet was set to decrease from 32.86 EUR/tonne in 2006/2007 marketing year to 26.29 EUR/tonne in 2009/2010 marketing year. This means that the reference price for white sugar should be reduced by 36% in four years. Its development from 2006 to 2009 is depicted in Figure 3.6.

It was also determined that during the four-year transition period intervention agencies can buy sugar only for 80% of the reference price, but no more than 600,000 tonnes annually, and should sell it at least at the reference price. In marketing year 2010/2011 intervention should have already been abolished completely.

[32] Sugar used in chemical and pharmaceutical industries and for bio-ethanol production is still excluded from these quotas.

Figure 3.6. *The development of the reference price for white sugar from 2006 to 2009 (in EUR/tonne).*



Source: EC Regulation no. 318/2006.

To help manufacturers with inevitable restructuring, EC Regulation no. 320/2006 set that for one tonne of renounced production quota manufacturers can get up to 730 EUR[33] in marketing year 2006/2007 (down to 520 EUR in 2009/2010). Farmers can also get compensation amounting to 64.2% of the price cut, which is included in the Single Farm Payment that is conditioned by compliance with environmental and land management standards.

Given that production has not declined as much as the Commission expected, it issued Regulation no. 1261/2007 by which it introduced additional incentives so that more quotas are voluntarily renounced. Also, by Regulation no. 1260/2007 it presented the possibility of cutting existing quotas by the end of February 2010 in case not enough quotas are renounced, so that there are no market imbalances as from the 2010/2011 marketing year.

The latest important change influencing the EU sugar regime was when, at the end of September 2007, the EU denounced the Sugar Protocol under the Cotonou Agreement with effect from 1st October 2009. This fact complicates the situation of ACP countries because if they fail to sign the EPAs they will lose their preferential access to the EU sugar market. Exceptions are those ACP countries that are also least developed and therefore should profit from a quota-free and duty-free access to the EU sugar market since 2009. The others, however, feel to be under pressure: they fear that abolition or a significant reduction of import duties on a substantial part of goods that they import (as it is demanded

[33] Depending on the extent of dismantling of production capacities, the maximum aid per renounced tonne could also be only 547.5 EUR or even 255.5 EUR in marketing year 2006/2007, falling to 390 EUR or 182 EUR in marketing year 2009/2010.

by the EU) would threaten their fragile economies,[34] but they also realize that losses from lost preferential access would be high. From the negotiations between the EU and six CAP regions it really seems that the two parties are not equal partners.[35] Until February 2008, only the Caribbean region signed an EPA. Most of the other countries signed Interim EPAs and their negotiations of full EPAs should continue until the end of 2008. However, some countries, especially from the Pacific region, declined to sign even an interim EPA.

Concerning EPAs and sugar trade, from Annex 2 of the EPA signed by the Caribbean region it is clear that until the end of September 2015 the signatories of the agreement should have a duty-free access to the EU market up to given quotas. However, imports from those countries that are not LDCs are subject to an automatic volume Safeguard clause. From October 2015, the Caribbean should have quota- and duty-free access to the EU market, also subject to the Safeguard clause.[36] Trade liberalization of the Caribbean economies should be gradual and sugar, being considered a sensitive product, has been excluded from it. Therefore it seems reasonable to expect that this arrangement would apply also to the other regions' EPAs.

CHAPTER SUMMARY

The creation of the Common Agricultural Policy of the EU was historically inevitable because of the geopolitical situation in Europe after WWII when food supplies were not reliable and a large part of the population was employed in agriculture. A unified approach in the area of agriculture was a logical consequence, given that all the Member States had their own agricultural policies and these had to be harmonized in order to enable the common market to operate properly.

The CAP has had five objectives of which some have been fulfilled, such as ensuring a fair standard of living for the agricultural community. However, the fulfilment of many is questionable, especially in the case of sugar: productivity might have increased, but regional specialisation that would also enhance productivity has not. Sugar is still being produced also in the Member States that are the least suitable for sugar beet cultivation.

[34] Both by jeopardizing their own producers and by reducing tariff revenues of their governments. For more information on this topic see Chang (2005) who supports this opinion. On the other hand, Messerlin (2001) is persuaded that poor economic growth of most ACP countries since 1965 despite their preferential access to the EU market has been caused by their unwillingness to liberalize their trade.
[35] For more information see Godfrey (2006).
[36] This means that if the EU decides that increased quantities of imported sugar are significantly disturbing its market, it can take measures of limited duration that are necessary to remedy the situation.

The stability of prices and supplies has been ensured, but very often not the reasonableness of prices for the consumers, which also applies to sugar.

For many commodities the Common Market Organisations were created. That for sugar was set up in 1968. Seven years later the EEC started to import under preferential conditions sugar from the ACP countries that were mostly former colonies of certain EEC Member States. The main instruments of the CMO for sugar have been production quotas, guaranteed prices, restrictions on imports and subsidised exports.

The first significant change that the EU sugar regime has encountered was in 2006. It especially entails a fall in the guaranteed price by more than one third and in consequence the production quotas are expected to be voluntarily renounced by European farmers. Although in 2009 the restrictions on imports of sugar from LDCs should be abolished, and even though the preferential exports from the ACP countries will not be stopped in the nearest future, if enough production quotas are renounced by European producers, the EU sugar production might decrease so much that the EU would not be generating huge surpluses of sugar anymore and would not need to subsidise their exports, dumping them on the world market.

4 IMPACTS OF THE EU SUGAR REGIME AND ITS PLANNED CHANGES

The EU sugar regime has very complex implications for different countries in the world. It influences not only the sugar market in the EU, but also that of third countries. However, the impact on third countries differs according to whether a given country has preferential access to the EU sugar market or not. The aim of this chapter is, first, to analyze what the consequences of the EU sugar regime on both the EU and third countries had been before the process of reform began in 2006 and, second, to assess what the impact of the planned changes on these players will be and what the outcome of full liberalization of the EU sugar regime would be.

4.1 Impact of the EU Sugar Regime before the 2006 Reform

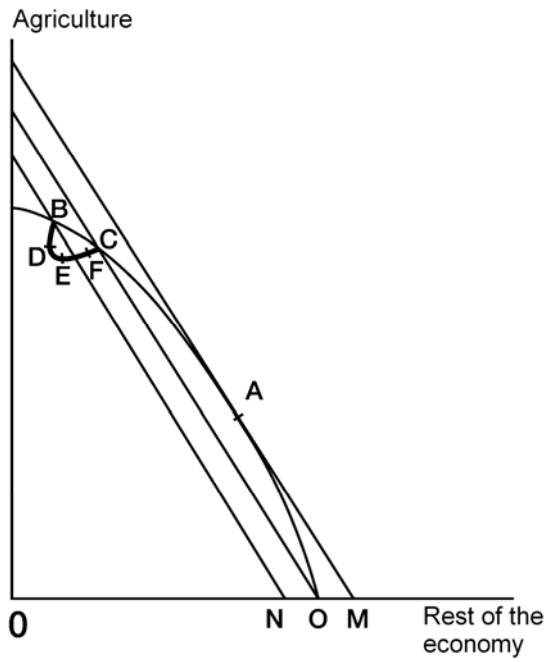
This Section will describe the various impacts that the EU sugar regime had until 2006 on different countries and their economies, because the character of these impacts also influences the consequences that the 2006 reform and subsequent changes will have on these countries. First, the influence of the sugar regime on the EU itself will be analyzed. Second, its impact on countries involved in it (such as LDCs or ACP countries) will be dealt with. Finally, its consequences for producers operating mainly on the world market will be assessed.

4.1.1 Impact of the EU Sugar Regime before the 2006 Reform on the EU itself

Since its introduction in 1968 the EU sugar regime has already cost the EU billions of EUR and has caused very inefficient allocation of resources, which might have contributed to a reduced growth potential of the EU. This impact is especially due to the combination of guaranteed prices, production quotas and import restrictions. Figure 4.1 illustrates what would happen in case of partial or total liberalisation of agriculture. Let us assume that the EU's economy was in point B in 2006 on the production possibility frontier. Therefore its output measured in terms of goods produced in the rest of the economy (i.e. industry and services) was amounting to point N. If the EU liberalized its sugar market, its economy would move to point C (through D, E and F during the time of restructuring when output may decline) and its output would increase to point O. Point A represents where the

economy would get if the whole agriculture was liberalised, with the EU's output amounting to point M.

Figure 4.1. *Increase of output after liberalization of the sector.*



Author's illustration

Due to its sugar regime, the EU has been producing very large quantities of sugar although on the world market there are many producers that are significantly more efficient. This is made possible by the fact that internal prices are kept so high. Watkins (2004) claims that the EU Court of Auditors assessed the total cost of the price difference between EU and world market prices to have amounted to 6.5 billion EUR in 2001. Nevertheless, the Court of Auditors, being aware of the limitations of its calculation, reported that this amount was only the top range of its estimate of economic costs arising from high guaranteed prices.

Internal prices of sugar are kept at a high level by prohibitive tariffs on imports. As was already explained in Figure 3.5, the lower this tariff, the lower the surplus would be and the higher imports from the world free market would be, because EU producers would not be able to compete with them. This means that dead weight losses and rents arising from such configuration of the EU sugar regime would decrease. Furthermore, the EU would not need to be disposing of its surpluses on the world market using costly export subsidies.[37]

[37] Main destinations of the EU sugar exports are Algeria, Egypt, Indonesia, Iraq, Israel, Lebanon, Libya, Norway, Persian Gulf, Switzerland and Syria (Berkum et al., 2005)

Also, as Teplá (2007) remarks, given that EU producers face distorted market incentives, they have become less competitive. On the contrary, countries that had given up such protectionism have already been profiting from it (there are good examples such as Australia or New Zealand).

Another aspect of the EU sugar production is the distribution of quotas. As was indicated in Subsection 3.1.3, even the least efficient Member States can be allocated high quotas. A very good example is Italy which was one of the three least efficient producers in 2003 but was allocated the fourth highest quota in marketing year 2002/2003. This country is not an exception: according to the analysis of NEI (2000), more than one half of the EU's production comes from Member States with sugar yield per hectare that is lower than the EU average.

Some authors (such as Messerlin, 2000) consider the EU sugar sector not being threatened by insufficient competition and therefore analyze it as if there was perfect competition. However, many disagree with such evaluation of this market. Watkins (2004) notes that in this sector the concentration of ownership and therefore also control over quotas have significantly increased: more than half of the total EU quota was held by only five companies by 2004.[38] And, according to him, both vertical and horizontal integration will continue in this sector. Furthermore, large corporations are beneficiaries of disproportionately higher amounts of support than small farmers, as is concluded both by Watkins (2004) and Raworth (2002).

Unfortunately for the consumers, in the EU productivity gains of the producers do not translate into lower prices, but are only becoming part of producers' rents, which can be seen in Figure 3.4: if the Domestic supply curve moved down, the price of sugar would remain the same and the area depicted by $c+d+i$ would enlarge. Rents have, however, cumulated especially in the hands of owners of fixed factors necessary for sugar production, such as land whose price has increased, or holding of quotas.

Furthermore, in the past the Court of Auditors was suspecting processors of making price-fixing cartels because it had discovered evidence of significant differences in prices across the EU sugar market (Watkins, 2004). This is supported by the House of Lords of the UK Parliament which reported that according to the company Cadbury Schweppes there is 'no true competition in the EU sugar industry… clearly demonstrated by the fact

[38] He supports his argument by the fact that it was confirmed by the Swedish Competition authority in its report "Sweet Fifteen: The Competition in the EU Sugar Market".

that we are paying 8-22 percent more than the institutional price for sugar in different countries in the EU, in spite of a situation of surplus supply'.

The EU's support to producers and growers of sugar is high and someone has to foot the bill. Costs of the EU sugar regime are borne by EU taxpayers and consumers of sugar and sugar-containing food. When comparing burdens imposed on taxpayers and consumers in different countries using Producer Subsidy Estimates (PSEs), it is clear that the burden is highest in the EU in absolute terms. PSEs indicate how high the transfers from domestic consumers and taxpayers to producers are, under a given set of agricultural policies. Percentage PSEs measure the total value of the transfers as a share on total value of production, including transfers. On the web site of the OECD, PSE data are available for the OECD countries and Brazil. Table 4.1 summarizes figures for the EU, the USA, Japan, Australia and Brazil for years 2001−2004.

Table 4.1. *Producer subsidy estimates in sugar sector for years 2001 - 2004 (in million EUR and %).*

	2001		2002		2003		2004	
Country	**PSE**	**Percentage PSE**	**PSE**	**Percentage PSE**	**PSE**	**Percentage PSE**	**PSE**	**Percentage PSE**
EU	2 417	49%	2 915	52%	3 171	64%	3 693	65%
USA	1 457	58%	1 289	53%	1 297	62%	974	56%
Japan	573	62%	529	61%	514	65%	504	65%
Australia	63	10%	73	11%	61	12%	64	11%
Brazil	282	3%	182	2%	215	2%	182	2%

Source: OECD database. www.oecd.org

From Table 4.1 it is obvious that unlike the very protectionist EU, the USA and Japan, world market exporters Australia and Brazil provide relatively low support to their sugar producers.

Concerning taxpayers, the expenditure dedicated to the CMO for sugar amounted to 1.7 billion EUR in 2004, which was 1.5% of the total budget expenditure. The most significant part of the costs of the CMO for sugar was made by subsidies for export of ACP sugar and amounted to 802 million EUR in 2004 (European Commission, 2004a). Given that export subsidies for quota sugar are financed by producer levies, the net budgetary costs were estimated to be around 1.1 billion EUR by DEFRA (2006). However, it cannot be claimed that these costs are borne by the producers because logically they transmit to a higher retail price of sugar. This is where the burden imposed on the consumers lies: they have to be buying sugar at prices two to three times higher than those on the world market.

4.1.2 Impact of the EU Sugar Regime before the 2006 Reform on Countries Having Preferential Access to the EU Sugar Market

The EU claims that preferential access to its protected market granted to LDCs and ACP countries is a kind of development aid. However, the impact of this arrangement has been ambivalent and may have had more negative than positive effects, especially depending on whether a given economy has become dependent on exporting sugar to the EU.

As LDCs have had this preferential access since 2001 only and their quotas have never been too high, it is not possible to say that they have a certain "sugar legacy". On the other hand, many ACP countries have been producing sugar for their colonizers since the 16th century and they could have developed dependence on sugar exports to Europe. Based on average figures for years 2001–2003, Table 4.2 summarizes how high their exports to the EU were, also as a share on total exports and total production.

Table 4.2. *ACP sugar exports to the EU and dependence on the EU sugar market (figures are rounded to thousand tonnes, white sugar equivalent).*

Country	Exports to EU (average 2001/03)	Total exports (average 2001/03)	Exports to EU as share on total exports (%)	Total production (average 2001/03)	Exports to the EU as share on total production (%)	Sugar production as share on 2003 GDP (%)
Barbados	39	39	**100%**	40	**98%**	**2%**
Belize	*47*	*92*	***51%***	*105*	***45%***	***10%***
Congo*	6	34	18%	41	15%	1%
Cote d'Ivoire	20	32	63%	144	14%	1%
Fiji	*151*	*248*	***61%***	*304*	***50%***	***8%***
Guyana	*180*	*244*	***74%***	*282*	***64%***	***16%***
Jamaica	131	131	**100%**	164	**80%**	**1%**
Kenya	8	8	100%	418	2%	n/a
Madagascar*	8	9	89%	36	22%	4%
Malawi*	49	83	59%	222	22%	5%
Mauritius	*490*	*540*	***91%***	*545*	***90%***	***8%***
Mozambique*	9	51	18%	140	6%	n/a
St. Kitts	*5*	*15*	*33%*	*19*	*26%*	*28%*
Swaziland	*146*	*456*	*32%*	*569*	*26%*	*24%*
Tanzania*	18	18	100%	159	11%	3%
Trinidad	44	55	**80%**	82	**54%**	**1%**
Zambia*	21	108	19%	203	10%	2%
Zimbabwe	49	172	28%	489	10%	2%
Total	**1,534**	**2,335**	**66%**	**3,962**	**39%**	**7%**

Notes: Surinam and Uganda are part of the Sugar Protocol but have no sugar quota agreed with the EU
** LDCs.*
Source: Berkum et al. (2005), adapted; South Centre (2007) for Sugar production as share on GDP.

It seems reasonable to assert that the EU sugar regime has had the deepest impact on sugar industries of countries with high exports to the EU both as a share on total sugar exports

and on total sugar production (good examples are Barbados, Jamaica, Mauritius or Trinidad). Such countries are marked **in bold** in Table 4.2. A very deep impact can also be expected on the whole economies of countries whose sugar production constitutes a large part of the GDP (countries like Guyana, St. Kitts or Swaziland). Such countries are marked *in Italics* in Table 4.2.

For both the LDCs and ACP countries, preferential exports to the EU have had several positive, although mainly short-term, effects. In many of these countries, exports of sugar into the EU have been an important source of stable foreign exchange revenues. According to NEI (2000) and Santana Baodo (2005) such revenues of ACP countries were 500 million EUR annually higher than they would be if ACP sugar was sold on the world market. This might be less than one would expect, but it is caused by the fact that many of the countries are relatively high-cost producers. Besides higher revenues, this preferential access also provided 300,000 people with employment in sugar industries of these countries (DEFRA, 2006).

The possibility of exporting sugar to the EU sugar market also stimulated investment into the sugar industries in many countries, which is really beneficial for those that are low-cost producers (such as Malawi, Swaziland, Zambia, Zimbabwe, or Ethiopia; for a comparison of costs with other producers see Table 4.3) because it only helped them to start profiting from something they can do efficiently. This is, however, not the case of many other countries that are medium- or high-cost producers. Their preferential access caused that more resources were invested in their sugar industries than would be efficient and that, by not concentrating on diversification, the vulnerability of their economies increased. This applies especially to ACP countries, because LDCs, under the EBA initiative, have been profiting from the preferential access for several years only and they will probably not develop dependence on exports to the EU market because the EU has already started to decrease the guaranteed prices, which would obviously be the main incentive for them. Some countries, such as Barbados, Mauritius and Jamaica, have become heavily dependent on exports of sugar to the EU. Unfortunately, they belong to the group of countries which are not low-cost, in which resources are inefficiently allocated and which might have serious problems after the EU changes its sugar regime.

Increased investment remunerated by high guaranteed prices has also had another negative impact: prices of land and other fixed assets increase, which makes other, unsubsidized activities (e.g. other agricultural industries) less profitable and also less competitive.

Table 4.3. *Costs of sugar production in LDCs and ACP countries.*

Low (full) cost (< €300/ton)	**Medium (full) cost (€301-500/ton)**	**High (full) cost (> €501/ton)**
ACP SP countries Malawi Swaziland Zambia Zimbabwe	**ACP SP countries** Belize, Congo, Cote d'Ivoire, Fiji, Guyana, Mauritius, Tanzania, Kenya	**ACP SP countries** Barbados Jamaica Madagascar St. Kitts, Trinidad.
LDCs Ethiopia Sudan	**LDCs** Burkina Faso Mozambique	

Source: Berkum et al. (2005)

For LDCs and ACP countries it would be much better if they could process their sugar more than to the stage of raw sugar only. It would allow them to develop their industry sector, because they could be exporting white sugar or sugar-containing food, such as confectionery. However, the EU imposes very high tariffs on such goods and does not even offer these countries any duty-free quotas for them, depriving the developing countries from more value-added activities. On the contrary, concerning sugar-containing goods, the EU competes with these countries on the world market, making their situation even worse.

Finally, returning to the EU's claim that preferential access to its sugar market is actually development aid, it is inevitable to question this assertion. First, in comparison with the Official Development Assistance (ODA), the EU's help through the costly purchase of EBA sugar is insignificant, which is well illustrated by Table 4.4. On the other hand, it is clear that when comparing EBA quotas with ODA flows, the help through the purchase of sugar may be understated due to the fact that it does not take into account dynamic effects of both FDI and domestic investment into sugar production.

It is true that from marketing year 2009/2010 LDCs should have quota-free access to the EU market, but it is uncertain whether the EU will not be using the Safeguard Clause in order to prevent triangular trade.[39] Watkins (2004) assesses losses arising from EBA quota restrictions to have amounted to 238 million USD from 2001 to 2004 for Mozambique, Ethiopia and Malawi only. These losses arise from increased export capacity of these countries and from rising premium in the EU market (because of falling world prices), which cause that costs of exclusion from the EU market rise.

[39] Triangular trade would occur if an LDC was importing sugar from a third country and was then exporting it to the EU market, requesting the guaranteed price. If imports from an LDC increase by more than 25% in comparison with the previous year, the Commission will decide whether the Safeguard clause needs to be applied.

Table 4.4. *Comparison of EBA sugar quota and total ODA flow in selected[40] LDCs in million USD.*

Country	EBA quota value 2002/03	Total ODA flows 2002
Sudan	8.1	351
Ethiopia	6.9	1,307
Malawi	5.0	377
Zambia	4.3	641
Bangladesh	no quota	913
UR Tanzania	4.4	1,233
Uganda	3.9	2,058
Mozambique	no quota	638
Nepal	4.3	365
Myanmar	no quota	121
Senegal	no quota	449
DR of Congo	no quota	807
Burkina Faso	3.4	473
Madagascar	no quota	373
TOTAL	40.3	10,106

Source: Santana Baodo (2005).

Second, the distribution of quotas has never been even: some LDCs had no EBA quota at all in marketing year 2002/2003, although they were also producers of sugar. This inequality of quota distribution applies also to ACP countries, as can be seen from Table 4.2. Mauritius, whose Real GDP Per Capita (PPP) was higher than Poland's in 2001 (Meier & Rauch, 2005), had a 2001-2003 average quota of 490,000 tonnes while Swaziland (with its Real GDP Per Capita (PPP) being *less than half* of that of Mauritius in 2001), was only given a quota of 146,000 tonnes, although it had nearly the same total production as Mauritius. Actually, 70% of ACP quotas are distributed among Mauritius, Fiji, Guyana, Swaziland and Jamaica, none of them being an LDC.

Third, this way of helping developing countries is extremely inefficient – it costs the EU much more than it brings to those countries. Finally, while being "helped" by the EU, both LDCs and ACP countries are affected by EU's dumping on the world market, where they have to export all their production for which they have no preferential arrangements. This matter will be discussed in more detail in Subsection 4.1.3.

4.1.3 Impact of the EU Sugar Regime before the 2006 Reform on Countries Operating Mostly on the World Market

The EU sugar regime has also affected countries that have been operating almost exclusively on the world market. The biggest exporters to the world market are Brazil, Thailand and Australia. These are also the countries that challenged EU's subsidized

[40] These countries were selected according to their potential to increase significantly the sugar production, all of them producing at least 30,000 tonnes in 2002.

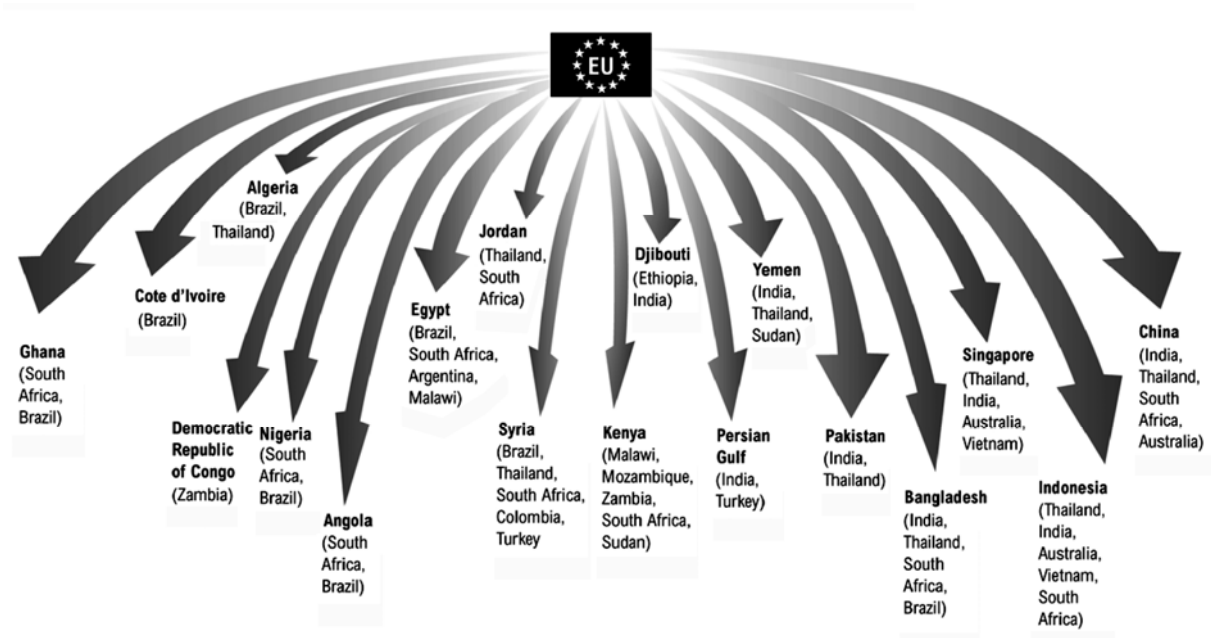
exports under the WTO. However, also many other countries are operating on the world market, some of them belonging to the group of LDCs or other low-income countries (such as India, Colombia, Cuba and South Africa), or even ACP countries (from these it concerns mainly those that have low preferential access to the EU or other countries).

By dumping its large surpluses, the EU depresses and destabilizes prices on the world market. To assess how high foreign exchange losses caused by this dumping were, Fowler & Fokker (2004) use Borrell and Hubbard's (2000) analysis estimating that this dumping lowers prices by 20-23%. Employing 2002 export figures, they come to the conclusion that because of EU dumping, Brazil lost 494 million USD, Thailand 151 million USD and South Africa 60 million USD in 2002.

One important aspect of the EU sugar dumping is that the EU can offer its surplus sugar for any price. Even if prices fall below the costs of the most efficient producers, the EU only increases the export subsidies and can continue selling sugar on the world market, which deprives other sugar producers of lots of export earnings and worsens their investment opportunities. For example, Cuba has already had to close around half of its sugar mills because of extremely low export prices. By its exports of surplus sugar, the EU actually also deteriorates export opportunities of countries which it claims to be helping through the ACP Sugar Protocol or the EBA initiative.

The EU sugar regime before 2006, with its guaranteed prices, large quotas for EU producers and low market access for efficient producers has caused inefficient allocation of resources for countries operating on the world market. Efficient producers would be producing much more sugar if the EU was not an exporter of subsidized sugar. Watkins (2004) reminds that the EU often argues that if it liberalized its sugar regime, main winners would only be countries that already are large exporters, such as Brazil and Thailand. But this is not true: as can be seen from Figure 4.2., which is based on figures for 2001/2002 marketing year, the EU is competing on different markets also with many other producers. In this Figure, countries with which the EU competes on a given market are listed in parentheses. Furthermore, even if Brazil and Thailand were main beneficiaries of the liberalization, there would be nothing wrong about this: they are developing countries with large rural populations and they have a comparative advantage in sugar production, so extending sugar trade is in their development interest.

Figure 4.2. *EU's competitors in selected export markets (based on figures 2001/2002).*



Source: Watkins (2004), adapted.

4.2 Impacts of the 2006 Reform and the Potential Full Liberalisation of the EU Sugar Regime

This Section will describe the impacts of the 2006 reform and the potential full liberalisation of the EU sugar regime on different countries. First, the impacts on the EU will be analysed. Second, the impacts on countries having preferential access to the EU will be dealt with. Third, the EU's aid to ACP countries with adjustment to the sugar regime changes will be assessed. Finally, the impact of the 2006 reform and the full liberalisation of the EU sugar regime on countries operating mostly on the world market will be evaluated.

4.2.1 Impact of the 2006 Reform and the Potential Full Liberalisation of the EU Sugar Regime on the EU Itself

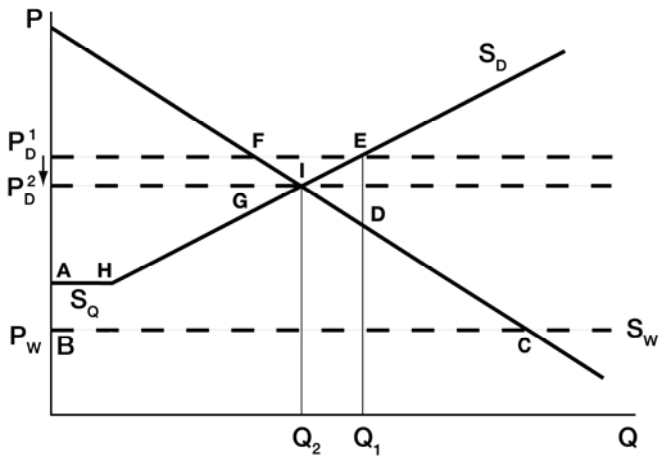
The 2006 reform of the EU sugar regime and also the changes in the EU sugar trade policy have already had some effects and will probably affect the EU more significantly in the nearest future.

Until the 2008/2009 marketing year, already 2.2 million tonnes of quotas have been renounced by European farmers. The European Commission expects that in anticipation of the reference price of white sugar fall to 404.40 EUR/tonne in the 2009/2010, additional quotas will be renounced for that marketing year, especially by the least efficient producers. However, Gohin & Bureau (2006) anticipate that fewer quotas will be

renounced than has been expected because certain efficient producers will be able to expand quotas allocated to them and also some countries will continue granting national aids. Therefore, it is presumable that the European Commission will be forced to cut quotas for the marketing year 2010/2011. This means that additional farmers will have to stop producing sugar and face difficulties when starting to do something else, but it is important to keep in mind that sugar growers constitute only a very small part of all farmers (4% according to the Court of Auditors, 2001) and therefore this restructuring should not have consequences on the EU as a whole.

Both the lower guaranteed prices for sugar and the lower production will improve the inefficient allocation of resources. This is illustrated by Figure 4.3: as the price on the internal market decreases from P^1_D to P^2_D and as sugar output lowers from Q_1 to Q_2 thanks to renounced or cut quotas, both the dead weight losses and the rents to producers diminish. Originally the dead weight loss was a polygon bounded by points A-B-C-D-E-I-F-G-H, but after the price fall it would decrease to a polygon bounded by points A-B-C-I-H. Concerning rents, the mechanism is analogical: originally they were depicted by a polygon bounded by points A-H-E-P^1_D and after the price fall would be only A-H-I-P^2_D.

Figure 4.3. *Improved allocation of resources in the EU after decreased production and guaranteed prices.*



Author's illustration.

From 2009 the EU will also have to cope with unlimited imports of sugar under the EBA initiative. Predictions of how high the quantities of sugar imported by the LDC's will be differ (for more details see Subsection 4.3.2). Nevertheless, the EU will have to be careful not to be exporting higher quantities of subsidised sugar than it is allowed by the WTO.

There are several models aiming to assess the consequences of the 2006 reform. However, they are not directly comparable because they differ in the number of EU Member States that they take into account, and sometimes they have different assumptions. The model of Gohin & Bureau (2006) would be very suitable if it was not designed for 15 Member States only.

The assumptions of the DEFRA (2006) model which was designed for 25 Member States are closest to the reality. This model simulates two possible scenarios. Scenario A takes into account the 2006 reform and assumes that the EU will be exporting white sugar up to 1.3 million tonnes which is the limit imposed by the WTO. Scenario B assumes that the Doha Round of negotiations will be successful and that the EU will have to implement its commitment of eliminating export subsidies on agricultural products by 2013, which would imply a more significant lowering of production than under Scenario A. The impacts of changes under both Scenarios on the EU production and imports into the EU are summarized in Table 4.5.

Table 4.5. *Impacts on the EU production and imports after 2010 (million tonnes)*

EU 25	**Base**	**Scenario A**	**Scenario B**
EU production (beet sugar)	19.8	14.7 *(-26%)*	13.4 *(-32%)*
ACP imports	1.4	1.2 *(-14%)*	1.1 *(-21%)*
LDC imports	0.2	1.4 *(+600%)*	1.2 *(+500%)*
Other imports	0.6	0.3 *(-50%)*	0.3 *(-50%)*
EU internal price	667 EUR/tonne	438 EUR/tonne *(-34%)*	412 EUR/tonne *(-38%)*
Export refund	504 EUR/tonne	293 EUR/tonne *(-42%)*	n/a

Source: DEFRA (2006)

The DEFRA (2006) analysis requires several comments. First, it expects that prices of white sugar in the EU will not fall to 404 EUR/tonne because in such case domestic production and preferential imports would not be able to satisfy the demand for sugar in the EU as such a low price would be insufficient for the producers. Second, it expects that owing to the restructuring scheme introduced by the EU, high-cost producers will give up their production. In the end, DEFRA expects the production to decrease by 5 - 6.5 million tonnes. Third, imports from the ACP countries are not supposed to fall significantly due to the reference price decrease, because lower imports from high-cost producers will probably be substituted by imports from lower-cost producers. Fourth, imports of EBA sugar are supposed to be substantially higher in both Scenarios of the reform than in the baseline. However, due to the lower expected price in Scenario B, LDCs' imports are also supposed to be slightly lower: with a decreasing price the EU sugar market loses its attractiveness for

higher-cost producers. DEFRA's estimates are comparable with those presented by South Centre (2007) that expects the EU sugar production to be 12.2 million tonnes in marketing year 2012/2013 and total imports into the EU to amount to 3.1 - 3.9 million tonnes. However, the level of EBA imports is rather uncertain – in the case of reform scenario, the European Commission expects these imports to be more than 2 million tonnes, compared with the estimated 3.5 million tonnes in the case of no price cut and unlimited access to the EU market.

DEFRA (2006) also analyses the welfare impacts of the two scenarios on the EU market participants. This is summarized in Table 4.6.

Table 4.6. *Estimated welfare effects in the EU of the 2006 reform after 2010 (in million EUR per year, rounded to the nearest 100 million EUR).*

EU 25	**Scenario A**	**Scenario B**
Consumer savings	3,700	4,100
Taxpayers	-800	-500
Growers a)	500	400
Processor/refiner benefits b)	-1,000	-1,000
NET BENEFIT	**2,400**	**3,000**
Continuing cost to consumers and taxpayers	-4,300	-3,600
Continuing welfare loss	-2,100	-1,500

a) includes benefits to non-sugar beet growers where compensation is ultimately paid on a regional basis;
b) Restructuring aid payments not included in processor impacts.
Source: DEFRA (2006)

Given that under Scenario B both the EU's sugar production and imports from third countries are lower than under Scenario A, the net benefit for Scenario B estimated at 3 billion EUR is higher than that for Scenario A. Therefore also continuing welfare loss and cost to consumers and taxpayers arising from the remaining protection are lower for Scenario B, making together 5.1 billion EUR per year.

Besides this, the EU might also be spending its money on aid to especially ACP countries negatively affected by the restructuring of its sugar market. In the future, this cost might be higher than has been planned because the ACP countries do not consider this amount to be sufficient.

A potential full liberalisation of the EU sugar sector would be especially beneficial for European consumers. Messerlin (2001) presents two models of impacts of full liberalisation on the EU: a computable partial equilibrium model (Hufbauer-Elliott (1994) model, Model 1 for our purposes) and a nonlinear model developed by Francois and Hall (1997) – Model 2 for our purposes. Their results are reviewed in Table 4.7.

***Table 4.7**. Estimated welfare effects of liberalising the EU sugar sector (in million EUR).*

Overall ad valorem tariff equivalent	117%
Induced increase in (c.i.f.) imports	3,942
Consumer surplus gain - Model 1	4,041
Change in domestic price – Model 1 (in %)	-35%
Consumer surplus gain - Model 2	4,268
- of which producer surplus	980
- of which tariff revenue	983
- of which quota rent	0
- of which efficiency gain	2,306
Change in domestic price – Model 2	- 20%

Source: Messerlin (2001)

Both models estimate the EU's costs of protection to be very high – more than 4 billion EUR per year. The net welfare gain (composed of the quota rent and efficiency gain) is assessed by Model 2 to amount to 2.3 billion EUR. The two models differ quite significantly concerning the expected price fall. If the sugar sector was fully liberalized, EU consumers would be buying sugar for world market prices. If we take into account the estimates of the world price increase for the case that the EU fully liberalises its sugar market (will be discussed below), the estimate of Model 1 (a 35% price fall in the EU) seems to be more reasonable.

DEFRA (2006) also analyses the impact of the potential full liberalization of the EU sugar market. When discussing the results of the DEFRA model, it is, however, necessary to keep in mind that they have some limits due to the fact that responses of all the stakeholders are difficult to predict using currently observed variables because these can change in response to the liberalisation. An important assumption of this model is that any compensation to EU growers and processors would be decoupled, i.e. payments given to the farmers would not depend on the height of the output that they produce.

The outcome of the full liberalisation of the EU sugar regime on the EU market itself is summarized in Table 4.8. According to DEFRA, in the EU the price of sugar would fall significantly (nearly by 60%), causing that the difference between the world market and EU market price would disappear. The EU sugar production would fall by around 70%. This estimate is supported by the analysis of Centre of International Economics (2002) that expects that the EU production would fall by 64%. This means that only the most efficient producers would be able to continue producing sugar. To satisfy the demand of EU sugar consumers, imports would amount to around 11 million tonnes annually.

Table 4.8. *Impacts of full liberalization on EU production and imports (million tonnes)*

EU 25	**Base**	**Full liberalization**
EU production (beet sugar)	19.5	5.7 *(-71%)*
ACP imports	1.4	n/a
LDC imports	0.2	n/a
Other imports	0.6	11.3
EU internal price	667 EUR/tonne	283 EUR/tonne *(-58%)*
Export refund rate	504 EUR/tonne	n/a

Source: DEFRA (2006)

Besides the impact of the full liberalisation of the EU sugar market on sugar production and imports, DEFRA (2006) also analyses its welfare impact on the EU. This is summarized in Table 4.9. The substantial decrease in price is estimated to bring more than 6 billion EUR per year to the EU consumers. DEFRA estimates that taxpayers will not encounter a gain, either, because on the one hand, costs of the EU sugar regime would disappear, but on the other hand, there would probably be decoupled compensation to growers (estimated to be around 1.5 billion EUR). The substantial decrease in price is estimated to bring more than 6 billion EUR per year to the EU consumers. DEFRA estimates that taxpayers will not encounter a gain, either, because on the one hand, costs of the EU sugar regime would disappear, but on the other hand, there would probably be decoupled compensation to growers (estimated to be around 1.5 billion EUR).

Table 4.9. *Estimated welfare transfers in case of full liberalisation on the EU (in million EUR per year, rounded to the nearest 100 million EUR).*

EU 25	**Full lib.**
Consumer savings	6,100
Taxpayers	-400
Growers	0
Processor/refiner benefits	-1,300
NET BENEFIT	**4,500**

Source: DEFRA (2006)

The substantial decrease in price is estimated to bring more than 6 billion EUR per year to the EU consumers. DEFRA estimates that taxpayers will not encounter a gain, either, because on the one hand, costs of the EU sugar regime would disappear, but on the other hand, there would probably be decoupled compensation to growers (estimated to be around 1.5 billion EUR). Although both Messerlin (2001) and DEFRA (2006) are calculating with similar intervention/reference price, the results of their models are different, for which there are several reasons. First, Messerlin's models, being five years older then DEFRA's, are made for 15 EU Member States only, while the DEFRA's model

takes into account 25 Member States. Therefore both gains and losses are different in absolute terms. Furthermore, Messerlin's Model 1 assumes perfect competition in the sugar market, which is questionable. Second, Messerlin estimates a significantly lower price decrease than DEFRA. The estimate of DEFRA seems to be more realistic for calculating the effects of full liberalisation, because the price fall estimated by Messerlin might be even smaller than is expected after the 2006 reform (together with other newest changes) is implemented, i.e. 36%.

4.2.2 Impact of the Reform and the Potential Full Liberalisation of the EU Sugar Regime on LDCs and ACP Countries

Both the reform and a possible full liberalisation of the EU sugar market would have far-reaching, in some cases relatively serious, consequences for countries having a privileged access to the EU market. For several decades the SP ACP countries have been used to exporting sugar to the EU for highly remunerative prices and now they will have to adjust to deep changes in only several years. The European Commission (2005) estimates that even if exports to the EU make up only 41% of total sugar production of ACP countries, they represent more than 70% of the countries' sectoral revenues. Therefore it is understandable that for these countries the price cuts seem to be simply too deep for such a short time for adjustment. The EU will help the ACP countries to overcome the reform, but they do not consider the help that has already been offered and promised to be sufficient.

ACP countries, of them especially the non-LDCs, will be affected from the macroeconomic, as well as from the microeconomic point of view: their foreign exchange earnings will be influenced; also their industries' revenues and use of different factors of production (land, capital and labour) will not remain unchanged. The significance of such changes mostly depends on the depth of a country's dependence on sugar production and exports to the EU, on its efficiency and on the availability of feasible alternatives.

For ACP countries the reform of the EU sugar regime will result in a decrease of the value of their quotas. This is illustrated by Table 4.10. The total loss is quite significant – in only three years more than 165 million EUR. For some of the ACP countries the loss might be even larger than shown in this Table because when the EU price becomes too low for them, they might not be able to fill their quotas at all, and given that on the world market prices are even lower, they might have to cease production. On the other hand, other countries may be able to expand their exports to the EU if the less efficient countries give up their quotas. This would help LDCs and efficient non-LDC ACP countries to offset the lower price by a higher quantity of sugar sold on the EU market. Those that continue

Table 4.10. *Loss of the value of quotas for ACP countries (million EUR).*

	Quota value (2001 CMO)	Quota value loss 2006/07 & 2007/08	Quota value loss 2008/09	Total quota value loss 2006-2009
Mauritius	257.1	13.1	36.8	63.0
Fiji	85.7	4.4	12.3	21.0
Guyana	83.5	4.3	12.0	20.5
Swaziland	62.8	3.2	9.0	15.4
Jamaica	62.2	3.2	8.9	15.3
Trinidad	22.9	1.2	3.3	5.6
Barbados	22.0	1.1	3.1	5.4
Belize	21.1	1.0	3.0	5.2
Zimbabwe	15.7	0.8	2.2	3.8
Malawi*	11.0	0.6	1.6	2.7
St Kitts	8.3	0.4	1.2	2.0
Madagaskar*	5.8	0.3	0.8	1.4
Congo*	5.3	0.3	0.8	1.3
Cote d'Ivoire	5.3	0.3	0.8	1.3
Tanzania*	5.3	0.3	0.7	1.3
Zambia*	5.3	0.3	0.7	1.3
Mozambique*	3.1	0.2	0.5	0.8
TOTAL	**682.3**	**16.3**	**97.6**	**165.1**

** LDCs*

Source: South Centre (2007)

producing sugar might also profit from lowered competition from the part of the EU that is supposed to cease exporting sugar and from an increased price on the world market. For example Berkum et al. (2005) mention the review of different analyses of the development of the world price performed by Milner et al. (2004) whose result is that the medium value of expectations is a rise of the world price by 38% under full liberalisation, which would approximately mean a fall of the EU price by nearly 50%.

By comparing the total costs of producing and shipping sugar into the EU with the EU price of raw sugar as it is planned to be in 2009/2010, Table 4.11 shows us which countries are not supposed to be capable of exporting their sugar to the EU. Based on this analysis, six ACP countries are expected to be uncompetitive in 2009/10 unless massive restructuring takes place, which is, however, not always possible or reasonable. If the price fell another 5 EUR/tonne lower, another two countries would become unable to sell their sugar in the EU market. Such development of the EU price is not impossible given that it will become more flexible due to the fact that the intervention price will be 20% below the reference price.

Table 4.11. *Comparison of total costs of ACP producers with EU price in 2009/2010 in EUR/tonne.*

	Production costs 2009	Transport costs 2009	**Total cost**	Pre-Reform EU price	**EU price 2009/10**
Trinidad	440	80	**520**	523.7	**335.2**
St. Kitts	440	80	**520**	523.7	**335.2**
Barbados	352	60	**412**	523.7	**335.2**
Madagaskar	317	80	**397**	523.7	**335.2**
Kenya	264	120	**384**	523.7	**335.2**
Cote d'Ivoire	264	112	**376**	523.7	**335.2**
Tanzania	211	120	**331**	523.7	**335.2**
Congo	229	104	**333**	523.7	**335.2**
Jamaica	264	56	**320**	523.7	**335.2**
Fiji	229	80	**309**	523.7	**335.2**
Belize	211	92	**303**	523.7	**335.2**
Mauritius	229	64	**293**	523.7	**335.2**
Guyana	211	76	**287**	523.7	**335.2**
Zambia	141	116	**257**	523.7	**335.2**
Swaziland	176	76	**252**	523.7	**335.2**
Zimbabwe	158	84	**242**	523.7	**335.2**
Malawi	141	92	**233**	523.7	**335.2**
Mozambique	141	68	**209**	523.7	**335.2**

Source: CTA/Agritrade[41]

Many more countries would join the group of uncompetitive producers if the EU sugar regime was fully liberalised. Some sugar industries might be able to continue producing at the EU market price after restructuring, but it is questionable whether such industries are worth restructuring to adjust to this price, given that the EU sugar regime might be fully liberalised one day, which would cause an even deeper price fall.

On the other hand, several countries, such as Zambia or Mozambique, are able sell sugar at much lower prices than 335 EUR/tonne, but they would need more investment into the sugar industry. Nevertheless, given the uncertainty about the development of the prices on both the EU and the world market in the longer run, it is questionable whether most investors would not consider this to be too risky. From non-ACP LDCs, those that would be able to sell their sugar at the projected EU price are Ethiopia and Sudan. On the contrary, total production and transport costs of Senegal are too high.

Taking into account also plans of different industries and countries for the future (such as restructuring or expansion), the analysis by LMC & Oxford (2003) comes to a different result concerning the viability of sugar industries in ACP countries than South Centre (2007). It considers several options, of which two are of our interest: first, a price cut (raw sugar would cost 325 EUR/tonne) with unlimited access for LDCs and limited access for ACP countries (quotas of these are adjusted according to the need of the EU,

[41] Used by South Centre (2007).

taking into account unlimited imports from the LDCs and the EU's WTO commitments. This is, in fact, the outcome of the 2006 reform and subsequent changes that have already been made), and second, full liberalisation of the EU sugar market (price support would be abolished and internal prices would fall to the world market level), which might come true in the future.

Under the price cut option, the following countries are not supposed to be able to cover their full costs: Barbados, Côte d'Ivoire, Jamaica, Madagascar, St. Kitts, Trinidad and, contrarily to the analysis by South Centre (2007), also Belize and Jamaica. St. Kitts ceased sugar production in 2005, which only supports these analyses. In the case of full liberalisation, Fiji and Mauritius would also become uncompetitive. Table 4.12 shows the supply responses of ACP countries to the considered options.

Table 4.12. *Current and future sugar production in ACP countries (thousand tonnes, raw value)*

	Current production	Price cut, limited access	% change	Full liberalisation	% change
Barbados	46	0	-100%	0	-100%
Belize	122	0	-100%	0	-100%
Congo	59	59	0%	59	0%
Cote d'Ivoire	161	0	-100%	0	-100%
Fiji	335	180	-46%	0	-100%
Guyana	307	280	-9%	107	-65%
Jamaica	177	0	-100%	0	-100%
Madagascar	45	0	-100%	0	-100%
Malawi	244	272	11%	244	0%
Mauritius	614	546	-11%	0	-100%
St. Kitts	21	0	-100%	0	-100%
Swaziland	576	731	27%	731	27%
Tanzania	176	300	70%	300	70%
Trinidad	88	0	-100%	0	-100%
Zambia	230	250	9%	230	0%
Zimbabwe	578	578	0%	578	0%

Note: Future production levels include any reduction in sugar production that might have occurred as a result of industry restructuring.

Source: LMC & Oxford (2003), adapted

Gohin & Bureau (2006) also expect that Fiji and Mauritius will be forced to decrease their production. However, expectations about Guyana differ: LMC & Oxford (2003) and Gillson et al. (2005) expect Guyana to be able to continue its sugar production, although in a lower quantity. On the other hand, Gohin & Bureau and also the European Commission (2005) suppose that it will have to cease production completely.

The loss of foreign exchange earnings of ACP countries is closely connected with changes in their production and exports. It mostly depends on the extent of their access to

the EU market, on the EU price and also on the height of the world prices. From Table 4.13 that summarizes ACP countries' current and future export earnings from sugar, it is clearly visible that all of them will face foreign exchange losses under both scenarios.

Table 4.13. *Current and future export earnings from sugar of ACP countries (in million EUR)*

	Current Foreign exchange earnings (average 2000-2001)	**Price cut, limited access**	**% change**	**Full liberalisation**	**% change**
Barbados	32	0	-100%	0	-100%
Belize	36	0	-100%	0	-100%
Congo	16	11	-31%	9	-44%
Cote d'Ivoire	12	0	-100%	0	-100%
Fiji	117	54	-54%	0	-100%
Guyana	123	84	-32%	31	-75%
Jamaica	73	0	-100%	0	-100%
Madagascar	12	0	-100%	0	-100%
Malawi	24	11	-54%	4	-83%
Mauritius	291	155	-47%	0	-100%
St. Kitts	11	0	-100%	0	-100%
Swaziland	102	81	-21%	67	-34%
Tanzania	13	4	-69%	3	-77%
Trinidad	30	0	-100%	0	-100%
Zambia	34	32	-6%	28	-18%
Zimbabwe	74	50	-32%	46	-38%
TOTAL	**1,000**	**482**	**-52%**	**188**	**-81%**

Source: LMC & Oxford (2003), adapted.

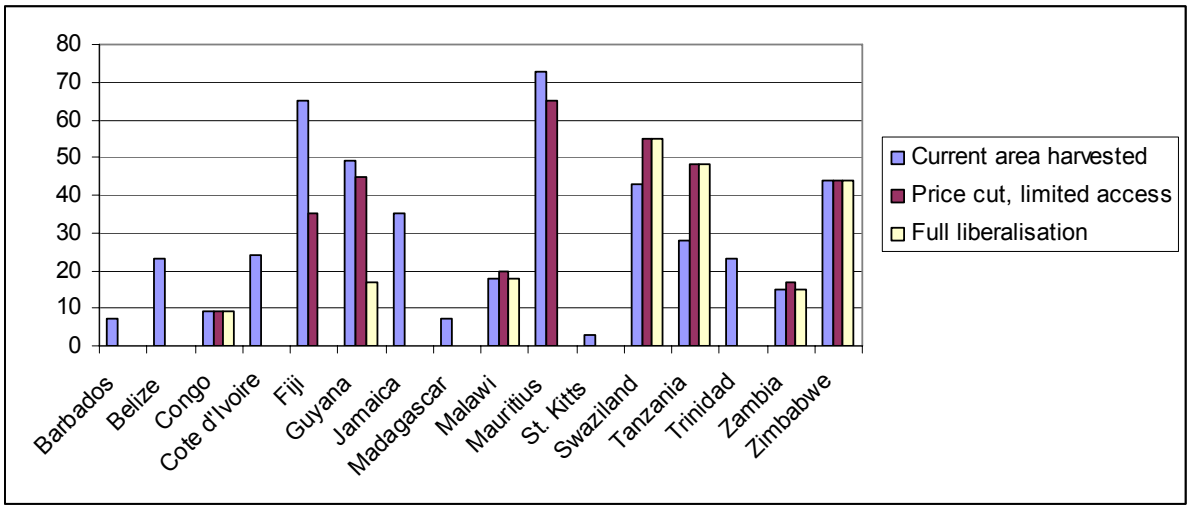
This loss will be least significant for Zambia which is only little exposed to the EU sugar market, is a low-cost producer and will profit from the EBA initiative. Generally, even if the production of ACP-LDCs does not increase or even decreases, their exports to the EU might not decrease either, given that they can, thanks to the EBA initiative, only divert their exports to third markets to the more remunerative EU market. This would, however, happen only in the case of the price cut, because under full liberalisation, prices in the EU and on the world market would balance out. After the 2006 reform and after the EBA initiative is fully implemented also for sugar, the European Commission expects all LDCs to export 2.2 million tonnes to the EU in 2012/13.

Concerning the impact on industry revenues, based on average figures for years 2000-2002, LMC & Oxford (2003) expects the total revenue loss of ACP sugar industries to be 460 million EUR per year in case of the price cut and 750 million EUR per year in case of the full liberalisation. Countries that are most exposed to the EU market, such as Mauritius or several Caribbean countries, will face highest losses. Only Malawi, Tanzania, Zambia and Zimbabwe are supposed to have slightly higher industry revenues.

In all countries that will have to decrease or even cease sugar production, the use of all factors of production employed in sugar growing and manufacturing will decrease. This especially includes utilization of land, the quantity of capital used and also employment in sugar processing on both the agricultural and industrial level.

Figure 4.4 shows what the expected levels of area under sugar cultivation are. Relatively highest decrease of such land would be in all countries that are expected to cease production (these are indicated in Table 4.12). Among those that might continue production, the highest decrease of land used for sugar cultivation in absolute terms is expected to take place in Fiji under the price cut scenario, while a rise might occur in Malawi, Swaziland, Tanzania or Zimbabwe. Under the full liberalisation scenario, additional countries would cease production, such as Fiji or Mauritius, and only Swaziland and Tanzania are expected to have more land dedicated to sugar growing than in the base period.

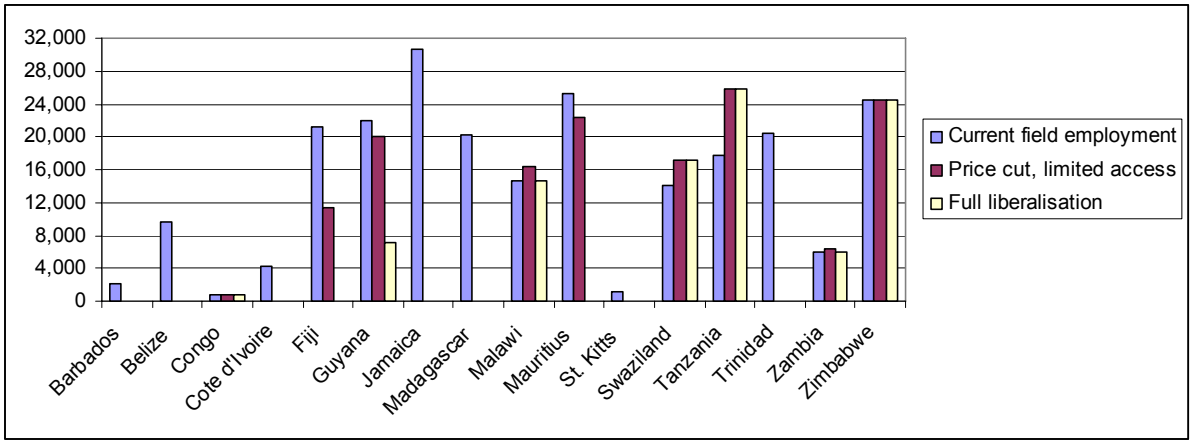
Figure 4.4. *Area under cultivation as average of 2000-2002 figures and in the future (in thousands of hectares)*



Source: data by LMC & Oxford (2003)

Concerning employment, in countries that will have to cease production, both the employment in the fields and in the factories will go down to zero. Taken this into account, employment in factories in all ACP countries is only expected to decrease by 12% in the case of the price cut and by 34% in the case of full liberalisation. However, employment in the fields is supposed to decrease more dramatically (in total by 38% in the case of price cut and by 59% in the case of full liberalisation), as is illustrated by Figure 4.5. Under both scenarios, relatively highest decrease in employment would be in countries that have to cease production. In absolute terms, in the case of price cut, except countries that have to cease production, the decrease would be highest in Fiji (as in the case of the size of

Figure 4.5. *Employment in the sugar fields as average of 2000-2002 figures and in the future.*



Source: data by LMC & Oxford (2003)

harvested land). Under the full liberalisation option, except countries that would join the group of those that ceased production already under the price cut (newly countries such as Fiji and Mauritius), the highest fall in employment in the fields would take place in Guyana.

The ways in which the concerned countries are able to cope with the changes of the EU sugar regime depend on several aspects: first, on their exposure to the EU sugar market; second, on their efficiency and the extent to which they can restructure their sugar industries; third, on the availability of an alternative use for the factors of production; fourth, on the volume of resources granted by the EU as help with overcoming the reforms.

Concerning the consequences of the 2006 reform and the exposure to the EU market, it is very important to discuss LDCs separately. These have never been allotted very high quotas and furthermore from 2009/2010 they will have the possibility of offsetting, at least partially, the lowered EU price by a higher quantity of sugar supplied to the EU. For the other ACP countries, the access to the EU will probably remain the same in the next several years, supposing they do not fail to sign EPAs. In the more distant future, the full liberalisation of the EU sugar regime cannot be excluded, which would imply that all LDCs and ACP countries would have the same access possibilities, as well as all other countries. However, in the short run, ACP countries that are most exposed to the EU market, such as Mauritius that is the holder of the highest quota or Barbados which was exporting 98% of its sugar production to the EU in 2001-2003 or Guyana whose sugar production was making 16% of its GDP in 2003, will surely face difficulties.

As far as efficiency and restructuring are concerned, the 2006 reform will have the deepest impact on countries that are either high-cost producers or are very distant from

world markets, which increases substantially their transport costs. This concerns especially the countries in the Caribbean, such as Trinidad, Barbados or Saint Kitts (this island has already ceased sugar production) where the production costs are so high that restructuring would never be sufficient for adjustment to new lower prices. According to some analyses, e.g. by Berkum et al. (2005), Jamaica and Madagascar also belong to the group of countries where restructuring would be useless.

Some countries have already started to adjust to the change of the EU sugar regime: for example Mauritius has begun to concentrate more on the production of ethanol and production of electricity from bagasse. In this country substantial mechanisation of the sugar cane cultivation is not possible due to its mountainous surface. Other countries that might keep their sugar industries if they restructure them are Fiji, which already has the highest part of its foreign exchange earnings coming from tourism, and, according to some analyses, also Guyana. Only low-cost sugar producers, such as most LDCs, Zimbabwe and Swaziland are expected not to need any restructuring to remain competitive.

The availability of alternative use of factors of production is very important for all countries that will have to decrease or cease sugar production. Concerning land, especially countries in regions where hurricanes are frequent, like in the Caribbean, will face the problem of what other subtropical crop would be resistant enough to be able to replace sugar cane.

Regarding the use of capital and employment, not all countries seem to have many alternative options and in many of them the labour and capital markets are not well developed and sometimes are very inflexible. Jamaica already faces a problem of high unemployment and in countries like Côte d'Ivoire and Madagascar the GNP per worker in the sugar sector is by more than 400% and by 170%, respectively, higher than GNP per worker in the rest of the economy. The same applies for Guyana where the GNP per worker in the sugar sector is nearly 180% higher than that in the rest of the economy (based on figures by LMC & Oxford, 2003). This suggests that these countries would probably be unable to find a reasonable utilization for capital and labour that would no more be needed in the sugar industry. Concerning Mauritius whose sugar industry would probably not survive full liberalisation of the EU market, it is questionable whether there is a crop that could replace sugar cane on such a large scale (around 64% of land is used for sugar cane cultivation on this island). On the other hand, many Caribbean countries might not be able to diversify their agriculture, but they can and some have already had

diversified their economies (e.g. Trinidad thanks to oil production and tourism and islands like Barbados or St. Kitts by investing into tourism, too, or into financial services).

The biggest problems on the micro-economic level can be expected in the countries that would have to decrease their sugar production and where sugar industries provide their employees with social services such as housing, education or medical care. That would mean especially countries like Guyana, Jamaica or those in Southern Africa. Also industries in countries that are expected to remain competitive after the reform might decrease the extent of social services that they provide due to the fact that their profit margin would diminish.

4.2.3 Aid of the EU to ACP Countries

It has already been explained how the changes of the EU sugar regime have affected and will affect economies of the SP ACP countries. The EU, as a community of developed countries of which some are former colonizers of the ACP countries, is morally obliged to help these countries to overcome problems caused by the preference erosion.

The EU acknowledges that, being signatory of the Cotonou Agreement, it is bound to be helping ACP countries to reduce poverty and to keep on the path of sustainable development. As the changes of the EU sugar regime could hamper these goals, the EU is ready to offer the ACP countries financial help. By Regulation no. 266/2006 the EU decided that ACP countries can request financial assistance from it based on their multiannual adaptation strategies. If they do not have such strategy, they can only be eligible for help in 2006 to develop it. The adaptation strategy should either concentrate on improving efficiency of the sugar sector where the long-term viability of this sector is possible or on diversification of the economy where the sugar sector can never become efficient enough.

By this Regulation it was also decided that for the second half of the year 2006 an amount of 39 million EUR should be offered as help to ACP countries. According to EDF (2006) the allocation of this aid among ACP countries was as shown in Table 4.14. The ACP countries were reluctant to start any adjustment to the new situation until the Financial Perspective for 2007 – 2013 was agreed upon, because before they had not known what volume of resources provided by the EU they could rely on for adjustment. In 2006 it was decided that in the period between 2007 and 2013 the SP ACP countries would be granted 1.244 billion EUR under the Development Cooperation Instrument.

Table 4.14. *Allocation of financial aid in 2006 among ACP countries (in thousand EUR).*

COUNTRY	TITLE OF THE PROGRAMME / PROJECT	AMOUNT
Côte d'Ivoire, Kenya, Trinidad & Tobago, Zimbabwe	Financial and Technical Assistance for Sugar Protocol Countries	1,500
Sugar Protocol Countries	BA Credits for Sugar Protocol countries	800
Swaziland	Establishment of a Unit to coordinate the implementation of Swaziland's National Adaptation Strategy to the EU sugar reform	4,703
Mauritius	Accompanying measures 2006 for Sugar Protocol countries	6,543
Madagascar	Accompanying measures 2006 for Sugar Protocol countries	567
Fiji	2006 Sugar Sector Support Programme	4,038
Mozambique	Support to the Mozambican Sugar Sector Adaptation Plan	562
Zambia	Accompanying measures 2006 for Sugar Protocol countries	526
Belize	EC Support to the Belize Country Adaptation Strategy for Sugar - 2006 allocation (Phase 1)	3,038
Jamaica	EC support to the Jamaica Country Strategy for the Adaptation of the Sugar Industry - Phase I	5,218
Malawi	Accompanying measures 2006 for Sugar Protocol countries	667
Barbados	Institutional Strengthening and Social Development programme for Barbados 2006 assistance financed from accompanying measures for Sugar Protocol countries	2,332
Guyana	Accompanying measures 2006 for Sugar Protocol countries	5,663
Tanzania	Accompanying measures 2006 for Sugar Protocol countries	562
St Kitts & Nevis	Accompanying measures 2006 for Sugar Protocol countries	2,845

Source: EDF (2006)

Table 4.15 shows what the allocation of this amount in those seven years shall be. In 2007, 100% of the allocated sum was used up and the same is expected for 2008.

Table 4.15. *EU's aid to ACP Sugar Protocol countries in 2007- 2013 (in million EUR).*

Year	2007	2008	2009	2010	2011	2012	2013
Amount	165	152.5	163.6	189.2	192.9	182.6	185.6

Source: European Commission

However, the ACP countries do not consider such help being sufficient. When taking into account that their loss in foreign exchange earnings is expected by LMC & Oxford (2003) to be more than 500 million EUR annually and that the loss to the ACP sugar industries is estimated to amount nearly the same height, it is clear that the aid that the EU has offered might not be sufficient to help the ACP countries to adjust to the new EU sugar regime. LMC & Oxford (2003) reminds that ACP countries are convinced that they should be treated by the EU in the same way as European farmers, i.e. to be compensated for their losses. This could, however, have two negative effects: it could cause that restructuring would be delayed so that the compensation is the highest possible and it could also happen that middle-income countries with very high quotas (such as

Mauritius) would receive in compensation much more than very poor countries with lower quotas, even if they are much better able to find their own resources for adjustment to the EU sugar regime change. These might also be reasons why the EU did not choose to directly compensate the ACP countries. Nevertheless, it has already happened in 2006 that a middle-income country received a very high financial aid: from Table 4.19 it is clear that Mauritius received one sixth of the 39 million EUR aid to all ACP countries.

When considering where and how to use the financial help, the EU should always aim to concentrate on the long-term sustainable development of the countries in question. Poverty mitigation is very important in the short run, as in the countries where sugar production will be reduced or stopped many jobs will be lost, causing that the extent of social services provided by sugar estates will decrease or completely disappear. Also as governments' revenues from sugar will decrease, social services provided by the state might also worsen. The EU should support the ACP countries to orientate more on regional markets for their sugar exports. In countries where this is made impossible by insufficient refining capacities or poor infrastructure, aid should be also directed to these areas. In addition to this, value-added activities of the ACP countries should be encouraged. However, the EU must reflect this in its external trade policy and must not make import of value-added goods from the ACP countries more difficult.

In some countries sugar production is viable in the future but the reform of the EU sugar regime has caused that it is more difficult to find funding for investment that is necessary to be realized. The EU would facilitate this by encouraging the European Investment Bank to provide these countries with low-interest loans for financing restructuring of their sugar industries. Where diversification or exit of sugar industries are inevitable, the EU should support diversification and investments to other crops and sectors, and it should especially back all policy reforms that improve the possibilities of diversification and increase the mobility of labour in the ACP countries.

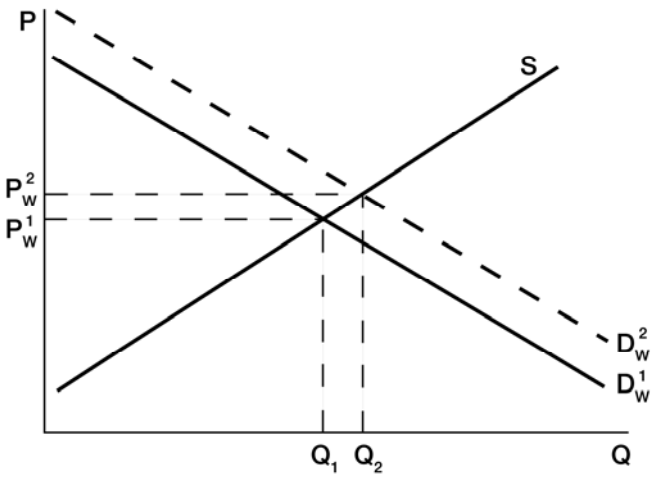
However, no accompanying measures of the significant price cut in the EU are planned for the LDCs. It is true that many of them will be able to offset the lower price by a higher quantity of sugar exported to the EU thanks to the EBA initiative, but those that have already invested in the sugar sector but will not be able to continue producing sugar after the reform is completed, might need some financial assistance from the EU, as their economies are extremely vulnerable.

In any case, the EU should try to prevent the destabilisation of the countries adversely affected by the preference erosion because otherwise the possibility of destabilisation of whole regions would become more realistic.

4.2.4 Impact of the 2006 Reform and the Potential Full Liberalisation of the EU Sugar Regime on Countries Operating Mostly on the World Market

The 2006 reform of the EU sugar market will basically lead to a better allocation of resources. As the EU protection decreases, its production and exports also lower. Both the world market price and the demand for sugar from world market producers, which are much more efficient than the EU's producers, will rise. This will increase the output of world market producers, which is illustrated by Figure 4.6: as the curve of demand for sugar from world producers increases, moving to the right, both the output (Q) and price (P) increase, moving from Q_1 to Q_2 and from P_W^1 to P_W^2.

Figure 4.6. *Increase of output of world market producers due to the decrease of EU's protection of the sugar market.*

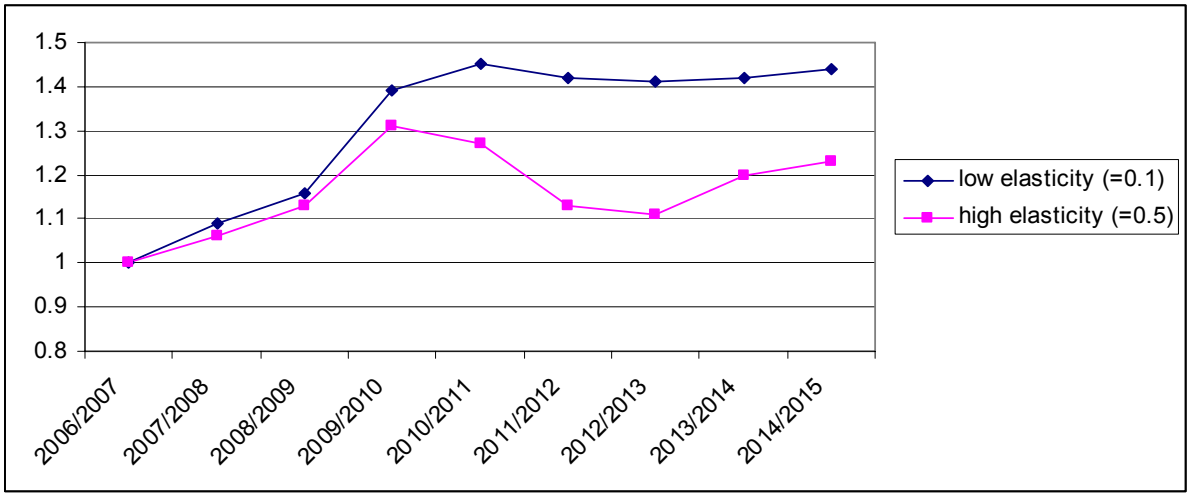


Author's illustration.

Producers operating on the world sugar market are especially expecting that this market will, thanks to the 2006 reform, stabilize and prices will increase, as well as the demand for their own sugar.

Subsection 4.1.3 has already described how the EU's sugar policies were destabilizing and depressing world prices. The Economic Research Service (2006a) estimated what the development of the world market price of sugar between 2006/2007 and 2014/2015 could be. Its result is shown by Figure 4.7.

Figure 4.7. *Effect of the EU 2006 reform on the world market price under both high and low world sugar supply elasticity as proportion of the base price (in 2006/20007 marketing year)*



Source: Economic Research Service (2006a), adapted

Given that the supply responses of the world market producers are predictable with difficulty only, the model simulates two options – one with low and one with high elasticity of the world sugar supply. In both cases the rise of the price is not very quick because sugar cane growers cannot react immediately. Assuming low elasticity, the world market price could rise by more than 40%. However, the high elasticity of world sugar supply seems to be more realistic, given that Brazil, the biggest producer and exporter of sugar, uses a one half of its sugarcane for the use of bioethanol and it can, depending on the prices, decrease its bioethanol production and increase that of sugar.

An increase of the world market price by 40% is expected by Sheales et al. (1999) in the case of sugar policies reforms of all the three most protectionist countries (the EU, the USA and Japan), while by other analyses, as already mentioned in Subsection 4.2.2, in the case of full liberalisation of the EU sugar regime. These analyses would rather support the assumption on low elasticity of world market supply when the effect of the 2006 reform on the world price is estimated.

Knapp (2004) notes that if the EU decreased its exports of white sugar, the world price would rise and the premium between the raw and white sugar would increase, too. This would make refining of sugar more attractive for many countries and, for example in the Middle East, refining capacities could expand.

CHAPTER SUMMARY

The European sugar regime, in operation for 40 years already, has had wide consequences for all stakeholders, who will also be affected by the changes that should take place in the nearest future. Until 2006, when the latest reform was initialized, the economies of the countries involved had been adjusted to this system.

In the EU the resources were inefficiently allocated, as it was producing sugar although it was a high-cost producer, while on the world market many low-cost producers were ready to start exporting sugar to the EU. Sugar was sometimes more than three times more expensive than on the world market and, furthermore, competition in the sugar sector was questionable. Another burden to European consumers and taxpayers were export subsidies: although the EU was importing a high quantity of sugar from the LDCs and ACP countries, its production quotas were set so high that a great surplus of sugar was created which had to be exported. The use of subsidies was inevitable because otherwise European sugar would be too expensive to be sold on the world market.

Concerning the other countries, they could be distinguished in the following way: those that have preferential arrangements with the EU, such as the ACP countries, and those that operate mostly on the world market. Many ACP countries have been producing sugar for centuries, which had often begun under the rule of their European colonizers. The latter were importing sugar produced in their colonies, which caused that some of these countries have become dependent on sugar production and exports to Europe. The diversification of these economies was usually insufficient and, furthermore, many of these countries were high-cost or medium-cost producers, unable to compete on the world market. Producers operating mainly on the world market were mostly affected by the EU's dumping of sugar and also by the fact that they were producing less sugar than they would if inefficient European and ACP producers stopped their production.

The 2006 reform of the EU sugar regime should decrease the guaranteed price by 36% by the marketing year 2009/2010, which is expected to be followed by renounced production quotas. Given that the European market should thus become less attractive for all producers, the sugar supply might fall to the level of the demand and thus the EU would not need to dump its sugar on the world market, which would especially be appreciated by the world market producers. Also the resources in the EU should be better allocated, as the least efficient producers give up sugar production, and the consumers should pay less for sugar.

However, many ACP countries and some LDCs will be adversely affected by the reform. This is caused by the fact that their production costs are so high that the new EU price of sugar would not be high enough to cover them. Not all these countries will be able to restructure their industries to sufficiently lower their costs of production and might have to cease production. This will have the worst impact on those countries whose economies are not diversified enough and are dependent on exports of sugar to the EU. On the other hand, the EBA initiative, under which the imports of sugar from LDCs should be unlimited from marketing year 2009/2010, should help those producers from LDCs that are efficient enough to expand their production and to export their sugar into the EU for more remunerative prices than they would get on the world market. The EU recognizes that many ACP countries will have problems to adjust to the newest reform and is ready to offer them assistance. However, it is questionable whether resources released for them are sufficient and always rightly directed.

Total liberalisation of the EU sugar regime would benefit especially the EU itself and the world market producers. However, due to the significant decrease of the price in the EU market, as it would level off with the world market price, the ACP countries would be affected even more deeply and more of them would have to cease sugar production.

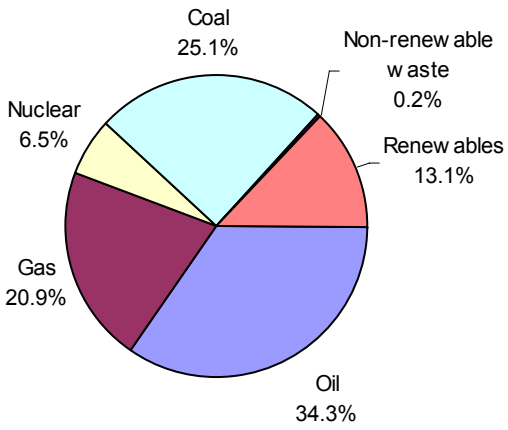
5 SUGAR AND BIOFUELS

The greatest part of total word sugarcane production is processed into sugar. However, it is also used for production of ethanol. This applies especially to Brazil, where one half of harvested sugarcane is used for the production of ethanol. Brazil, which is the greatest sugarcane grower and the leading sugar producer and exporter in the world, is also the greatest producer of ethanol from sugarcane. Sugar and ethanol markets are therefore interconnected. This chapter will analyze the use of biofuels in today's world and then the advantages and disadvantages of biofuels made from crops will be discussed.

5.1 Biofuels in Today's World

Biofuels are a renewable source of energy which is made from organic material. Renewable resources are used for a relatively small part of world energy supply, as is shown in Figure 5.1. From renewable resources mostly combustible renewables and renewable waste (around 80%) and hydro power (around 15%) are used.

Figure 5.1. *Resources shares in global energy supply*



Source: IEA (2006)[42]

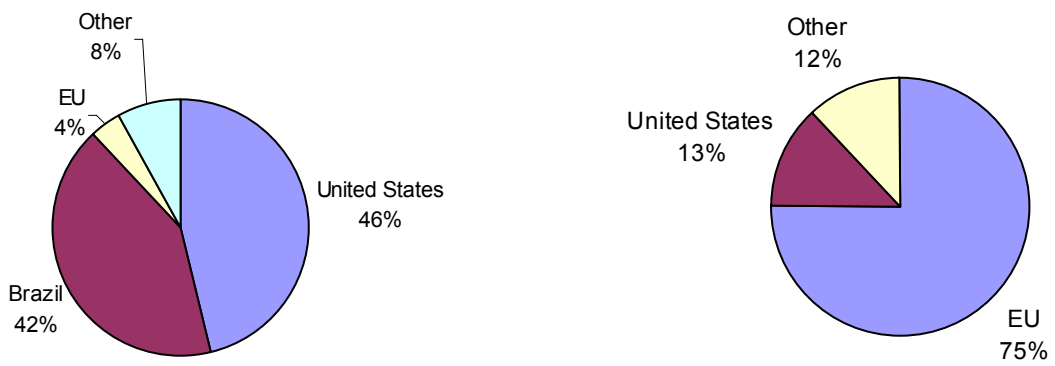
Currently only biofuels of the "first generation", such as ethanol, biodiesel or wood, are produced on a large scale. "Second generation" biofuels still need research and a lot of investment to be usable in such extent. These shall, however, be more beneficial than the previous, because they should be more efficient, they should be more favourable to the environment and climate and are not made from crops that are also used to feed people. On the contrary, they are made of wood, grass or vegetal waste.

[42] As appeared in Rajagopal & Zilberman (2007)

Biodiesel can be made from oilseed crops, such as soybean, rapeseed or oil palm. The extracted oil is combined with alcohol and the resulting mixture can be substituted for diesel. Ethanol can be made from crops such as sugarcane and the by-products of sugar production, wheat, maize or sugar beet. It is a high octane oxygenated hydrocarbon produced from the fermentation of sugar or converted starch. Its chemical formula is C_2H_5OH and it is known as alcohol. Figure 5.2 shows what countries ethanol and biodiesel are mostly produced in. While the United States and Brazil were leading in ethanol production, the EU was the largest producer of biodiesel in 2006.

Figure 5.2. *World distribution of bioethanol and biodiesel production in 2006*

BIOETHANOL *BIODIESEL*



Source: World Bank, 2008.

While in Brazil ethanol is made from sugarcane, in the United States it is mostly made from maize and in the EU from wheat and sugar beet. In 2006, 40 billion litres of bioethanol and 6.5 billion litres of biodiesel were produced in the world.

Ethanol and biodiesel are mostly used in transportation which accounts for nearly one third of global consumption of energy. These liquid biofuels seem to be the best alternative to petroleum that provides the transport industry with 99% of energy it needs (Rajagopal & Zilberman, 2007). Furthermore, the US Energy Information Administration expects that transportation will be expanding so much in the next 25 years that 50% of the rise in oil consumption will be caused by this growth.

According to the European Commission (2007d), in Brazil bioethanol was making more than 10% of fuel used in transportation, while in the EU the share of biofuels on all fuels used in this sector reached only 1%, of which 80% was biodiesel and 20% bioethanol. The EU has set a target of reaching 5.75% of biofuels use in transportation by 2010. Furthermore, the European Commission proposed a goal of reaching 10% of biofuels

use in vehicles by 2020. However, this goal is probably not achievable through the use of domestically produced ethanol, as energy crops would have to be cultivated on 43% of land which is now sown with cereals, oil plants and sugar beet (Lampe, 2007). If the EU decides to attain the target by the use of imported biofuels, the ethanol made from sugarcane from Brazil or other countries that could emerge as its producers, seems to be the best alternative, provided that it is possible to ensure that no environmentally valuable regions will be harmed because of increased demand for ethanol from the EU.

Liquid biofuels, such as ethanol and biodiesel, could not be produced without governmental support.[43] There are many policy options for the promotion of biofuels: obligatory blending of petrol with ethanol or diesel oil with biodiesel, lower excise tax for biofuels; also agricultural policies such as subsidisation of growing of crops for biofuels, or so called carbon policies whereby sources of higher carbon emissions, such as fossil fuels, are taxed more than those that are less harmful for the climate, like biofuels.

In Brazil the policies promoting bio-substitutes for petroleum on a large scale occurred in the 1970's. After the first oil crisis in 1973, the government introduced a programme called "Proalcool" whose aim was to support the production of ethanol from sugarcane. This was done through the investment into research and development of new fuels, lower excise taxes and subsidisation of the sale of ethanol and vehicles being able to run on it. In these days, the government only sets the blending ratio of ethanol and petrol, which is currently around 20-25%, and also it sometimes intervenes in the market by buying or selling ethanol as it holds strategic and regulatory stocks. In December 2005, more than 70% of personal cars sold in Brazil were able to operate using ethanol, petrol or their mixture.

In some Member States of the EU, such as Germany, Spain, France or Italy, biofuels have been given tax exemptions. Other Member States, such as Finland or Sweden, have introduced carbon-based taxes, which may also make biofuels cheaper than certain other fuels, such as coal. All the EU Member States should have set targets for the use of renewable resources. However, their fulfilment is not mandatory and they will probably not be achieved. Until these days, the EU has not decided that they should become binding. The EU also supports growing of fuel crops by allowing their cultivation on set-aside land and by granting a direct subsidy of 45 EUR/hectare when these are grown

[43] In Brazil the ethanol market is relatively free, but decades of regulation and support have preceded this situation. In an overwhelming majority of other countries, the production of biofuels has to be subsidised. Nevertheless, if the price of petroleum increases enough, some biofuels might be commercially viable even without governmental support.

instead of other crops. The EU has not yet allowed imports of cheap ethanol from Brazil and domestically produced biofuels have to be used. However, if this happens one day, the price of sugar on the world market could rise significantly, as Brazil has been the leading exporter and could affect the sugar market by diverting sugarcane from the production of sugar to the production of ethanol.

5.2 Are Biofuels Truly Advantageous?

Biofuels like bioethanol or biodiesel are considered to have several advantages. First, they are renewable, i.e. they can be grown all over again. This is a big advantage in comparison with petroleum whose reserves are not infinite. Second, as liquid biofuels are made of crops grown in all types of climate, they can be produced in the majority of countries. Although in many countries the use of locally produced biofuels might not cover a substantial part of the energy consumption, it may at least improve the security of the energy supplies, as a significant part of petroleum is supplied from politically unstable countries. However, Rajagopal & Zilberman (2007), having reviewed many studies on this subject, remind that it is necessary to be aware of the fact that for the production of bioethanol a lot of energy, mostly coming from petroleum and other fossil fuels, is needed: fertiliser and pesticides have to be manufactured, also tillage, irrigation and harvest have to be performed, and finally the crops have to be transported and processed into biofuels. On the other hand, it is necessary to take into account the fact that the extraction of petroleum and its processing are also energy demanding, for which mostly fossil fuels are used.

Third, the use of biofuels made of crops increases employment, usually in rural areas, as this process is quite labour intensive. Nevertheless, this could be claimed about any subsidised activity. Fourth, large-scale use of biofuels made of crops is expected to raise prices of agricultural products, which would also increase farmers' incomes. This is true, but the problem is that as energy crops are not only cultivated on marginal or set-aside lands, the use of crops as food competes with their use as feedstock for biofuels. As noted by the World Bank (2008), 'the grain required to fill the tank of a sports utility vehicle with ethanol (240 kilograms of maize for 100 litres of ethanol) could feed one person for a year.' The increasing price of commodities such as wheat or soya has already had an adverse impact on very poor people who are not self-sufficient farmers and have to be buying food. Often the budget of those people is mostly dedicated to the purchase of food. The price increases of food have, actually, been extremely high: prices of wheat, soya, rice and maize have risen by 130%, 87%, 74% and 31%, respectively, between

March 2007 and March 2008, based on figures presented by Bloomberg and the FAO.[44] Obviously, the use of biofuels is not the only reason of this surge in prices, which is confirmed by the price rise of rice, as no biofuels are made from this crop, and, on the contrary, the fact that the prices of sugar have not encountered a surge, although more than 40% of ethanol is made from sugarcane. This is supported by Lampe (2007) who presents results of a combination of models for agricultural markets developed by the OECD and the FAO. Its prediction is that if the use of ethanol made from sugarcane in Brazil increases by 35% between 2004 and 2014, the price of white sugar will rise by 62% till 2014. However, according to this model, if the use of wheat and maize for ethanol increases by 10% in average in the EU, the US and Canada from 2004 to 2014, their price is only expected to increase by 5% and 8%, respectively, by 2014. And this is a very small increase in comparison with price surges that these commodities have encountered in the first months 2008. Helbling et al. (2008) indicate that the prices of food commodities are pushed upwards besides biofuels by the rising demand of emerging economies, slow supply responses, linkages across the markets for various commodities and by low interest rates and effective dollar depreciation to which could be connected an expansion of commodity financial markets.

Fifth, some studies, such as Jacobson (2006), warn that the use of biofuels e. g. in blends with petroleum might be at least as dangerous for people's health as the use of fossil fuels. On the other hand, many other studies do not even mention such risks. This subject should be investigated more deeply, as is also concluded by Rajagopal & Zilberman (2007) after their review of many available studies.

Finally, biofuels are believed to be releasing less CO_2 to the atmosphere when burnt than fuels derived from petroleum. Furthermore, the crops from which biofuels are made also absorb this gas when they are grown. This might be true, but during the whole process of the production of biofuels from crops, as fossil energy has to be used, additional CO_2 is released to the atmosphere and it is questionable whether, when all this is taken into account, biofuels are really so beneficial for the climate. This is supported by the studies reviewed by Rajagopal & Zilberman (2007) that do not always come to the same conclusions, which might be also caused by the fact that in their life-cycle analyses of different crops they either do or do not take into account energy needed to irrigate the fields or to produce inputs such as fertilisers, or even energy needed for renewal of capital, such as buildings or other equipment. Nevertheless, Rajagopal & Zilberman (2007)

[44] Figures presented by BBC News, see http://news.bbc.co.uk/2/hi/in_depth/7284196.stm

conclude that based on the studies reviewed, ethanol made from sugarcane has the highest CO_2 and energy benefits, while those of maize are only moderate. Ethanol made from sugarcane is also the cheapest – that made from maize in the US is more expensive and that made from wheat or sugar beet in the EU is even more than twice as expensive.

Biofuels are also questionable because when their benefits are analysed, usually the change in land utilisation is not considered. However, in certain countries, such as Brazil or Indonesia, rain forests are cut down as more land is needed by farmers. In such case the use of ethanol made from a crop because of which a forest was cut down would probably have no CO_2 benefit: more CO_2 might be released than absorbed. The large-scale cultivation of energy crops may also lead to a biodiversity loss and degradation of soil because of erosion and pesticides and fertilizers use. Water depletion might occur as well, because countries where energy crops are mostly rain fed, such as Brazil, are only an exception and irrigation is usually a must (Moreira, 2007). The extension of cultivated land might also cause that in the developing countries people using wood from lands in the neighbourhood that are not under cultivation will lose the fuel that they use for cooking and heating. As Bailey (2007) alerts, poor people might also be displaced from their homes and lands because of energy crops cultivation, sometimes even violently, such as in Colombia.

As developed countries such as the EU might not be able to produce enough biofuels to meet their targets concerning the use of renewable sources of energy, the production of biofuels might be a very good opportunity for sugar producing LDCs and ACP countries, especially in times of depressed sugar prices: the production of ethanol from sugarcane would provide them with a possibility to diversify their industry and to be less vulnerable.

CHAPTER SUMMARY

Many developed countries have been spending lots of money on subsidizing the use of first generation biofuels, although many aspects of their use have not been studied deeply enough, including their impact on the environment or people's health. Sugarcane, however, seems to have the best prospects as an energy crop, at least until second generation biofuels become commercially viable. The production of ethanol from this crop is very cheap, especially in regions with such suitable conditions as Brazil has. Also many other LDCs or ACP sugar producing countries could emerge as efficient producers of ethanol from

sugarcane, which might be beneficial for them due to the EU sugar regime reform and the rising price of petroleum. Furthermore, sugar is not a basic commodity like wheat, maize or rice and therefore if its price rises because of the competition with bioethanol, it is not likely to cause famines. Nevertheless, the devastation of rain or other forests because of sugarcane cultivation, even indirectly caused, ought to be prevented.

6 CONCLUSION

The sugar policies of the EU have been in the centre of attention in the last several years because of the 2006 reform and the subsequent changes of the EU sugar regime that will have a strong impact on many other countries. The aim of this thesis was to analyse what has lead to the current state of affairs, what impacts it had, and also what the consequences of the recent changes would be.

Sugar is a commodity that is mainly made from sugarcane and sugar beet. Its production from sugarcane has spread all over the world since the 15th century, mostly thanks to certain European colonial powers. However, this was accompanied by two negative facts: slavery in the process of sugarcane growing and processing and the fact that many colonies have become dependent on sugar exports to Europe. In the 19th century, Europe started to produce its own sugar, from sugar beet. The process was more expensive than production of sugar from sugarcane, which has not changed, but Europe was no more fully dependent on sugar imports from abroad.

The prices of sugar were very volatile in the 20th century. The notion that sugar is a sensitive commodity is supported by the fact that since the beginning of that century several international sugar agreements have been concluded, although none of them has come up to expectations. Furthermore, many preferential arrangements emerged in the 20th century.

The creation of the Common Agricultural Policy (CAP) of the EU in the 1950's was inevitable, as was explained in Chapter 3. The objectives of the CAP were analysed and the conclusion is that some of them, such as reasonable prices for consumers or increasing efficiency, have not really been fulfilled. The Common Market Organisation (CMO) for sugar has been in operation since 1968. Its main instruments have especially been border protection and production quotas with guaranteed prices. Several preferential arrangements like that with the ACP countries or the LDCs have been included in the regime and it is especially the Sugar Protocol granting the ACP countries with duty free quotas on sugar imports to the EU that causes most emotions in connection with the 2006 reform and subsequent changes of the EU sugar regime. The most important change which the 2006 reform brings is that the guaranteed price shall decrease by more than one third in only four years. This is expected to be followed by renouncing of production quotas because many producers might have problems to cover their costs.

For the analysis of the consequences of the EU sugar regime before and after the reform, all stakeholders could be divided into three groups: the EU, world market producers and countries having preferential arrangements with the EU for their sugar exports. The 2006 reform should be beneficial for the EU because the allocation of resources would become less inefficient. The EU is a high-cost producer and the price of sugar in the internal market was sometimes even several times higher than that in the world market. As a consequence of the reform, both the production of sugar and its retail price should decrease. Total liberalisation of the EU sugar regime would be, of course, even better in this regard.

The world market producers are expected to profit from the reform, too. As the EU is expected to stop exporting its subsidised sugar on the world market, producers such as Brazil, Australia and Thailand will not need to compete with it anymore. Also the volatility of prices might decrease, because the EU has been able to sell sugar on the world market for extremely low prices by only increasing its export subsidies. Total liberalisation of the EU sugar regime would be even more beneficial for them, as they might be able to export their sugar also to the EU.

The situation is especially complicated for the ACP countries. Many of them have become dependent on sugar exports to the EU, to which the former European colonial powers have also contributed, and will not be able to adjust to the new EU sugar regime quickly enough. According to the analyses review, they will encounter great losses and will face sometimes very serious socio-economic problems. Some of them will have to completely cease production and this would apply to even more of them if the EU sugar regime was fully liberalised. The EU is ready to provide them with assistance and has already granted them around 200 million EUR in 2006 and 2007 (together), but most analyses concluded that such level of financial assistance is insufficient and that these countries would need much more to overcome problems caused to them by the reform. Thus, a risk of economic and political destabilisation is looming large over those countries endangered by the results of the partial or even total deregulation of the EU sugar market. It is therefore a challenge for the EU to find another more efficient method of fulfilling the moral obligations that some of its members have towards their former colonies.

The use of sugarcane in the production of liquid biofuels, which are mostly used in transportation, also has to be taken into account because this makes the market in biofuels linked to the sugar market. Sugarcane seems to be the crop which is best suitable for bioethanol production, at least within the group of first generation biofuels. Second

generation biofuels, which are still in the process of development, should be especially advantageous because that they are supposed to be more efficient and also because of the fact that they are not made of crops that are also used to feed people. If the EU really decides to fulfil the proposed objective of reaching 10% of biofuels use in vehicles by 2020, it might have to import bioethanol produced from sugarcane in high quantities, which would even more interlink the sugar and biofuels markets, and also the internal EU market with the world market.

7 REFERENCES

Primary Resources

1. *Council decision no. 627/2007 denouncing on behalf of the Community Protocol 3 on ACP sugar appearing in the ACP-EEC Convention of Lomé and the corresponding declarations annexed to that Convention, contained in Protocol 3 attached to Annex V to the ACP-EC Partnership Agreement,* 2007. Official Journal of the European Union, L255. www.eur-lex.europa.eu
2. *Decision of the European Parliament and of the Council no. 29/2008 amending the Interinstitutional Agreement of 17 May 2006 on budgetary discipline and sound*
3. *financial management as regards the multiannual financial framework,* 2008. Official Journal of the European Union, L6. www.eur-lex.europa.eu
4. *Economic Partnership Agreement between the Cariforum States, on the one part, and the European Community and its member states, on the other part.* http://trade.ec.europa.eu, accessed on 13th April 2008.
5. *EEC regulation no. 3330/74 on the common organisation of the markets in the sugar sector,* 1974. Official Journal of the European Union, L359. www.eur-lex.europa.eu
6. *EEC regulation no. 1785/81 on the common organisation of the markets in the sugar sector,* 1981.Official Journal of the European Union, L177. www.eur-lex.europa.eu
7. *EC regulation no. 1916/95 laying down detailed rules of application for the importation under preferential agreements on tariff quotas of raw cane sugar for refining*, 1995. Official Journal of the European Union, L184. www.eur-lex.europa.eu
8. *EC regulation no. 2048/1999 on the common organisation of the markets in the sugar sector*, 1999. Official Journal of the European Union, L252. www.eur-lex.europa.eu
9. *EC regulation no. 1260/2001 on the common organisation of the markets in the sugar sector,* 2001. Official Journal of the European Union, L178. www.eur-lex.europa.eu
10. *EC regulation no. 980/2005 applying a scheme of generalised tariff preferences*, 2005. Official Journal of the European Union, L169.
11. *EC regulation no. 266/2006 establishing accompanying measures for Sugar Protocol countries affected by the reform of the EU sugar regime.* Official Journal of the European Union, L50. www.eur-lex.europa.eu
12. *EC regulation no. 318/2006 on the common organisation of the markets in the sugar sector,* 2006. Official Journal of the European Union, L58. www.eur-lex.europa.eu
13. *EC regulation no. 320/2006 establishing a temporary scheme for the restructuring of the sugar industry in the Community and amending Regulation (EC) No 1290/2005 on the financing of the common agricultural policy*, 2006. Official Journal of the European Union, L58. www.eur-lex.europa.eu
14. *EC regulation no. 1905/2006 establishing a financial instrument for development cooperation.* Official Journal of the European Union, L 378. www.eur-lex.europa.eu
15. *EC regulation no. 1260/2007 amending Regulation (EC) No 318/2006 on the common market organisation of the markets in the sugar sector,* 2007. Official Journal of the European Union, L283. www.eur-lex.europa.eu

16. *EC regulation no. 1261/2007 amending Regulation (EC) No 320/2006 establishing a temporary scheme for the restructuring of the sugar industry in the Community,* 2007. Official Journal of the European Union, L283. www.eur-lex.europa.eu

17. *Treaty establishing the European Economic Community,* 1957. Downloaded from http://www2.eudor.net/aecahnae/download/, accessed on 12th March 2008 (web site provided by the Office for Official Publications of the European Communities)

18. *Treaty establishing the European Economic Community*, consolidated version, 2006. Official Journal of the European Union, C321. www.eur-lex.europa.eu

Secondary Resources

1. Adenäuer, Marcel, 2005. *Reform of the CMO sugar – Impacts on European Agriculture.* Working Paper, the University of Bonn. www.gtap.agecon.purdue.edu/resources, retrieved on 10th April 2008

2. Anderson, Kym, 2001. Bringing Discipline to Agricultural Policy via the WTO. *In*: Hoekman, B., Martin, W. *Developing Countries and the WTO: A Pro-active Agenda*. Blackwell Publishers Ltd, UK, pp. 25-58.

3. Anderson, Kym, 2005. Agriculture. *In*: Macrory, P. F. J., Appleton, A. E., Plummer, M. G. *The World Trade Organization: Legal, Economic and Political Analysis, Volume II.* Springer, New York, pp. 110-135.

4. Anderson, K., de Gorter, H., Martin, W. J., 2006. Market Access Barriers in Agriculture and Options for Reform. *In*: Newfarmer, Richard. *Trade, Doha and Development: A Window into the Issues.* The World Bank, Washington, D.C., pp. 85-96.

5. Bailey, Robert, 2007. *Bio-fuelling Poverty: Why the EU renewable-fuel target may be disastrous for poor people*. Oxfam International. www.oxfam.org, retrieved on 3rd January 2008.

6. Baldwin R., Wyplosz C., 2004. *The Economics of European Integration*. McGraw-Hill Education (UK) Limited, New York.

7. Berkum, S., Roza, P., Tongeren, F., 2005. *Impacts of the EU Sugar Policy Reform on Developing Countries.* Report 6.05.09 of the Agricultural Economics Research Institute, The Hague. www.lei.dlo.nl, retrieved on 15th April 2008.

8. Bernd, Lucke, 1991. *Price stabilization on world agricultural markets: an application to the world market for sugar.* Freie Universität Berlin, Berlin.

9. CEDUS (French Centre for Studies and Documentation on Sugar), 2007. *Statistics Memo – Sugar, co-products, biofuels*. www.extrasucre.org, retrieved on 15th December 2007.

10. Cahill, C. and Legg, W., 1989. *Estimation of Agricultural Assistance Using Producer and Consumer Subsidy Equivalents (PSEs/CSEs): Theory and Practice.* OECD Economic Studies No. 13. www.oecd.org, retrieved on 30th March 2008.

11. Centre for International Economics, 2002. *Targets for OECD Sugar Market Liberalisation.* www.globalsugaralliance.org, retrieved on 12th February 2008.

12. Chang, Ha-Joon, 2005. *Why Developing Countries Need Tariffs? How WTO NAMA Negotiations Could Deny Developing Countries' Right to a Future.* South Centre, Switzerland.

13. Coffey, Peter, 1996. *The Future of Europe – Revisited.* Edward Elgar, Cheltenham.

14. Collins, A., Stuart, L., Bailey, M., 2005. *Making trade work for development in 2005.* Oxfam International. www.oxfam.org, retrieved on 14th December 2007.

15. Court of Auditors, 2001. *Special Report no. 20/2000 concerning the management of the common organisation of the market for sugar, together with the Commission's replies.* Official Journal of the European Communities. www.eca.europa.eu, retrieved on 18th March 2008.

16. Csaki, C. and Nash, J., 1999. *Regional and International Trade Policy: Lessons for the EU Accession in the Rural sector.* The World Bank, Washington, D.C.

17. DEFRA, 2006. *Full and Final Regulatory Impact Assessment of options for Reform of the EU Sugar Regime.* www.defra.gov.uk/farm/crops/sugar, retrieved on 10th March 2008.

18. Dolan, E. G., 2006. *Economic Policy in the European Union.* Power point presentation prepared by Prof. Dolan in Seattle, USA, used at the seminar of International Trade at IES.

19. Early, T. and Westfall, D.W., 1996. *International Dynamics of National Sugar Policies*. Food and Agriculture Organization of the United Nations, Rome

20. Economic Research Service, USDA, 2006a. *Sugar and Sweeteners Outlook.* SSS-245, 31 January 2006. www.ers.usda.gov, retrieved on 5th February 2008.

21. Economic Research Service, USDA, 2006b. *Sugar and Sweeteners Outlook.* SSS-246, 30 May 2006. www.ers.usda.gov, retrieved on 5th February 2008.

22. Economic Research Service, USDA, 2007a. *Sugar and Sweeteners Outlook.* SSS-249, 4 June 2007. www.ers.usda.gov, retrieved on 5th February 2008.

23. Economic Research Service, USDA, 2008. *Sugar and Sweeteners Outlook.* SSS-251, 29 January 2008. www.ers.usda.gov, retrieved on 5th February 2008.

24. European Commission, 2003. *Reforming the European Union's Sugar Policy (Summary of Impact Assessment Work).* www.ec.europa.eu/agriculture/publi, retrieved on 20th January 2008.

25. European Commission, 2004a. *A Description of The Common Organisation of the Market in Sugar.* www.ec.europa.eu/agriculture/markets, retrieved on 20th January 2008.

26. European Commission, 2004b. *The Common Agricultural Policy Explained*. European Communities, Luxembourg.

27. European Commission, 2004c. *The EU Sugar Sector: Facts and Figures*. http://www.ec.europa.eu/agriculture/markets, retrieved on 20th January 2008.

28. European Commission, 2005. *Action Plan on accompanying measures for Sugar Protocol countries affected by the reform of the EU sugar regime.* http://europa.eu/press_room/presspacks_en.htm, retrieved on 20th January 2008.

29. European Commission, 2006a. *EU Budget 2006 in Figures.* European Communities, Luxembourg.

30. European Commission, 2006b. *The European Sugar Sector: A long-term competitive future.* www.ec.europa.eu/agriculture/capreform, retrieved on 7th February 2008.

31. European Commission, 2006c. *Brazil's Agriculture: a Survey.* Monitoring Agri-trade Policy, Newsletter no. 02-06. www.ec.europa.eu/agriculture, retrieved on 25th April 2008.

32. European Commission, 2007a. *EU Budget 2006 Financial Report.* European Communities, Luxembourg.

33. European Commission, 2007b. *EU Budget 2007 in Figures.* European Communities, Luxembourg.

34. European Commission, 2007c. *EuropeAid – Annual Report 2007.* European Communities, Luxembourg.

35. European Commission, 2007d. *Biofuels Progress Report – Report on the progress made in the use of biofuels and other renewable fuels in the Member States of the European Union.* www.ec.europa.eu/energy, retrieved on 20th April 2008.

36. European Commission, 2008. *EU Budget 2008 in Figures.* European Communities, Luxembourg.

37. EDF (European Development Fund), 2006. *Monthly Bulletin – Budget Lines.* www.ec.europa.eu/europeaid/where/acp, retrieved on 20th February 2008.

38. European Parliament, 2004. *Fact Sheets on the European Union*. European Communities, Belgium

39. Feenstra, Robert C., 2004. *Advanced International Trade: Theory and Evidence.* Princeton University Press, Oxford.

40. Finger, J. M., Schuknecht, L., 2001. Market Access Advances and Retreats: The Uruguay Round and Beyond. *In*: Hoekman, B., Martin, W. *Developing Countries and the WTO: A Pro-active Agenda*. Blackwell Publishers Ltd, UK, pp. 251-308.

41. Fowler, P., Fokker, R., 2004. *A Sweeter Future? The potential for EU sugar reform to contribute to poverty reduction in southern Africa.* Oxfam International. www.oxfam.org, retrieved on 14th December 2007.

42. Fowler, P., Harrison, A., 2005. *Critique of the EC's Action Plan for ACP countries affected by EU sugar reform.* Oxfam International. www.oxfam.org, retrieved on 14th December 2007.

43. Gillson, I., Hewitt, A., Page, S., 2005. *Forthcoming Changes in the EU banana/sugar markets: A menu of options for an effective EU transitional package.* Overseas Development Institute, London.

44. Godfrey, Claire, 2006. *Unequal Partners: How EU-ACP Economic Partnership Agreements (EPAs) could harm the development prospects of many of the world's poorest countries.* Oxfam International. www.oxfam.org, retrieved on 14th December 2007.

45. Gohin, A., Bureau, J.-C., 2006. *Modelling the EU Sugar Supply to Assess Sectoral Policy Reforms.* European Review of Agricultural Economics, Vol. 33 (2), pp. 223 – 247.

46. Gorter, Harry de, 2006. Export Subsidies: Agricultural Policy Reform and Developing Countries. *In*: Newfarmer, Richard. *Trade, Doha and Development: A Window into the Issues.* The World Bank, Washington, D.C., pp. 109-118.

47. Gudoshnikov, S., Jolly, L., Spence, D., 2004. *The World Sugar Market*. Woodhead Publishing Ltd., Cambridge

48. Hannah, A. C., Spence, D., 1996. *The International Sugar Trade*. Woodhead Publishing Ltd., Cambridge

49. Harrison, Michelle, 2001. *King Sugar.* Latin America Bureau (Research and Action) Ltd, London.

50. Helbling, T., Mercer-Blackman, V., Cheng, K., 2008. *Riding a Wage: Soaring commodity prices may have a lasting impact.* Finance and Development, vol. 45, no. 1., pp. 10-15.

51. Hertel, T. W., Martin, W, 2001. Liberalising Agriculture and Manufactures in a Millennium Round: Implications for Developing Countries. *In*: Hoekman, B., Martin, W., 2001. *Developing Countries and the WTO: A Pro-active Agenda*. Blackwell Publishers Ltd, UK, pp. 59-75.

52. House of Lords, 2005. *European Union – Eighteenth Report.* www.publications.parliament.uk, retrieved on 17th March 2008.

53. Jacobson, M. Z., 2006. *Effects of Ethanol (E85) Versus Gasoline Vehicles on Cancer and Mortality in the United States.* Environmental Science and Technology, Stanford University. www.stanford.edu, retrieved on 23rd April, 2008.

54. Jones, Emily, 2007. *Signing Away the Future: How trade and investment agreements between rich and poor countries undermine development.* Oxfam International. www.oxfam.org, retrieved on 18th January 2008.

55. Jones, E., Hormeku, T., 2007. *A Matter of Political Will: How the European Union can maintain market access for African, Caribbean and Pacific countries in the absence of Economic Partnership Agreements.* Oxfam International and TWN Africa. www.oxfam.org, retrieved on 18th January 2008.

56. Knapp, Robert, 2004. *Sugar and the European Union: Implication of WTO Findings, and Reform.* Foreign Agricultural Service, USDA. www.fas.usda.gov, retrieved on 20th December 2007.

57. Knudsen, O., Nash, J., 1993. Agricultural Price Stabilization and Risk Reduction in Developing Countries. *In*: Bautista, R. M., Valdés, A. *The Bias Against Agriculture: Trade and Macroeconomic Policies in Developing Countries.* Institute for Contemporary Studies, San Francisco.

58. Kojima, M., Johnson, T., 2006. *Potential for Biofuels for Transport in Developing Countries.* ESMAP Knowledge Exchange Series no. 4. www.esmap.org, retrieved on 26th March 2008.

59. Kraus, J., Dykova, E., 2008. *Otazníky k biopalivům.* Bulletin of Výzkumný ústav zemědělské ekonomiky no. 1/2008. www.vuze.cz, retrieved on 8th April 2008.

60. Lampe, M., 2007. *Economic and agricultural market impacts of growing biofuel production.* Agrarwirtschaft, 56, 2007, no. 5/6, pp. 232-237. Translation by J. Dvorakova, VUZE.

61. Landes, David S., 2004. *Bohatství a bída národů*. BB/art s.r.o., Prague

62. LMC International Ltd & Oxford Policy Management, 2003. *Addressing the Impact of Preference Erosion in Sugar on Developing Countries.* www.dfid.gov.uk, retrieved on 5th January 2008.

63. Malzbender, Daniel, 2003. *Reforming the EU sugar regime: will Southern Africa still feature?* Tralac working paper No 12/2003. www.tralac.org, retrieved on 2nd February 2008.

64. McMahon, J. A., 2005. The Agreement on Agriculture. *In*: Macrory, P. F. J., Appleton, A. E., Plummer, M. G. *The World Trade Organization: Legal, Economic and Political Analysis, Volume I.* Springer, New York, pp. 189-229.

65. Meier, G., Rauch, J., 2005. *Leading Issues in Economic Development.* Oxford University Press, New York.

66. Messerlin, P. A., 2001. *Measuring the Costs of Protection in Europe: European Commercial Policy in the 2000s.* Peterson Institute. www.iie.com, retrieved on 11th November, 2007.

67. Ministerstvo zemědělství, 2006. *Situační a výhledová zpráva: Cukr a cukrová řepa.* Ministerstvo zemědělství České republiky. www.mze.cz, retrieved on 17th December 2008.

68. Mitchell, Donald, 2006. Sugar Policies: Opportunity for Change. *In*: Newfarmer, Richard. *Trade, Doha and Development: A Window into the Issues.* The World Bank, Washington, D.C., pp. 129-138.

69. Moreira, J. R., 2007. *Water Use and Impacts Due Ethanol Production in Brazil.* International Conference on Linkages in Energy and Water Use in Agriculture in Developing Countries, organized by IWMI and FAO, ICRISAT, India, January 2007.

70. NEI, 2000. *Evaluation of the Common Organisation of the Markets in the Sugar Sector.* http://ec.europa.eu/agriculture/eval/, retrieved on 27th January 2008.

71. Oxfam, 2005. *An end to EU Sugar Dumping? Implications of the WTO panel ruling in the dispute against EU sugar policies brought by Brazil, Thailand, and Australia.* Oxfam Briefing Note. www.oxfam.org, retrieved on 14th December 2007.

72. Pelkmans, Jacques, 2001. *European Integration – Methods and Economic Analysis*. Pearson Education Limited, Harlows

73. Petit, Michel, 1999. The Evolution of the Common Agricultural Policy: Impact of WTO Commitments. *In*: Csaki, C., Nash, J. *Regional and International Trade Policy: Lessons for the EU Accession in the Rural sector – World Bank/FAO Workshop, June 20-23, 1998.* World Bank, Washington, D.C.

74. Rajagopal, D., Zilberman, D., 2007. *Review of Environmental, Economic and Policy Aspects of Biofuels.* The World Bank, Development Research Group. Policy Research Working Paper no. 4341. www.worldbank.org, retrieved on 24th April 2008.

75. Raworth, Kate, 2002. *The Great EU Sugar Scam: How Europe's Sugar Regime is Devastating Livelihoods in the Developing World.* Oxfam International. www.oxfam.org, retrieved on 14th December 2007.

76. Roberts, I., Troy, P., Andrews, N., 2001. The Dynamics of Multilateral Agricultural Policy Reform. *In*: Ingco, M., Winters, L. A. *Agricultural Trade Liberalization in a New Trade Round: Perspecties of Developing Countries and Transition Economies.* The World Bank, Washington, D.C., pp. 145-156.

77. Samuelson, P., Nordhaus, W., 1995. *Ekonomie*. Nakladatelství Svoboda, Praha.

78. Santana Baodo, Leonela, 2005. *Effects of the 'Everything But Arms' Initiative on the Sugar Industries of the Least Developed Countries.* UNCTAD Secretariat. www.unctad.org, retrieved on 27th December 2007.

79. Sheales, T., Gordon, S., Hafi, A., Toyne, C., 1999. *Sugar: International Policies Affecting Market Expansion*. ABARE Research Report 99.14. Commonwealth of Australia, Canberra. www.abare.gov.au, retrieved on 16th November 2007.

80. Schmitz, T. G., Seale, J. L., Buzzanell, P. J., 2002. *Brazil's Domination of the World Sugar Market.* Arizona State University. www.asu.edu, retrieved on 23rd April 2008.

81. South Centre, 2007. *The Reform of the EU Sugar Sector: Implications for ACP Countries and EPA Negotiations.* www.southcentre.org, retrieved on 5th February 2008.

82. Teplá, Marta, 2007. *Světová obchodní organizace a obnova jednání o liberalizaci světového obchodu se zemědělskými výrobky.* Mezinárodní Politika, 1/2007, p.16-19.

83. Topp, Vernon, 2003. *Are Trade Preferences Helpful in Advancing Economic Development?*Asia Pacific Press, Australia.

84. UNCTAD Secretariat, 2001. *World Commodity Survey, 2000-2001: Markets, Trends and the World Economic Environment.* United Nations, New York.

85. Unger, Katrin, 2005. *Are European Union's sugar subsidies unfair and create misery and poverty for millions in the developing countries?* Working paper used for Seminar of International Trade (EB039) at IES, FSV UK.

86. Watkins, Kevin, 2004. *Dumping on the World: How EU sugar policies hurt poor countries.* Oxfam International. www.oxfam.org, retrieved on 14th December 2007.

87. World Bank, 2008. *Biofuels: The Promise and the Risks.* The World Development Report. www.worldbank.org, retrieved on 20th April 2008.

Internet Resources

Bloomberg L.P.	www.bloomberg.com
European Navigator	www.ena.lu
Food and Agriculture Organization of the UN	www.fao.org
Le Centre d'Études et de Documentation du Sucre	www.lesucre.fr
Organisation for Economic Co-operation and Development	www.oecd.org
United Nations Conference on Trade and Development	www.unctad.org

8 ANNEXES

8.1 ANNEX I - ACP Sugar Protocol Countries

Barbados

Belize

Congo

Côte d'Ivoire

Fiji

Guyana

Jamaica

Kenya

Madagascar

Malawi

Mauritius

Mozambique

St. Kitts and Nevis

Swaziland

Tanzania

Trinidad and Tobago

Zambia

Zimbabwe

Source: EC regulation no. 266/2006

8.2 ANNEX II – Least Developed Countries

Afghanistan
Angola
Bangladesh
Benin
Bhutan
Burkina Faso
Burundi
Cambodia
Cape Verde
Central African Republic
Chad
Comoros
Congo (Democratic Republic of the)
Djibouti
Equatorial Guinea
Eritrea
Ethiopia
Gambia
Guinea
Guinea-Bissau
Haiti
Kiribati
Lao People's Democratic Rep.
Lesotho
Liberia
Madagascar
Malawi
Maldives
Mali
Mauritania
Mozambique
Myanmar
Nepal
Niger
Rwanda
Samoa
Sao Tome and Principe
Senegal
Sierra Leone
Solomon Islands
Somalia
Sudan
Timor-Leste
Togo
Tuvalu
Uganda
United Rep. of Tanzania
Vanuatu
Yemen
Zambia

Source: UN, www.un.org/special-rep/ohrlls/ldc/list.htm .

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TEZE BAKALÁŘSKÉ PRÁCE

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Garant studijního programu Vám dle zákona č. 111/1998 Sb. o vysokých školách a Studijního a zkušebního řádu UK v Praze určuje následující bakalářskou práci

Předpokládaný název BP:

Společná zemědělská politika Evropské Unie a světový obchod s cukrem

Charakteristika tématu, současný stav poznání, případné zvláštní metody zpracování tématu:

V dnešní době je obchod s cukrem a především jeho liberalizace velmi ožehavým tématem, a to pro všechny, kteří se ho, ať už jakkoliv, účastní. Na současnou situaci silně doplácejí daňoví poplatníci i spotřebitelé cukru ve vyspělých, protekcionistických zemích jako je Evropská Unie (EU), protože z vybraných daní se hradí nejrůznější dotace na výrobu cukru, a navíc spotřebitelé musí cukr kupovat za ceny, které jsou několikanásobně vyšší než ty na světovém trhu. Pro některé rozvojové země, které cukr produkují, je situace též velmi tíživá, vzhledem k tomu, že tyto země jsou často alespoň částečně hospodářsky závislé na exportu cukru. V případě, kdy tyto země mají speciální dohody s některou protekcionistickou zemí, často vůbec nediverzifikovaly svou zemědělskou produkci a navíc je ohrožuje chystané snižování garantovaných cen cukru například v EU.
V případě, že prodávají cukr na světovém trhu, jim současná situace škodí tím, že ceny na světovém trhu jsou udržovány velmi nízko také díky dotovaným exportům např. ze strany EU. To vše je důvodem pro to, aby se dnešní podoba obchodu s cukrem změnila, ovšem s ohledem na to, aby při tom nezkolabovaly ekonomiky hospodářsky nejslabších zemí, kterých se obchod s touto komoditou týká.

Struktura BP:

1. Úvod
2. Cukr a světový obchod s touto komoditou – historický přehled
    - 2.1 Charakteristika cukru jakožto zemědělské komodity
    - 2.2 Vývoj obchodu s cukrem v 16. – 19. století
    - 2.3 Přehled speciálních smluv o obchodu s cukrem ve 20. století

2.4 Statistiky obchodu s cukrem (množství, ceny atp.)
3. Společná zemědělská politika EU
3.1 Společná zemědělská politika v EU
3.2 Cukerné politiky EU
4. Dopad současné situace na jednotlivé hráče
4.1 Dopad na protekcionistické vyspělé země
4.2 Dopad na výrobce cukru ze zemí třetího světa, kteří mají speciální smlouvy zajišťující přístup na trh rozvinutých zemí
4.3 Dopad na výrobce cukru ze zemí třetího světa, kteří svůj cukr prodávají na marginálním světovém trhu
5. Cukr a biopaliva
6. Závěr

Seznam základních pramenů a odborné literatury:

An End to EU Sugar Dumping?: Implications of the WTO panel ruling in the dispute against EU sugar policies brought by Brazil, Thailand, and Australia, Oxfam Briefing Note, 2005

Baldwin, Richard – The Economics of the European Integration, McGraw Hill, 2004

Harrison, Michelle – King Sugar, LAB, 2001

Jones, E. - Signing Away The Future: How trade and investment agreements between rich and poor countries undermine development, Oxfam Briefing Paper, 2007

Jones, E., Hormeku, T. – A Matter of Political Will: How the European Union can maintain market access for African, Caribbean and Pacific countries in the absence of Economic Partnership Agreements, Oxfam Briefing Paper, 2007

Messerlin, Patrick A. - Measuring the Costs of Protection in Europe: European Commercial Policy in the 2000s, Institute for International Economics, 2001

Pelkmans, Jacques – European Integration: Methods and Economic Analysis, Financial Times/Prentice Hall, 2006

Price Stabilization on World Agricultural Markets: An Application to the World Market for Sugar – Doktors der Wirtschaftswissenschaft, Freier Universität, Berlin, 1991

Raworth, Kate – The Great EU Sugar Scam: How Europe's sugar regime is devastating livelihoods in the developing world, Oxfam Briefing Paper, 2002

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