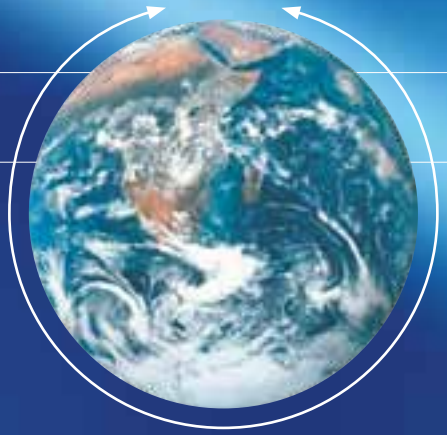
Waste without frontiers

Global trends
in generation and transboundary movements of hazardous wastes and other wastes

Analysis of the data from national reporting to the Secretariat of the Basel Convention for the years 2004 - 2006



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BASEL CONVENTION

Waste without frontiers

Prepared by Kees Wielenga for
the Secretariat of the Basel Convention
Geneva, 2010

CONTENTS

Contents

EXECUTIVE SUMMARY

Executive Summary

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (hereafter the 'Convention') is the most comprehensive global environmental agreement on hazardous wastes and other wastes. The Convention entered into force on 5 May 1992 and has 175 Parties as at 20 December 2010. It aims to protect human health and the environment against the adverse effects which may result from the generation, transboundary movement and management of hazardous wastes and other wastes (hereafter 'hazardous and other wastes').

Parties to the Convention have an obligation under its Article 13 to transmit specific information, on an annual basis and through the Secretariat of the Convention (hereafter the 'Secretariat') to the Conference of the Parties. This is referred to as "national reporting". The Secretariat has developed procedures and processes to systematically collect, process and disseminate the data and information contained in these national reports. These procedures and processes have also been adopted and further revised by decisions of the Conference of the Parties.

Most recently by its decision VIII/14, the eighth meeting of the Conference of the Parties made a few revisions to these national reporting procedures and processes, including to the frequency of preparing and publishing a summary, including graphic representations, of the data on transboundary movements of hazardous and other wastes from an annual to a triennial basis. This document is the first report prepared for this purpose following this decision and covers the period 2004 to 2006. The datasets for these years as reported by Parties are available on the web site of the Convention (http://www.basel.int/natreporting/index.html).

The datasets contain important information on global trends in the generation and transboundary movements of hazardous and other wastes. However, this information is incomplete as not all Parties have transmitted data on such generation and transboundary movements. In particular, data on the generation of hazardous wastes is insufficient to estimate amounts generated on a worldwide scale. The 66 Parties that reported generation of hazardous wastes in this period represent 40% of the world's population and 60% of the global economy. Due to significant differences in definitions, reporting systems and other factors, these data cannot be used to extrapolate an accurate estimate of the total amount of hazardous wastes that are generated. The data, as imperfect as they are, do show however, that generation of hazardous wastes is an important issue for all, not only industrialized Countries, with developing countries and countries with economies in transition also generating considerable amounts of hazardous wastes.

The reported data on transboundary movements provide a rather good picture of the amounts of hazardous and other wastes generated and subject to transboundary movements globally. Even though the number of Parties that report has not increased, data from Parties that report also include information on transboundary movements involving Parties that did not provide reports. However, it should be kept in mind that the data on transboundary movements only cover information on legal movements of wastes covered by the Convention and not on illegal movements.

The following analysis shows that there has been progress on a number of issues addressed by the Convention, in particular in relation to the following points:

- Transboundary movements are increasing, but the vast majority of hazardous and other wastes is still treated within the country of origin and if waste is exported it stays, in most cases, within the same geographical region - in line with the principle of reducing to a minimum transboundary movements;
- Most of the waste that is moved across borders is moved for operations to recover, recycle, reclaim, make direct re-use or alternative use of the wastes concerned. From the information available, it appears that presently only high income member states of the Organisation for Economic Cooperation and Development (hereafter 'OECD countries') allow significant amounts of hazardous and other wastes to be imported for final disposal. It therefore may be assumed that these Parties would only accept such imports if they could treat these wastes in an environmentally sound manner;
- Imports of hazardous wastes by developing countries and countries with economies in transition are decreasing and exports from those countries to developed countries, where it is assumed these wastes can be treated in an environmentally sound manner, are increasing. Even though the ban on export of hazardous wastes from developed countries to developing countries adopted by the Conference of the Parties to the Basel Convention has not yet entered into force, such transboundary movements are already decreasing. The trends observed may, at least partly, be caused by underreporting by Parties.
- There is no evidence that significant amounts of hazardous wastes are being transferred from richer countries to poorer countries.

There are also areas where further progress may be needed:

- Continuous efforts should be made to encourage Parties to transmit their national reports to the Secretariat and to improve the quality and comparability of data in such reports;
- The quantitative information presently received about transboundary movements is satisfactory, but more information is needed about the generation of hazardous wastes and the quality of treatment in the states of import, to be able to assess if the goal of environmentally sound management of wastes is being achieved.
- More information on illegal movements should be made available and analyzed more systematically to detect areas of implementation of the Convention where further improvement could be made.

1 INTRODUCTION

Introduction

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, which entered into force in May 1992 and to date has 175 Parties, aims to achieve the following principle objectives:

- **Reduce** transboundary movements of hazardous wastes and other wastes to a minimum, consistent with their environmentally sound management;
- **Dispose** of hazardous wastes and other wastes as close as possible to their source of generation;
- **Minimize** generation of hazardous wastes in terms of quantity and degree of hazard.

BASEL CONVENTION

Parties commit themselves to, amongst other obligations, a control system regulating transboundary movements of hazardous wastes and other wastes. The aim is to ensure that wastes are only moved across borders when necessary, with the prior informed consent of all Parties involved and only when their environmentally sound management is assured. Parties also commit to implementing appropriate legal, administrative and other measures to implement and enforce the Convention, including to minimize the generation of these wastes and ensure adequate facilities for their environmentally sound management.

Parties also cooperate and exchange information about the generation and transboundary movements of hazardous and other wastes. The Secretariat receives, processes, compiles and makes available this information to all interested stakeholders on an annual basis.

This report, which is intended to provide a summary and an analysis of major trends and indicators on the generation and transboundary movements of hazardous and other wastes, is the first produced for the period 2004-2006 following decision VIII/14 of the eighth meeting of the Conference of the Parties to the Basel Convention. This decision revised national reporting procedures and processes, requiring the Secretariat to prepare and publish a summary, including graphic representations, of the data on transboundary movements of hazardous and other wastes on a triennial, rather than an annual, basis. The datasets for these years as reported by Parties are available on the web site of the Convention (http://www.basel.int/natreporting/index.html).

Specifically, this summary and analysis address:

- trends and highlights relating to the generation of hazardous and other wastes, including indicators of waste generation;
- trends in the volume of hazardous and other wastes subject to transboundary movements;
- main countries of import and export;
- main types of hazardous and other wastes subject to transboundary movements;
- main types of hazardous and other waste treatment in the country of import;
- flow analysis of hazardous wastes between different groups of countries according to their legal status within the Convention, between countries in specific regions and between countries with differing levels of wealth;
- indicators on the share of export.

The Secretariat engaged a consultant, Mr. Kees Wielenga of FFact Management Consultants, to prepare this report. For a number of aspects presented in this report a methodology had to be developed. The methodological choices were made by the consultant. The conclusions and findings in this report do not necessarily reflect the opinions, stated policy or decisions of the Secretariat of the Basel Convention, the United Nations Environment Programme and United Nations.

Prior to presenting the findings of this analysis, some key concepts and definitions are explained and some further information on the national reporting system under the Convention is provided.

2 KEY DEFINITIONS
Key definitions and concepts and the reporting system

2.1 Definitions and concepts used

In this report, a number of definitions and concepts are used to describe patterns and trends in generation and transboundary movements of hazardous and other wastes. These definitions and concepts, as well as their basis, are briefly explained in this section.

'Hazardous wastes' and 'other wastes'

The Convention uses specific terminology when describing wastes that are covered by it. The most important terms are 'hazardous wastes' and 'other wastes'.

The Convention defines hazardous wastes in Article 1.1 as:

(a) Wastes that belong to any category contained in Annex I, unless they do not possess any of the characteristics contained in Annex III; and

(b) Wastes that are not covered under paragraph (a) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit.

Hazardous wastes as defined in Article 1.1.a refers specific categories of wastes (listed in its Annex I) such as waste pharmaceuticals, drugs and medicines (Y3) or waste mineral oils unfit for their originally intended purpose (Y8). If waste from these categories possess one or more specific characteristics that renders the waste hazardous (listed in Annex III), such as being toxic or flammable, the waste is considered to be a hazardous waste under the Convention. This is therefore the globally harmonized part of the definition of hazardous wastes. In this report, these wastes are referred to as 'Article 1.1.a. wastes'. These wastes are also further clarified, detailed and defined within the Annexes VIII and IX of the Convention.

Article 1.1.b indicates that wastes other than those described above and which are defined or considered under domestic legislation as hazardous waste are also hazardous wastes under the Convention. These wastes are not necessarily considered as hazardous by all Parties, but once a Party notifies the Secretariat of domestic legislation with such provisions or definitions, the procedures of the Convention are applied to all transboundary movements involving the notifying Party e.g. notifications and consents for transboundary movements of such 'national' hazardous wastes. This inclusion of nationally defined hazardous waste provides for an additional safeguard for environmental protection under the Convention. For the interpretation of the data submitted to the Secretariat, this means that different countries which apply different definitions may report different data on 'hazardous wastes' that may not be totally comparable. When interpreting these data, therefore, some caution must be applied. These wastes are hereafter referred to as 'Article 1.1.b wastes'.

For **other wastes** Article 1.2 specifies that wastes that belong to any category contained in Annex II that are subject to transboundary movement shall be 'other wastes' for the purposes of the Convention. Annex II contains two categories of waste: wastes collected from households and residues arising from the incineration of household wastes. These 'other wastes' are not (necessarily) hazardous wastes, that is, they do not necessarily fall within the abovementioned definitions of hazardous wastes.

Parties and countries

As of the date of publication, there are 175 countries that are Parties to the Convention. In general, only Parties are bound by the Convention's provisions and therefore only Parties have obligations to transmit data. However, the datasets on transboundary movements also contain information concerning countries that are not Parties to the Convention, e.g. if a Party has imported waste from such countries or exported waste to them. In this report, the term 'countries' is used to refer to states regardless of whether or not they are Parties to the Convention. The term 'Parties' is only used if a specific reference is made to countries that are Parties to the Convention.

Annex VII countries and non-Annex VII countries

Annex VII is an integral part of the amendment to the Convention adopted by the second and third meetings of the Conference of the Parties, which is not yet in force, implementing a ban on the export of hazardous wastes from certain countries listed in this Annex to all other countries[1]. Annex VII consists of Parties and other States which are members of OECD, EC, Liechtenstein. These are sometimes also referred to as 'developed' countries. The other countries (non-Annex VII countries) are developing countries or countries with economies in transition.

The aim of the ban under decisions II/12 and III/1 (hereafter the 'Ban Amendment') was to protect non-Annex VII countries from unwanted imports of hazardous wastes and to ensure the environmentally sound management of hazardous wastes, as required by the Convention. The Ban Amendment has not yet entered into force. However, a number of Parties, including the European Union (EU) and its Member States, are already implementing the ban under national legislation and apply it when they receive notifications of intended transboundary movements of hazardous wastes.

For this report, an overview was made of transboundary movements amongst and between these Annex VII and non-Annex VII countries. It was assumed that the 10 out of 12 new Members of the EU from Central and Eastern Europe were already Annex VII countries for the entire reporting period concerned[2]. By joining the EU, these Parties also became Annex VII countries, whereas most were non-Annex VII countries prior to joining the EU. The assumption, at the time of the relevant COP decisions, that the EU countries were included in Annex VII is not completely correct as not all of these countries were EU members for the entirety of the 2004 to 2006 period, having joined the EU during the year 2004. However, this assumption is necessary to ensure consistent comparison of datasets for different years. Bulgaria and Romania became Member States of the EU on 1 January 2007 and are only considered as Annex VII countries from that date onwards. These two Parties are considered to be non-Annex VII countries for the purposes of this report. From 2007 onwards, they would be Annex VII countries.

Regional groups of countries

Regions are defined to allow analysis of geographic patterns of transboundary movements. The definition used in this report combines the aspect of the legal difference according to Annex VII and a geographical approach. The regions, as referred to within the analysis, are defined in Table 1.

Country groups according to wealth

To analyse if there is evidence of 'economic' dumping of hazardous wastes from rich countries to poor countries and countries with economies in transition, the patterns of transboundary movements based on the wealth of the countries involved were also studied. The countries were classified according

1 At the Second Meeting of the Conference of the Parties (COP2) in March 1994, Parties agreed to an immediate ban on the export from OECD to non-OECD countries of hazardous wastes intended for final disposal. They also agreed to ban, by 31 December 1997, the export of wastes intended for recovery and recycling (Decision II/12). However, because Decision II/12 was not incorporated in the text of the Convention itself, the question as to whether it was legally binding or not arose. Therefore, at COP3 in 1995, it was proposed that the ban be formally incorporated in the Convention as an amendment to the text of the Convention itself (Decision III/1).

2 The following countries became Member States of the EU on 1 May 2004: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Republic and Slovenia. On 1 January 2007 Bulgaria and Romania also joined the EU as Member States.

2 KEY DEFINITIONS

Table 1 *Delimitation of regions as used for the regional analysis of transboundary movements*

Region	Remarks
Africa	All African countries
America OECD	United States of America, Canada and Mexico
America other	Other countries in the America and the Caribbean
Asia OECD	Japan and the Republic of Korea
Asia other	Other Asian countries with the exception of the Russian Federation and its former Republics
Europe EU/OECD	European EU and OECD members and Turkey
Europe other	Other European countries and the Russian Federation and its former Republics
Oceania OECD	Australia and New Zealand
Oceania other	Other countries in Oceania

to the income group categories established by the World Bank[3]. Economies are divided according to 2008 Gross National Income (GNI) per capita data, calculated using the World Bank Atlas method. The groups are: low income, US$975 or less; lower-middle income, US$976 - US$3,855; upper-middle income, US$3,856 - US$11,905; and high income, US$11,906 or more. For the analysis of transboundary movements, the high income countries were split between OECD and non-OECD countries.

2.2 Reporting system and coverage

One of the obligations on Parties to the Convention is to transmit certain information related to the implementation of the Convention. Pursuant to paragraph 3 of Article 13, Parties are required to transmit annual national reports to the Conference of the Parties through the Secretariat. Parties are required to include the following information in these reports:

- competent authorities and focal points that have been designated;
- transboundary movements of hazardous and other wastes in which they have been involved;
- measures adopted by them to implement the Convention;
- available qualified statistics which have been compiled by them on the effects on human health and the environment of the generation, transportation and disposal of hazardous or other wastes;
- bilateral, multilateral and regional agreements and arrangements entered into;
- accidents occurring during the transboundary movement and disposal of hazardous and other wastes and on the measures undertaken to deal with them;
- disposal options operated within the area of their national jurisdiction;
- measures undertaken for development of technologies for the reduction and/or elimination of production of hazardous and other wastes; and,
- such other matters as the Conference of the Parties shall deem relevant.

Parties are requested to complete a questionnaire, the format and content of which was adopted by the sixth meeting of the Conference of the Parties, on an annual basis. After carrying out quality control, the Secretariat compiles the information transmitted and makes it available on the Convention website (http://www.basel.int/natreporting/index.html). The online reporting database of the Convention provides access to data and information contained in the national reports and is also accessible through the Convention website (http://www.basel.int/natreporting/questables/frsetmain.html).

This present report is limited to consideration of the following elements of the national reporting as they contain quantitative information:

- Information on the generation of hazardous and other wastes;
- Information on transboundary movements.

Generation of hazardous and other wastes

The amount of information on the generation of hazardous and other wastes received via national reporting is limited. It consists only of information on the total amount of wastes generated for the following categories:

- The total amount of hazardous wastes according to Article 1.1.a of the Convention, as well as amounts of the categories of wastes as specified in Annex I to the Convention;
- The total amount of hazardous wastes according to Article 1.1.b of the Convention;
- The total amount of 'other wastes' according to Annex II to the Convention, as well as of the categories of wastes as specified in this Annex.

The data as transmitted by Parties on generation of hazardous and other wastes are largely incomplete. In addition, as the Parties that report may differ from year to year for the reporting period 2004-2006, the total amounts reported cannot be compared as such.

Transboundary movements

Reporting of information on transboundary movements is mandatory under the Convention (Article 13). This information contains a number of elements:

- Geographical information: the country of origin and destination and, if applicable, countries of transit;
- Information about the hazardous and other wastes: type, quantity, category and characteristics;
- Treatment: the type of treatment the hazardous and other wastes will undergo in the country of destination;
- Other: Disposals which did not proceed as intended, efforts to reduce the amount of wastes subject to transboundary movements.

The format in which these data are transmitted is standardized and the Secretariat undertakes considerable effort to collect, verify and publish the data. The data compiled by the Secretariat are the best available to analyze patterns of transboundary movements of hazardous and other wastes. However, a number of aspects of these data have to be taken into account when analyzing them. The main issues are:

- not all Parties report;
- there are differences in definitions of hazardous wastes;
- there are differences in national reporting systems at the domestic level

These issues are explained in more detail in Annex 1.

The information transmitted by Parties within the reports on transboundary movements that did not proceed as intended and statistics on human health or the environment has not been analyzed for this report.

3 Information on the Country Classification as used by the Word Bank can be found on the website of the Bank: www.worldbank.org in the section 'Data and statistics'. The latest rankings of countries according to this classification can also be found on that section of the website.

3 GENERATION OF WASTES
Generation of wastes

3.1 Generation of hazardous wastes

Generation of hazardous wastes is a reflection of the industrial processes resulting in wastes that contain hazardous substances and the consumption of goods containing such substances. Data on the generation of hazardous and other wastes are provided to the Secretariat in the context of the national reporting system under the Convention. There was no formal obligation to report on the generation of hazardous and other wastes and therefore not all Parties report this information.

Table 2 presents the data as reported in respect of such generation for the years 2004 to 2006. A split was made between hazardous wastes generated by Annex VII countries and non-Annex VII countries. A full overview of the amounts of hazardous wastes reported by Parties for these years is given in Annex 2. Due to the limited number of Parties that reported, the figures in Table 2 represent an incomplete picture of global generation of hazardous wastes.

Table 2 *Generation of hazardous wastes as reported to the Secretariat for the years 2004 to 2006 (amounts in millions of tonnes)*

		2004	
Group	**Parties reporting**	**Amount**	**%**
Annex VII	28	37	25%
Non Annex VII	29	200	75%
Total	**57**	**267**	**100%**
		2005	
Group	**Parties reporting**	**Amount**	**%**
Annex VII	25	60	73%
Non Annex VII	27	22	27%
Total	**52**	**82**	**100%**
		2006	
Group	**Parties reporting**	**Amount**	**%**
Annex VII	25	70	77%
Non Annex VII	26	21	23%
Total	**51**	**91**	**100%**

The reported amounts in 2004 differ considerably from those in 2005 and 2006. This is mainly due to data from Kazakhstan that reported the amount of 146 million tonnes of hazardous wastes generated in 2004. Kazakhstan did not report in 2005 and 2006. This extremely high figure may be explained by the fact that the country applies a system of classification of hazardous wastes different from the system as applied under the Convention. This system possibly has similarities with the system in place in the Russian Federation. The Russian Federation also reports very high amounts of hazardous waste as indicated in Table 3, but indicated that not all this waste would be hazardous under the definitions of the Convention. Table 2 only contains the amounts of hazardous wastes from the Russian Federation that correspond with the definition of Article 1.1.a of the Convention and not all waste as shown in Table 3.

Table 3 *Reported amounts of hazardous wastes by the Russian Federation (amounts in millions of tonnes)*

Hazard class	Amounts
I extreme hazard	0.34
II high hazard	1.62
III high hazard	7.87
IV low hazard	134
V practically non-hazard	2,492
Total	**2,636**

In its explanatory note the Russian Federation indicates that, in general, classes I, II and III would be classified as hazardous wastes according to Article 1.1.a of the Convention. It appears that some of the wastes in other classes also fit into this definition as the Russian Federation reports a total amount of 26.4 million tonnes of wastes as hazardous according to Article 1.1.a. which is more than the sum of the amounts of classes I to II in Table 3. Kazakhstan possibly uses a similar classification as the Russian Federation, but may also have reported the wastes in the classes IV and V as hazardous wastes. This is a clear example of the problem one may encounter when interpreting the data on generation of hazardous wastes, in particular if Parties do not provide explanations as to how their national definitions relate to the definition in Article 1.1.a of the Convention.

The total number of Parties that reported on generation of wastes is limited. In the 2006 reports, these Parties represented approximately 40% of the world's population and approximately 60% of the global Gross Domestic Product (GDP). Due to this limited geographical scope and the differences in national definitions of hazardous wastes, as illustrated by the abovementioned examples of the Russian Federation and probably Kazakhstan, the data as compiled by the Secretariat cannot be used to make an accurate estimate of the total amount of hazardous wastes that is generated worldwide. However, some conclusions can still be drawn from these data.

In the early years of the Convention, the problem of hazardous wastes was assumed to be, by and large, a problem caused by developed countries. It was assumed that developing countries suffered from imports of hazardous wastes but did not contribute very much to their generation. If one looks at the contribution of non-Annex VII countries to hazardous waste generation, it is clear that this picture no longer reflects reality. Non-Annex VII countries generate approximately 25% of all reported hazardous wastes, even if the reported amount from Kazakhstan in 2004 is not taken into account. Non-Annex VII countries therefore also generate significant amounts of hazardous wastes.

3.2 Indicators for generation of hazardous wastes

The overall amounts of hazardous wastes reported can differ considerably between Parties. This may be due to the differences in size of the countries. A country with a large population, such as China, will produce more hazardous wastes than a country with a small population, such as Luxembourg. Therefore, it can be useful to calculate the generation of hazardous wastes per inhabitant to compensate for this aspect. The results of this calculation for the 2006 data are presented in Figure 1.

The amount of hazardous wastes generated per inhabitant differs still considerably. In 2006, the highest amount is reported by Estonia with over 5000 kg of hazardous waste per inhabitant. In Estonia power-plants use a particular fuel which generates large amounts of hazardous residues. Another country with high amounts of hazardous wastes due to polluting industries is Belarus. Other countries with high amounts of hazardous wastes per inhabitant include wealthier nations such as the Netherlands, Sweden, Belgium, Germany, Norway, Finland and Luxembourg . As a general rule, at the lower end of the graph, one finds lower income countries.

3 GENERATION OF WASTES

Another way to analyze the data on generation of hazardous wastes is to compare it with the scale of economic activity of a country. GDP is a good proxy for this parameter. For the 2006 dataset the generation of hazardous wastes per unit of GDP was calculated and is presented in Figure 2. Estonia is by far the largest producer of hazardous wastes per unit of GDP, with Belarus also remaining in the higher part of the graph. Mozambique, Cuba and the Ukraine can be found much higher in the ranking based on size of the economy rather than in the calculation based on the amount generated per inhabitant. This may be an indication of the presence of specific polluting industries. Generation of hazardous wastes per inhabitant better reflects the consumption patterns in a country, whereas generation of hazardous wastes per unit of GDP is an indicator that better reflects the production sector.

Within the time available for this review, it was not possible to seek further information that could clarify how the different figures on generation of hazardous wastes should be interpreted. Therefore it was not possible to check the impact of:

- Differences in definitions;
- Differences in registration systems;
- Differences in industrial structures;
- Differences in use of technology within the industry;
- Differences in consumption patterns.

Conclusion

Parties that reported generation of hazardous wastes represent 40% of the world's population and 60% of the size of the global economy. The amount of hazardous wastes generated per inhabitant or per unit of economic activity (GDP) differs considerably amongst Parties. Due to the large differences in definitions, reporting systems and other factors, these data cannot be used to extrapolate an accurate estimate of the total amount of hazardous wastes that is generated globally.

Figure 1 *Generation hazardous wastes in 2006 (kg per inhabitant)*

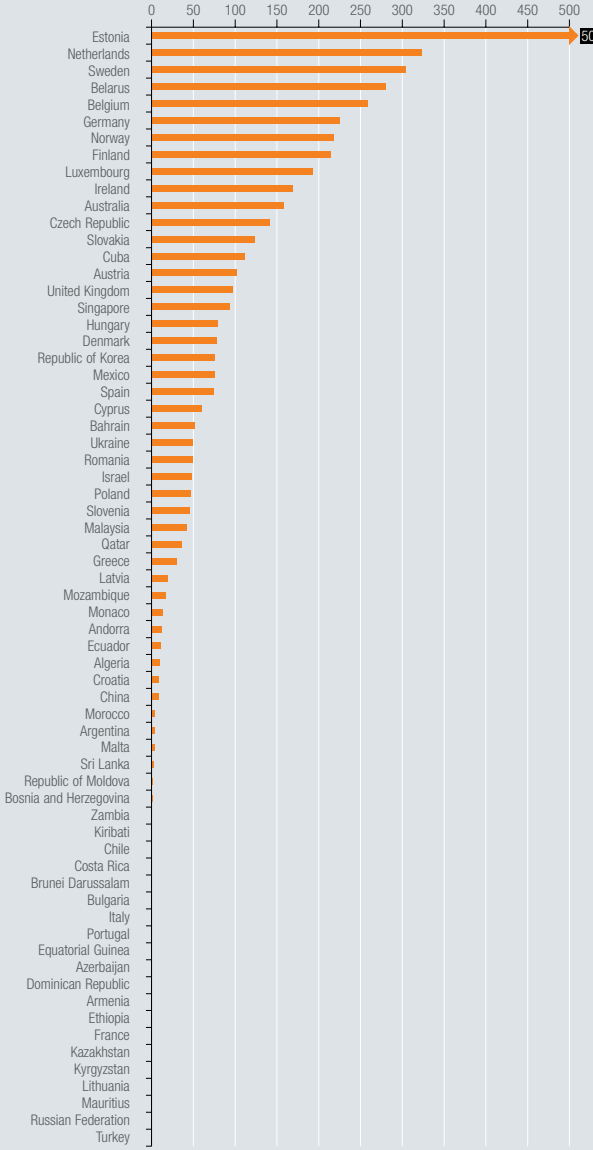
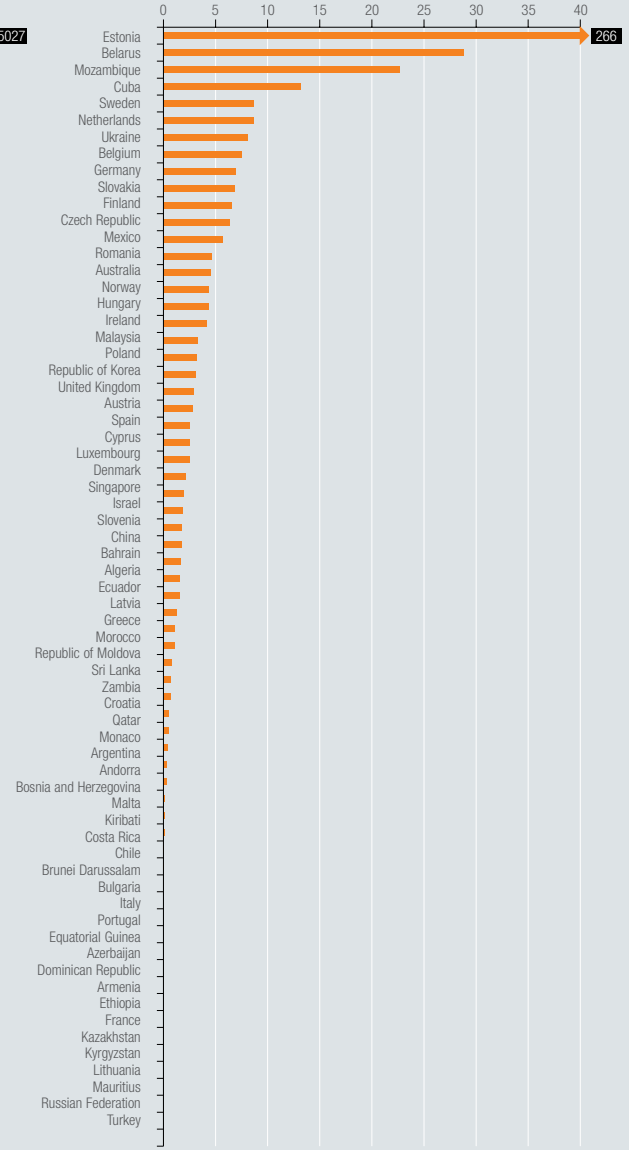


Figure 2 *Generation per unit of GDP in 2006 (ton per million US$)*



3 GENERATION OF WASTES
Generation of wastes

3.3 Trends in countries that reported for several years

The group of Parties that reports on the generation of hazardous and other wastes in a given year always differs. Therefore one cannot use the total amount reported from 2004 to 2006 as presented in Table 2 to establish trends in generation. However, 43 Parties provided data for all three years. These have been analyzed for this report to detect trends. The results are presented in Table 4 where the results for countries in the same wealth group have been aggregated. Detailed information on the reported amounts is included in Annex 2.

Table 4 *Generation of hazardous wastes according to income classification (in million tonnes)*

Wealth group	Number of Parties	2004	2005	2006	Change between 2004 and 2006
High income: OECD	17	43.7	44.8	50.2	15%
High income: non-OECD	10	8.0	7.8	7.7	-4%
Upper -middle income	10	6.9	7.5	8.5	23%
Lower -middle income	5	12.6	14.3	13.4	7%
Low income	1	0.42	0.42	0.35	-16%
Total	**43**	**71.5**	**74.8**	**80.1**	**12%**

The trend for the total of all reported amounts shows a clear increase of the amount of hazardous wastes generated. Between 2004 and 2006 this amount increased by 12%. Since this trend is based upon data from the same group of Parties over the three years this trend is much more robust than the totals presented in Table 2. This analysis remains valid even though data from some Parties may not be fully comparable due to changes in the definition of hazardous waste over the years. In the high income OECD countries, the trend is dominated by large increases in reported generation of hazardous wastes in Australia, the Netherlands and the United Kingdom. Only the United Kingdom provides for an explanation in the endnotes: that the rise in 2006 may be explained by a change of definitions. The 2006 data of the United Kingdom may therefore not be comparable with the previous years.

In the high income non-OECD countries, the trend is dominated by the development in Estonia. This country generates one of the highest amounts of hazardous wastes per inhabitant (see Figure 1) and in total approximately 7 million tonnes of hazardous wastes. The amount generated in Estonia was reduced in the period 2004 – 2006.

In the upper-middle income countries, a general increase of hazardous waste generation can be observed. The only exceptions are Bosnia & Herzegovina and Romania, where the amount of hazardous wastes generated decreased. In the lower-middle income countries, the trend is dominated by the data reported by China. This shows an increase in 2005 compared to 2004, but a decrease in 2006. Only one low income country, Mozambique, has provided data and the amount generated in Mozambique decreased by 16% in the period 2004 – 2006.

Conclusion
The amount of hazardous wastes generated in 43 Parties that reported for all three years increased 12% between 2004 and 2006. However, the trend is dominated by developments in a very limited number of Parties. The trend is not the same for all groups of countries. The high income non-OECD countries and low income countries show a decrease in the amount generated.

3.4 Generation of other wastes

The Convention also addresses two waste types included in Annex II as 'other wastes' requiring special consideration, namely: wastes collected from households; and residues arising from the incineration of household wastes.

Generation of wastes collected from households (hereafter 'household wastes')

In 2004 and 2005, 36 Parties reported on the generation of household wastes and in 2006 only 31[4]. The reported amounts are given in Annex 3. Due to the changing composition of the group of Parties reporting, the data cannot be compared over the years. To get an indication of the trends in generation of household wastes, Table 5 presents the data reported by the 21 Parties that provided information for the period of 2004 to 2006.

Table 5 *Generation of household wastes by Parties that reported for all three years (amounts in tonne)*

Party	2004	2005	2006	Change 04/06	Remark
Albania	622,400	633,590	622,400	0%	
Andorra	38,465	38,520	38,961	1%	
Bahrain	318,068	306,203	312,983	-2%	
Belarus	3,954,600	3,181,282	3,484,000	-12%	municipal waste
China	256,224	278,913	286,358	12%	*
Cuba	3,100,900	3,990,000	4,518,125	46%	
Czech Republic	4,651,962	4,439,098	3,979,000	-14%	
Greece	4,781,468	4,853,000	4,927,137	3%	
Hungary	3,057,264	3,828,451	3,086,384	1%	
Ireland	1,510,042	1,543,468	1,773,242	17%	municipal waste
Latvia	593,294	764,371	1,420,459	139%	
Monaco	58,433	57,427	42,250	-28%	
Netherlands	5,397,100	4,957,856	4,550,000	-16%	
Norway	1,746,000	1,844,000	1,940,000	11%	
Republic of Korea	18,252,555	17,665,270	17,828,060	-2%	
Republic of Moldova	430,000	607,000	321,615	-25%	
Singapore	2,482,600	2,548,800	2,563,600	3%	
Slovakia	1,475,122	1,558,263	1,623,306	10%	
Slovenia	594,361	608,479	623,188	5%	
Spain	22,735,142	23,549,390	23,648,032	4%	municipal waste
Tunisia	1,293,106	1,318,968	2,000,000	55%	
Total	**77,349,106**	**78,572,349**	**79,589,100**	**3%**	

* Data only for Macao, Special Administrative Region of China.

4 Some of these Parties reported the generation of municipal waste. Municipal waste is often defined waste from households and similar wastes from other sources such as shops and businesses. Other Parties reported the amounts only for part of the territory under their national jurisdiction.

4 TRANSBOUNDARY MOVEMENTS

These data show a modest increase of 3% between 2004 and 2006. However the trends vary significantly between Parties. Some show a very large increase which can only be attributed to changes of definitions or reporting systems e.g. the increase in Latvia of 139% in two years has to be understood as being the result of the improved system of data collection.

Conclusion

The amount of household wastes generated by 21 Parties that reported for all three years showed a modest increase of 3% between 2004 and 2006. There are large differences between Parties and the trend may be influenced by changes in definitions and reporting systems of the Parties that reported these data.

Generation of residues arising from the incineration of household wastes

The number of Parties that reported on residues arising from the incineration of household wastes is even more limited. In part, this is due to the fact that only a limited number of Parties reported on the generation of 'other wastes' . Also the number of Parties with incineration installations is limited, therefore reducing the data even further. Due to this limited basis for analysis, the data on this waste stream has not been further analyzed.

The main focus of the Convention is on the control of transboundary movements of hazardous and other wastes. It has established a comprehensive system of notifications and controls and the major part of the reported data is on transboundary movements. This data is analyzed in more detail in this section. Before presenting the results of this analysis, some explanations are given on the methodology used to analyze the data.

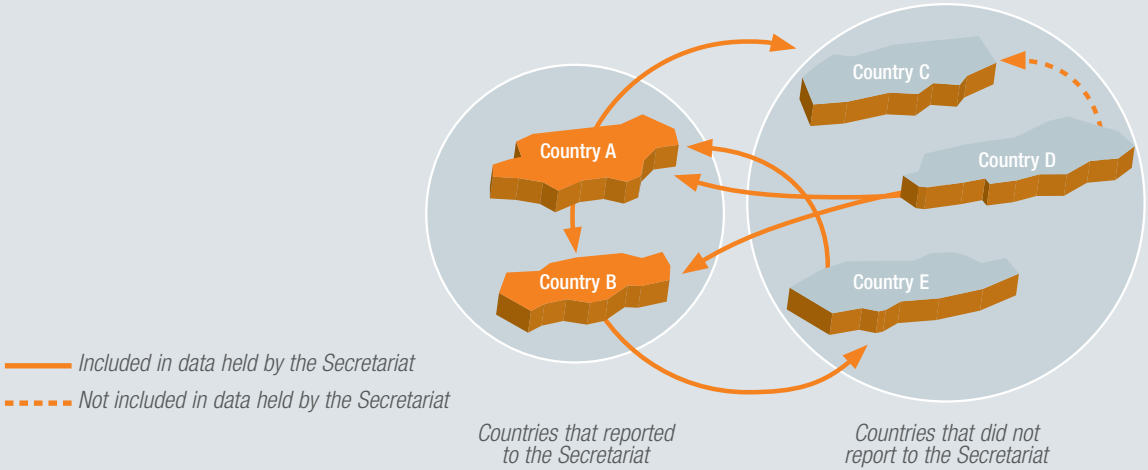
4.1 Methodology used to analyze data on transboundary movements

Transboundary movements by definition involve several countries. In all cases, there is a country of origin or state of export and a country of destination or state of import. In some cases, one or more states of transit are also involved. When analyzing the data on transboundary movements in this report, we were faced with the problem that not all Parties fulfilled their obligations to report these data. Also, in certain circumstances, countries that are not a Party to the Convention may be involved in a transboundary movement but are not obliged to report to the Secretariat. Since reported transboundary movements always involve several countries, it is possible in certain cases to get information about movements involving countries that did not report themselves, by analyzing the data reported by the other Parties involved in these particular movements. This is illustrated in the figure below.

In this illustration, only Country A and B reported on transboundary movements to the Secretariat. Country A exports wastes to countries B and C and imports wastes from countries D and E. Country B exports to Country E and imports from countries A and D. Country C imports wastes from countries A and D. The data compiled by the Secretariat thus includes transboundary movements between countries A and B twice. Country A reports its exports to B and Country B reports the same movement as imported waste from A. Even though countries C to E did not report themselves, the data from the Secretariat nevertheless contains information about movements to or from these countries where either Country A or B were involved. Only the movement from Country D to C is not covered by the data compiled, as neither of the two countries reported their data.

By combining data from reported imports with data from reported exports to countries that did not themselves report to the Secretariat, a best estimate can be made of the real amount of wastes subject to transboundary movements. Only movements that involve countries where none of the countries have reported would be missing. Since the number of countries that reported on transboundary movements of hazardous and other wastes is rather high, it may be assumed that the dataset held by the Secretariat is rather good.

Figure 3 *Coverage of data in the dataset of the Secretariat*



4 TRANSBOUNDARY MOVEMENTS
Transboundary movements

4.2 Reports by Parties

Parties report on transboundary movements in which they have been involved to the Secretariat. Table 6 gives an overview of the number of Parties that reported on imports and exports. Since transboundary movements always involve at least two countries, the number of countries mentioned in this data can be larger, since Parties that did not report could be mentioned in imports or exports as reported by other Parties. The dataset for the years 2004 – 2006 contains information about transboundary movements involving 128 countries. The total number of countries involved in reported transboundary movements is quite high which suggests that the dataset compiled by the Secretariat covers a high percentage of the total amount of transboundary movements subject to control of authorities. This is also supported by the fact that the number of countries (both Parties and non-Parties) involved in reported exports is increasing over the years, even though the number of Parties that report is decreasing. This is also an indication that, over time, more countries export waste. As mentioned above, the dataset of the Secretariat as analyzed does not take into account illegal shipments. Due to the nature of these activities, there is neither a systematic data collection of illegal activities nor a systematic recording of cases of illegal traffic that was detected during enforcement activities.

Table 6 *Number of Parties reporting and number of countries involved in reported movements*

Status	2004	2005	2006	Total period 2004 – 2006
Parties reporting imports	35	40	33	42
Parties reporting exports	62	62	55	73
Countries involved in reported transboundary movements	95	100	104	128

Table 6 shows that the number of countries that export wastes is greater than the number that import wastes. This is probably due to the fact that import requires that specific installations are available in the country and that the treatment capacity of these installations is sufficient to treat both wastes generated within the country, as well as wastes imported from other countries. Moreover, the authorities of the state of import have to consent to the import of those wastes. Apparently these conditions are met only by a limited number of countries. The larger number of exporting countries may be an indication that these countries do not have the necessary capacity to treat the waste in their own country. Over the total period that is covered by this report 42 different Parties reported imports, 73 reported on exports and data on transboundary movements involving in total 128 countries were registered.

Conclusion
The total number of Parties that report on transboundary movements is not increasing, but the movements reported cover the vast majority of movements globally, as movements involving countries that did not report themselves are nonetheless included in the reports of Parties that did.

4.3 Total amount of wastes subject to transboundary movements

The total amount of hazardous and other wastes that were subject to transboundary movements in the period 2004 to 2006 was over 10 million tonnes (Table 7) per year, with an increase of 15% in 2006 compared with 2004.

Table 7 also shows the trends in the reported amounts of the different categories of wastes that are defined in the Convention. The amount of hazardous wastes that was subject to transboundary movements increased constantly over the three years with a total increase of 22%. Hazardous wastes as defined in Article 1.1.a of the Convention represent 55% of all reported transboundary movements. These movements increased by 4% over the three years. Hazardous wastes not covered by the definition in Article 1.1.a but covered by the definition in Article 1.1.b, which are defined or considered hazardous in national legislation represent 36% of all reported transboundary movements. Transboundary movements of this type of waste increased considerably over the reported period, by 62% in three years. 'Other wastes', i.e. household wastes and residues from incineration of household wastes, represent 10% of the total amount of the reported transboundary movements. The overall amounts of hazardous and other wastes subject to transboundary movements decreased by 33% over the reporting period.

Conclusion
Reported amounts of hazardous wastes subject to transboundary movements increased by 22% between 2004 and 2006. This is mainly due to changes in wastes defined as hazardous wastes according to Article 1.1.b of the Convention. Transboundary movements of hazardous wastes as defined under Article 1.1.a of the Convention show an increase of only 4% in the same period. Transboundary movements of 'other wastes' are decreasing.

Table 7 *Total transboundary movements for the major categories of wastes as defined by the Convention between 2004 and 2006 (amounts in tonnes)*

Type of waste	2004	2005	2006	Average 2004 - 2006	Share	Change 2004 - 2006
Article 1.1.a wastes	5,833,760	4,657,031	6,080,717	5,523,836	55%	4%
Article 1.1.b wastes	2,652,343	3,848,234	4,299,953	3,600,176	36%	62%
Total hazardous wastes	8,486,103	8,505,265	10,380,670	9,124,012	90%	22%
Other wastes	1,301,830	829,007	871,713	1,000,850	10%	-33%
Total	**9,787,933**	**9,334,272**	**11,252,383**	**10,124,862**	**100%**	**15%**

4.4 Countries importing and exporting large amounts of wastes

In total, 42 Parties reported that they had imported wastes in the period of 2004 to 2006. By combining information from these Parties with information on reported exports to countries that did not report such information themselves, evidence of imports of wastes by 64 different countries can be obtained. An overview of the top 10 countries of import is provided in Table 8. The imported amounts for the period of 2004 to 2006 were averaged to establish the top 10 as these can vary considerably from one year to another. These top 10 countries were responsible for over 80% of the total amount of imported wastes.

Table 8 *Average amounts (in tonnes) of wastes imported 2004 – 2006 by the top 10 countries of import*

Country	Average amount imported 2004 - 2006	Share
Germany	2,566,921	25%
Italy	1,272,559	13%
Belgium	934,209	9%
France	731,141	7%
United States of America	697,808	7%
Belarus	575,419	6%
Netherlands	498,410	5%
Mexico	427,549	4%
Canada	309,725	3%
Malaysia	277,729	3%
Other	1,833,394	18%
Total	**10,124,862**	**100%**

In total, 73 Parties reported that they had exported wastes in the same period. The combination of data from reported exports and data from reported imports to countries that did not report themselves, provided evidence that 126 countries exported certain amounts of wastes in that period. Table 9 presents the top 10 exporting countries representing nearly 70% of the total amount of exported wastes in this period.

Table 9 *Average amounts (in tonnes) of waste exported 2004 – 2006 by the top 10 countries of export*

Country	Average amount exported 2004 - 2006	Share
Netherlands	1,477,664	15%
Germany	951,748	9%
Italy	787,125	8%
United States of America	779,219	8%
Belgium	776,048	8%
Switzerland	603,370	6%
France	602,454	6%
Austria	397,342	4%
Canada	372,293	4%
Ireland	330,195	1%
Rest	3,047,403	32%
Total	**10,124,862**	**100%**

An overview of the amounts of wastes imported and exported per country is given in Annex 4.

Conclusion
In total, over 10 million tonnes of wastes on average were imported annually by 64 countries in the period 2004 – 2006. The top 10 states of import receive 80% of the total imports, exported from 126 countries. The top 10 states of export are responsible for nearly 70% of these exports.

4.5 Waste types moved

The Convention distinguishes in its Annex I between 45 different waste categories that are considered to be hazardous wastes, unless they do not exhibit any of the hazardous characteristic listed in Annex III. These waste categories are coded with Y-codes, numbered Y1 to Y45. These waste categories are further clarified and defined in the Annexes VIII and IX of the Convention. Annex VIII contains a classification of wastes that are hazardous under Article 1.1.a of the Convention, unless they do not demonstrate any hazardous characteristics under Annex III, and Annex IX consists of a list of wastes that are not hazardous according to this Article 1.1.a, unless they contain a material listed in Annex I to the extent that they demonstrate a hazardous characteristic under Annex III.

Apart from these so-called 'Article 1.1.a' wastes, the Convention also applies to nationally defined hazardous, or 'Article 1.1.b' wastes and 'other wastes'. The most common waste categories that were shipped across borders are represented in Table 10.

Table 10 *Export per types of waste (Y codes as defined in Annex I to the Convention). Amounts in tonnes*

Waste categories	Code	Average amount 2004 - 2006	Share
Waste from waste disposal	Y18	1,281,901	13%
Lead	Y31	728,396	7%
Zinc compounds	Y23	687,892	7%
Oil/water mixtures	Y9	459,835	5%
Surface treatment waste	Y17	213,694	2%
Acids	Y34	204,779	2%
Waste oil	Y8	161,989	2%
Non halogenated solvents	Y42	160,893	2%
Wood preservatives	Y5	159,511	2%
Article 1.1.b wastes		3,600,176	36%
Other hazardous wastes		1,464,946	14%
Total hazardous wastes		**9,124,013**	**90%**
Other wastes		1,000,850	10%
Total		**10.124.862**	**100%**

From the hazardous wastes defined by Article 1.1.a of the Convention, the most common waste category is residues arising from industrial waste disposal operations (Y18). This is a category consisting of a wide variety of different wastes. Sludges from on-site effluent treatment of industrial sites could be included, as could residues from physical or chemical treatment of industrial wastes or sorting residues. Most of the waste reported as lead and lead compounds (Y31) will be materials

Transboundary movements

derived from lead acid batteries or the batteries themselves. Zinc compounds (Y23) may be ashes or drosses that contain large quantities of zinc, and also batteries containing zinc or residues from electrical arc furnaces are classified under this waste category. Wastes from surface treatment of metals and plastics (Y17) could include wastes such as machining sludges from metal treatment or pickling acids. These wastes could in principle also be classified respectively as oil/water mixtures or emulsions (Y9) or acidic solutions or acids in solid form (Y34). This shows that the attribution of Y codes to wastes is not straightforward. The Y codes are not meant to provide for a well defined classification system and their use is mainly linked to the system of determination if a waste is hazardous or not. Their use beyond hazard characterization, e.g. to determine suitable waste management options, is limited. Therefore, this information is not particularly useful for detailed analysis of patterns of transboundary movements. This is also illustrated by the relatively large proportion of transboundary movements for which specific Y codes have not been mentioned by Parties, or where Parties attribute several Y codes to a single movement.

As different Y codes may cover a wide range of different waste categories and the use of the codes is not harmonized, it is not possible to provide a detailed analysis of the categories of waste shipped and the reasons behind such shipments when using the Y codes only. The Convention does contain detailed lists of wastes and its proper classification system within its Annexes VIII and IX, as stated above. An analysis based on the use of the classification under these Annexes would reveal much more information. However, most Parties do not provide this information on transboundary movements in their reports to the Secretariat. For example, in 2006 only 20% of transboundary movements were categorized according to Annex VIII or IX listings, therefore such analysis is not possible on the basis of the current information.

Conclusion
The most frequently exported wastes are wastes defined as hazardous under national legislation (Article 1.1.b wastes). Also wastes from industrial waste disposal operations, lead and zinc compounds are exported in large quantities. Parties do, however, report on the type of waste in an inaccurate and non-harmonized way and it is not possible to derive firm conclusions based on such reported information.

4.6 Hazardous characteristics

The data reported to the Secretariat also contain information about the hazardous characteristics of the wastes. This is given in the form of H codes as defined in Annex III of the Convention. These data pose certain problems when subject to analysis. Often a waste that is transported has several hazardous characteristics at the same time. For example, certain pharmaceutical wastes can be at the same time poisonous (H 6.1) and flammable liquids (H3). The number of combinations of hazardous characteristics as reported is large, which complicates the analysis. Moreover, Parties do not report on hazardous characteristics in a harmonized way. For example, some countries report referring to the H-codes of the EU Regulation on shipments of Wastes[5], which uses the same characteristics and some, but not all, of the same H-codes as the UN system. Other Parties only indicate that the wastes as reported are hazardous or non-hazardous, without specifying a specific H-code or even leave the specified column in the questionnaire blank. The mention of H-codes helps understanding if the movement concerns hazardous wastes or not. It also provides important information for safe handling of wastes during transport. Its information value for waste management purposes is less clear. The data are therefore not analyzed in great detail on the aspect of hazardous characteristics. An overview of the amounts of waste exported per H code is provided in Table 11.

As illustrated in Table 11, the most commonly specified hazardous characteristics (if reported) are ecotoxic wastes (H12) and wastes that are capable, after disposal, of yielding another hazardous material possessing hazardous characteristics (H13). These are also the characteristics for which test methods are the most complicated and for which the application is less likely to be harmonized. This is particularly the case for H13, for which harmonized test protocols still need to be fully developed. Other commonly observed hazardous characteristics are corrosive (H8), poisonous (H6.1) and flammable liquids (H3).

Conclusion
The information on hazardous characteristics can be used to determine whether the waste subjected to transboundary movement is hazardous or not. Parties do not report in a harmonized way on the exact nature of the hazard of the waste in question and it is not possible to derive firm conclusions based on such reported information.

Table 11 *Transboundary movements according to hazard characteristics under Annex III of the Convention (all amounts in tonnes)*

Hazardous characteristic	Code	2004	2005	2006	Average
Explosive	H1	3,007	11,741	9,652	8,133
Flammable liquids	H3	334,596	363,153	330,870	342,873
Flammable solids	H4.1	197,815	113,893	111,462	141,057
Substances or wastes liable to spontaneous combustion	H4.2	11,130	10,038	15,367	12,178
Substances or wastes which, in contact with water emit flammable gases	H4.3	105,347	79,755	89,822	91,641
Oxidizing	H5.1	1,115	26,684	37,705	21,835
Organic Peroxides	H5.2	108	112	106	108
Poisonous (Acute)	H6.1	323,884	331,540	569,631	408,352
Infectious substances	H6.2	26,667	1,506	4,782	10,985
Corrosives	H8	466,369	374,036	895,537	578,647
Liberation of toxic gases in contact with air or water	H10	144,611	84,671	102,746	110,676
Toxic (Delayed or chronic)	H11	558,065	847,623	863,707	756,465
Ecotoxic	H12	1,097,724	1,240,133	1,633,565	1,323,807
Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the characteristics listed above.	H13	1,136,521	791,102	750,063	892,562
Unspecific or not reported		5,380,975	5,058,285	5,837,368	5,425,543
	Total	**9,787,932**	**9,334,272**	**11,252,383**	**10,124,862**

5 European Regulation No 1013/2006 of 4 June 2006, as amended

4 TRANSBOUNDARY MOVEMENTS

4.7 Treatment in the country of destination

The control procedure for transboundary movements aims to ensure that the relevant competent authorities are notified and can make an informed decision as to whether to consent to a transboundary movement, whilst ensuring that the wastes will be managed in an environmentally sound manner in the place of disposal. The Convention distinguishes a number of different treatment types, listed in Annex IV on disposal operations. These operations are broadly grouped into two categories:

- Operations which may lead to resource recovery, recycling, reclamation, direct re-use or alternative uses or 'recovery operations', indicated with a code numbered R1 to R13; and
- Operations which do not lead to resource recovery, recycling, reclamation, direct re-use or alternative uses are further referred to in this report as 'final disposal operations' indicated with a code numbered D1 to D15.

Most Parties have developed and implemented policies in which they promote environmentally sound recovery over safe final disposal.

Table 12 gives an overview of the treatment wastes undergo in the place of disposal with the distinction between the two categories of operations. It shows that 80% of the reported movements are destined for R1 to R13 operations. It also shows that the amount of wastes destined for final disposal grows quicker than the amount of wastes destined for recovery operations. Since 2005, Parties indicate in nearly all cases the type of treatment the wastes undergo in the country of destination.

4.8 Analysis of patterns according to country groupings

The analysis of patterns of transboundary movements could be focused on the activities of individual countries only. However, it is also interesting to see what the patterns exist between different groupings of countries. In this section, the patterns of transboundary movements are analyzed according to three different types of groupings:

- Annex VII or non-Annex VII countries;
- Regional groups of countries;
- Countries grouped according to their level of wealth.

The distinction between Annex VII and non-Annex VII countries is relevant, in particular because of the Ban Amendment. Analyzing the patterns of movements between Annex VII and non-Annex VII countries provides for indications of the impact of the Ban Amendment, if it were to enter into force.

From an environmental point of view and for the purposed of implementing the Convention's provisions, distances of transboundary movements are also an important issue. Parties have an obligation under Article 4 of the Convention to ensure that the transboundary movement of hazardous wastes and other wastes is reduced to the minimum. Furthermore, treatment of wastes close to the place of generation is the best way to minimize the environmental impact of transboundary movements. Also supervision of the relevant conditions is easier when wastes are treated close to the place of generation. To analyze these aspects patterns of transboundary movements within and between the different continents were analysed.

Table 12 *Treatment of waste in the country of destination (amounts in tonnes)*

	2004		2005		2006		
Treatment	Amount	Share	Amount	Share	Amount	Share	change 04/06
Final disposal	1,754,194	18%	1,831,621	20%	2,150,249	19%	23%
Recovery	7,922,139	81%	7,498,833	80%	9,100,413	81%	15%
Not specified	111,599	1%	3,819	0%	1,721	0%	-98%
Total	**9,787,932**	**100%**	**9,334,272**	**100%**	**11,252,383**	**100%**	**15%**

To analyze if there is evidence of 'economic' dumping of hazardous and other wastes from rich countries to poor countries, the patterns of transboundary movements based on the wealth of the countries involved were also studied. The countries were classified according to the income group categories established by the World Bank[6].

Annex VII or non Annex VII countries

The amounts of wastes moved per year fluctuate significantly. Therefore not only the data per year were analyzed, but also the data of the total transboundary movements over the three year period. The total amounts of hazardous wastes as well as the number of transboundary movements reported over the three year period are presented in Table 13.

Table 13 shows that the vast majority of transboundary movements (86% of the total amount over the three years) is between Annex VII countries. Movements between non-Annex VII countries represent a greater flow (9%) than those between Annex VII and non-Annex VII countries (total 5%).

Table 13 *Pattern of transboundary movements between Annex VII countries and non-Annex VII countries for the period 2004 - 2006*

	Amount (tonnes)	Number of movements	Tonnes / movement	Share of amount
Annex VII to Annex VII	8,701,437	5,763	1,510	86%
Non Annex VII to Annex VII	173,340	291	596	2%
Non Annex VII to Non Annex VII	913,778	52	17,573	9%
Annex VII to Non Annex VII	336,308	31	10,849	3%
Total	**10,124,862**	**6,137**	**1,650**	**100%**

The table 13 also shows that the reported movements between Annex VII countries consist of a large number of relatively small movements. Reported movements between Annex VII countries and non-Annex VII countries consist of a limited number of relatively large movements. Exports of waste from non-Annex VII to Annex VII countries consist of a limited number of relatively small movements.

6 See Section 2.1 above (Definitions: Country groups according to wealth)

4 TRANSBOUNDARY MOVEMENTS

Transboundary movements

Table 14 shows the development of the transboundary movements over the reporting period.

Table 14 *Pattern of transboundary movements per year (amounts in tonnes)*

	2004	2005	2006	Change 04/06
Annex VII to Annex VII	7,901,517	8,136,444	10,066,349	27%
Non Annex VII to Annex VII	114,855	177,320	227,845	98%
Non Annex VII to Non Annex VII	1,201,169	736,841	803,323	-33%
Annex VII to Non Annex VII	570,391	283,667	154,866	-73%
Total	**9,787,932**	**9,334,272**	**11,252,383**	**15%**

In 2006, the total reported amount of movements increased by 15% as compared to 2004. This is mainly due to the increase in movements between Annex VII countries. The data also shows a significant increase of movements from non-Annex VII to Annex VII countries. Often these movements consist of lead acid batteries, Polychlorinated Biphenyl (PCB) wastes, pesticides and contaminated materials for which the non-Annex VII country does not have the appropriate treatment capacity.

Reported exports of wastes from Annex VII countries to non-Annex VII countries (those that would come under the Ban Amendment if it were to enter into force) are decreasing. The reported exports often consist of wastes defined as hazardous under national legislation (Article 1.1.b. wastes). Also exports of waste electrical and electronic equipment ('e-waste') are reported from Annex VII countries to non-Annex VII countries. Due to the limited number of exports of hazardous wastes reported by Parties, conclusions have to be drawn with caution. However, the data as reported does suggest that exports that would come under the Ban Amendment are limited in number, amount and seem to be decreasing.

The same trend applies to reported movements between non-Annex VII countries. The reported data show a decrease of transboundary movements over time, but this may also be due to under-reporting in 2006 where the number of non-Annex VII countries that submitted data is lower than in 2004. Much of the hazardous wastes transported between non-Annex VII countries are large bulk streams such as granulated blast furnace slag or gypsum from coal-fired power plants. These are wastes generated by a limited number of countries and they are exported to neighbouring countries for recovery of metals and inorganic materials. Lead and lead compounds are also moved in relatively large amounts between non-Annex VII countries. Most likely these are lead-acid batteries that are generated in a large number of non-Annex VII countries that do not have recycling facilities for the lead and that are recycled in a limited number of non-Annex VII countries. In particular, the Philippines recycles lead acid batteries from a number of Asian non-Annex VII countries and Venezuela plays the same role for a number of non-Annex VII countries in the Latin America and Caribbean region.

This pattern also reveals that over the three year period imports of wastes by non-Annex VII countries decreased every year and were 45% lower in 2006 than in 2004. The imports of wastes by Annex VII countries increased every year and were 28% higher in 2004 (see Figure 4).

It is still too early to make firm conclusions about trends because the number of reported movements (248) is relatively small and the reported amounts vary considerably per Party over the years. However, it seems that non-Annex VII countries receive less imports of hazardous wastes, in particular from Annex VII countries. At the same time the exports of hazardous wastes from non-Annex VII countries to Annex VII countries has increased.

One could assume that the conditions for environmentally sound management are more difficult to meet in non-Annex VII countries and therefore these trends, if confirmed in later years, would be positive for the environment.

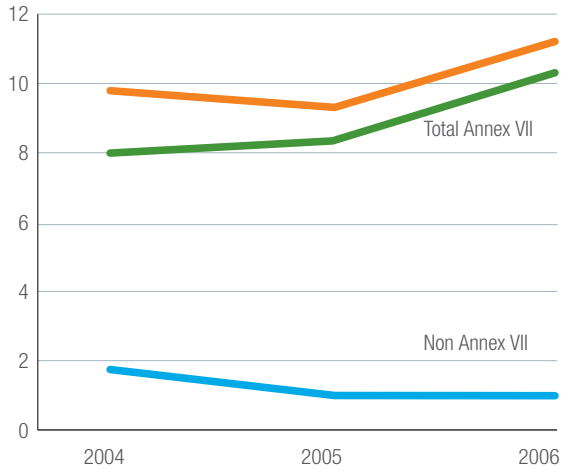
Currently, the reported imports by non-Annex VII countries only consist of a limited number of relatively large movements, therefore a more detailed analysis of these trends is difficult. If more information becomes available in the coming years, it would be interesting to analyze in more detail which waste streams are behind this trend, if confirmed.

Conclusion

The amount of hazardous wastes that is imported by non-Annex VII countries decreased by 45% in two years. The amount exported from these countries to Annex VII countries nearly doubled in the same period. This suggests that developing countries and countries with economies in transition have to treat smaller amounts of imported hazardous wastes and export more hazardous wastes, which they cannot treat themselves to industrialized countries that do have such treatment capacity.

The vast majority of transboundary movements (86% of the total amount) are between Annex VII countries and these amounts are increasing.

Figure 4 *Trend in imports by Annex VII and non-Annex VII countries (amounts in millions of tonnes)*



4 TRANSBOUNDARY MOVEMENTS

Transboundary movements

Regional groups of countries

The flows of hazourdous wastes between regions are illustrated in Figure 5[7]. The background data on the amounts are given in Annex 5.

These data show that 94% of transboundary movements remain within the same region and only a limited amount is exported outside the regions. However, there are notable differences between movements within these regions. The data suggest that in Africa, most wastes remain within the region. However, this is somewhat misleading. This outcome is dominated by the data in 2004 where there was a very large movement of contaminated stony material from Mozambique to South Africa. If this single movement is not taken into account, the majority of the movements of wastes originating from Africa are destined for OECD countries in Asia and Europe.

The pattern for non-OECD countries in America shows large fluctuations between the years. Over half of the wastes remain in the region, but large amounts are also exported to OECD countries in Asia. Relatively small amounts are exported to OECD countries in America.

The large extra-regional movements from Asian OECD countries to other Asian countries are dominated by the movements of blast furnace slag from Japan to Malaysia in 2004 and 2005. This was a total of 533,789 tonnes. Asian OECD countries would export only 5% of their wastes outside their region if these amounts were excluded.

Self-sufficiency of regions

One could see the flows of movements within the same region as an indication of the extent to which a region is capable of treating its own wastes that cannot be treated inside the country of origin itself. If the countries within a region are not self-sufficient in hazardous waste treatment individually, they may be as a region. The level of self-sufficiency is determined by the share of intra-regional movements. The data from Annex 5 were analyzed for this aspect and the results are given in Table 15.

In total, 94% of all reported exports of hazardous and other wastes in the period 2004 to 2006 was to countries within the same region. This shows that most cases of transboundary movements of hazardous and other wastes are to countries within a relatively short distance from the country of origin of the wastes. However, the data per region show large differences.

Europe is practically self-sufficient if one takes into account that a high proportion of the extra-regional movements from non-EU/OECD countries are to EU/OECD countries. The relatively large extra-regional exports of non-OECD American countries and OECD countries in Asia were explained in the previous section. The OECD countries in Oceania export relatively large amounts of wastes to OECD countries in Europe and Asia. Non-OECD countries in Oceania export all their wastes outside their region, mostly to Australia and New Zealand.

Table 15 *Self-sufficiency of regions (total period 2004 – 2006)*

Region	Intra regional movements	Extra regional movements
Africa	91%	9%
America OECD	96%	4%
America other	56%	44%
Asia OECD	24%	76%
Asia other	69%	31%
Europe EU/OECD	98%	2%
Europe other	88%	12%
Oceania OECD	32%	68%
Oceania other	0%	100%
Total	**94%**	**6%**

Figure 5 *Flows of hazardous wastes between regions*

Conclusion

Nearly all transboundary movements are within countries of the same region. Only 6% of the total amount of hazardous wastes is exported to countries outside the region of the country of origin of the wastes.

7 One could consider countries within the same continent that are now split between OECD/EU and non-OECD/EU countries from a geographical point of view are part of the same region. It was decided nevertheless to introduce this split because of the economic and political relevance of this distinction in the context of the Convention.

4 TRANSBOUNDARY MOVEMENTS
Transboundary movements

Table 16 *Patterns of transboundary movements according to the wealth class of the countries. Total amounts for 2004 – 2006 in tonnes.*

Origin \ Destination	High income OECD	High income non OECD	Upper middle income	Lower middle income	Low income	Total
High income OECD	7,888,915	26,614	639,030	56,934	37	8,611,529
High income non OECD	103,587	11,357	101,054	15,148	0	231,146
Upper middle income	380,381	17,885	353,370	34,764	72	786,471
Lower middle income	28,510	573	306,966	10,005	0	346,054
Low income	3,038	0	146,624	0	0	149,661
Total	**8,404,430**	**56,428**	**1,547,044**	**116,851**	**109**	**10,124,862**

Countries according to their wealth

Past history has borne witness to the dumping of hazardous wastes in developing countries. The reasons for such dumping include the poor enforcement structures in recipient countries and the economic benefits for the exporter. To see whether there is evidence from the data transmitted to the Secretariat of 'economic' dumping, the patterns of transboundary movements based on the wealth of the countries involved were studied. Table 16 provides an overview of such patterns for the period 2004 - 2006.

Table 16 shows that most wastes stay within the countries of the same economic class. There is one reported case of export of wastes from high income OECD countries to low income countries. This is an export of (non-hazardous) residues arising from industrial waste management from Belgium to Bangladesh in 2006.

Table 17 gives an overview per year of the amounts and the percentage of exports going to richer countries, countries in the same wealth category and to poorer countries.

This overview shows that the amount of wastes that are moved between countries within the same wealth category is over 80% - a statistic that increased between 2004 and 2006. The amounts that are exported to poorer countries are more or less stable and the amount exported to richer countries seems to decrease, although there are large fluctuations. Moreover, the amounts of wastes that are exported to richer and poorer countries are in the same order of magnitude. Therefore there are no strong indications that wastes are being exported systematically to poorer countries.

Import/export balance per wealth category

Instead of looking at imports and exports of hazardous and other wastes in isolation, one can also look into the balance between the two flows to identify if there are groups that are net importers or net exporters. Table 18 provides the results of this analysis.

If one looks at the import/export balance of the countries in the different wealth classes, the most remarkable issue is that all wealth categories of countries export more than they import, apart from the upper-middle income countries. This is predominantly due to the high import surplus in Belarus, Malaysia and South Africa. High income OECD countries do have higher exports than imports in 2004 and 2005. However, in 2006 the balance is reversed and this group of countries becomes a net importer.

Table 17 *Trends of transfer of wastes between countries of different wealth classes (amounts in tonnes)*

Export to	2004	%	2005	%	2006	%	Average 2004 - 2006	Change 04 - 06
Poorer countries	856,164	9%	879,905	9%	805,047	7%	847,039	-6%
Same wealth category	7,714,443	79%	7,963,133	85%	9,503,969	84%	8,393,848	23%
Richer countries	1,217,325	12%	491,235	5%	943,367	8%	883,976	-23%
Total	**9,787,932**	**100%**	**9,334,272**	**100%**	**11,252,383**	**100%**	**10,124,862**	

Table 18 *Import/export balance per wealth category of countries. Average amounts for 2004 – 2006 in tonnes.*

Wealth category	Export	Import	Balance
High income OECD	8,611,529	8,404,430	-207,099
High income nonOECD	231,146	56,428	-174,718
Upper middle income	786,471	1,547,044	760,573
Lower middle income	346,054	116,851	-229,203
Low income	149,661	109	-149,553
Total	**10,124,862**	**10,124,862**	**0**

Treatment of wastes according to wealth categories of the countries

The way wastes are treated also differs according to the different wealth categories. This is illustrated in Table 19.

In high income OECD countries, approximately 80% of imported and exported wastes are recovered. This also applies to exports by high income non OECD countries. These countries only import wastes for recovery. Transboundary movements for upper-middle and lower-middle income countries is almost exclusively for recovery operations. Low income countries export 85% of their wastes for recovery operations and 15% for final disposal operations, however they only import wastes for recovery. This shows that only high income OECD countries accept significant

5 HAZARDOUS WASTE BALANCES

Hazardous waste balances

amounts of hazardous wastes for final disposal. All other categories of countries are involved in recovery operations, and accept in rare occasions wastes for final disposal operations. These exceptional cases include South Africa, which occasionally accepts hazardous wastes for final disposal operations from its low income neighbouring countries, and Poland which accepted some hazardous wastes from Germany for incineration.

Table 19 *Percentage of imported and exported wastes as treated in the country of destination. Data for the total period 2004 – 2006.*

category	Export		Import	
	Final disposal	Recovery	Final disposal	Recovery
High income OECD	21%	79%	22%	78%
High income non OECD	22%	78%	0%	100%
Upper middle income	1%	99%	2%	98%
Lower middle income	0%	100%	0%	100%
Low income	15%	85%	0%	100%
Total	**19%**	**81%**	**19%**	**81%**

Conclusion

There are no indications in the reported data of a systematic transfer of hazardous wastes from richer countries to poorer countries. Only the countries in the group of upper middle income countries show a net import of hazardous wastes, while all other groups of countries are net exporters. Only high income OECD countries accept imports of significant amounts of hazardous wastes for final disposal, while all other countries mostly import hazardous wastes for recovery purposes.

The treatment of hazardous and other wastes may take place in the country of generation or may be transported to a treatment facility in another country. The Secretariat receives information both on the generation and the transboundary movements of wastes. By combining this information, one can establish the hazardous wastes "balances" of Parties. Such a balance can be calculated on the basis of the following formula:

Quantity generated + Quantity imported – Quantity exported = Quantity of wastes treated within the national jurisdiction

Based upon this balance, one can calculate the share of export. This is calculated as the quantity of wastes exported divided by the quantity of wastes generated. This indicator gives an impression of the order of magnitude of export. In the previous sections, countries were mentioned as being 'top' exporters if they export large quantities of wastes. However, it is clear that larger Parties which generate significant quantities of wastes may export more than smaller Parties. The situation of a country might be assessed differently if a 'large exporter' happens to export 5% of the hazardous wastes generated inside the country compared to a 'small exporter' that exports all hazardous wastes that is generated and has no treatment capacity whatsoever.

This "hazardous wastes balance" has therefore been calculated for those Parties where the dataset permitted. Since the figures for generation of wastes only take into account hazardous wastes, transboundary movements of other wastes (e.g. household wastes and residues from incineration of household wastes) were not included. The data were calculated for 2006 or for the latest year for which data on the generation of waste was available.

Please note that in some cases the net export amount exceeds the reported amount of wastes that is generated. This may be due to previous stockpiling of wastes or due to inconsistencies in the data as reported by the Party.

The Parties included in Table 20 report that nearly 97% of wastes generated stays within the country. If the data for Kazakhstan is not included (see reasons stated in Section 2) this would be 94%. This shows that the vast majority of the hazardous wastes generated in these Parties is therefore treated within the country of origin of the wastes.

The data in the Table 20 above also shows that for the 66 Parties for which it was possible to calculate the import/export balance, 38 are net states of export, 18 are net states of import and for 10 Parties no transboundary movements are recorded at all. A number of Parties export more than 90% of the wastes they generate. These Parties are listed in Table 21, which also includes the 10 Parties that have the largest amounts of net imports and exports.

Table 20 *Hazardous wastes balance. Amounts in tonnes*

Party	Generation hazardous wastes	Import	Export	Import / export balance	Treatment within the country	Share export	Year
Algeria	325,000	0	477	-477	324,523	0%	2006
Andorra	936	0	1,147	-1,147	0	100%	2006
Argentina	151,923	0	22	-22	151,901	0%	2006
Armenia	513,258	0	0	0	513,258	0%	2004
Australia	3,258,266	909	52,374	-51,465	3,206,801	2%	2006
Austria	838,646	81,462	309,514	-228,052	610,594	37%	2006
Azerbaijan	13,000	591,374	241	591,134	604,134	2%	2005
Bahrain	38,740	0	0	0	38,740	0%	2006
Belarus	2,733,536	600,223	4,178	596,045	3,329,581	0%	2006
Belgium	2,711,176	779,021	720,658	58,363	2,769,539	27%	2006

5 HAZARDOUS WASTE BALANCES

Hazardous waste balances

Table 20 *Hazardous wastes balance. Amounts in tonnes*

Party	Generation hazardous waste	Import	Export	Import / export balance	Treatment within the country	Share export	Year
Bosnia and Herzegovina	4,447	0	4,610	-4,610	0	100%	2006
Brunei Darussalam	30	0	14	-14	16	47%	2006
Bulgaria	1,158,936	9,300	10,542	-1,242	1,157,694	1%	2005
Chile	6,091	0	10,620	-10,620	0	100%	2006
China	10,840,000	100,286	10,056	90,230	10,930,230	0%	2006
Costa Rica	1,245	0	2,081	-2,081	0	100%	2006
Croatia	39,879	0	51,068	-51,068	0	100%	2006
Cuba	1,253,673	0	0	0	1,253,673	0%	2006
Cyprus	50,443	0	2,588	-2,588	47,855	5%	2006
Czech Republic	1,455,000	3,905	2,284	1,621	1,456,621	0%	2006
Denmark	423,807	129,607	234,047	-104,440	319,367	55%	2006
Dominican Republic	9,390	0	4,199	-4,199	5,191	45%	2005
Ecuador	146,606	0	0	0	146,606	0%	2006
Equatorial Guinea	1,288	0	0	0	1,288	0%	2005
Estonia	6,763,532	9,889	1,425	8,465	6,771,997	0%	2006
Ethiopia	1,043	0	0	0	1,043	0%	2004
Finland	1,129,299	11,785	94,114	-82,328	1,046,971	8%	2006
France	6,748,000	813,012	423,119	389,892	7,137,752	6%	2004
Germany	18,529,000	2,418,156	993,125	1,425,030	19,954,030	5%	2006
Greece	333,155	1,186	4,079	-2,893	330,262	1%	2006
Hungary	796,104	163,366	19,775	143,591	939,695	2%	2006
Ireland	720,976	17	309,961	-309,944	411,032	43%	2006
Israel	328,400	10,389	1,543	8,846	337,246	0%	2006
Italy	5,906,000	1,334,861	596,386	738,474	6,644,474	10%	2005
Kazakhstan	146,111,000	143,332	616	142,717	146,253,717	0%	2004
Kiribati	82	0	2	-2	81	2%	2006
Kyrgyzstan	6,409,968	157	17,000	-16,843	6,393,125	0%	2004
Latvia	45,047	129	5,034	-4,906	40,141	11%	2006
Lithuania	43,714	106	51,525	-51,419	0	100%	2004
Luxembourg	90,810	3,574	100,177	-96,603	0	100%	2006
Malaysia	1,103,457	172,151	5,511	166,640	1,270,097	0%	2006
Malta	1,346	0	3,320	-3,320	0	100%	2006
Mauritius	580,000	0	0	0	580,000	0%	2004
Mexico	8,000,000	470,476	544,419	-73,943	7,926,057	7%	2006
Monaco	451	0	416	-416	35	92%	2006

The overview shows that, with the exception of Luxembourg, none of the large net states of export export a significant proportion of their hazardous wastes. The countries that export significant proportions of their wastes have two characteristics. Either they are wealthy countries that are too small to have specific treatment capacity for certain waste streams, as is the case for Andorra, Luxembourg, Malta and Monaco. Or, others are less developed countries that have been unable to develop their own treatment capacity, as may be the case for Chile and Costa Rica. For Bosnia and Herzegovina, Croatia and Lithuania, the lack of treatment capacity may be due to historical reasons as these Parties previously depended on larger federations of which they were part for the treatment of their wastes, namely the former Socialist Federal Republic of Yugoslavia and the former Union of Soviet Socialist Republics (USSR).

5 HAZARDOUS WASTE BALANCES

Hazardous waste balances

Table 20 *Hazardous wastes balance. Amounts in tonnes*

Party	Generation hazardous waste	Import	Export	Import / export balance	Treatment within the country	Share export	Year
Morocco	131,000	0	280	-280	130,720	0%	2006
Mozambique	353,294	0	0	0	353,294	0%	2006
Netherlands	5,299,821	829,921	1,453,510	-623,589	4,676,232	27%	2006
Norway	1,020,000	154,093	89,363	64,730	1,084,730	9%	2006
Poland	1,811,726	15,866	10,402	5,463	1,817,189	1%	2006
Portugal	287,617	111	98,512	-98,401	189,216	34%	2005
Qatar	36,235	0	0	0	36,235	0%	2006
Republic of Korea	3,659,646	295,480	1,299	294,181	3,953,827	0%	2006
Republic of Moldova	7,426	0	0	0	7,426	0%	2006
Romania	1,052,815	0	16,045	-16,045	1,036,770	2%	2006
Russian Federation	26,357,800	65,110	230,077	-164,968	26,192,833	1%	2004
Singapore	413,000	205	191,800	-191,595	221,405	46%	2006
Slovakia	666,645	3,500	18,813	-15,313	651,332	3%	2006
Slovenia	90,909	22,902	27,016	-4,114	86,795	30%	2006
Spain	3,228,248	168,098	37,201	130,897	3,359,145	1%	2006
Sri Lanka	57,889	0	6,000	-6,000	51,889	10%	2006
Sweden	2,777,000	152,644	159,510	-6,866	2,770,134	6%	2006
Turkey	1,120,000	3,425	197	3,228	1,123,228	0%	2004
Ukraine	2,370,900	421	261,184	-260,763	2,110,137	11%	2006
United Kingdom	6,037,068	117,539	155,576	-38,037	5,999,031	3%	2006
Zambia	10,622	0	2	-2	10,620	0%	2006
Total	**286,406,361**	**9,677,989**	**7,349,052**				

Table 21 *Top 10 Parties importing and exporting large net amounts of hazardous wastes and Parties that export more than 90% of the hazardous wastes that is generated domestically.*

Rank	Large net importers	Large net exporters	Largest share export
1	Germany	Netherlands	Luxembourg
2	Italy	Ireland	Lithuania
3	Belarus	Ukraine	Croatia
4	Azerbaijan	Austria	Chile
5	France	Singapore	Bosnia and Herzegovina
6	Republic of Korea	Russian Federation	Malta
7	Malaysia	Denmark	Costa Rica
8	Hungary	Portugal	Andorra
9	Kazakhstan	Luxembourg	Monaco
10	Spain	Finland	-

Conclusion

Based upon data from 66 Parties, it can be concluded that approximately 95% of the amount of hazardous wastes generated by these Parties is treated without transboundary movements. Nine Parties exported more than 90% of the hazardous wastes they generated. These Parties are, in most cases, small countries or countries that, in recent history, have become independent from larger federal states.

6 CONCLUSIONS
Conclusions

The dataset as put together by the Secretariat of the Basel Convention based upon national reports covering the years 2004 to 2006 contains important information on global trends in generation and transboundary movements of hazardous wastes and other wastes. The dataset is however not complete and only covers reports on transboundary movements of controlled wastes as required under Article 13 of the Convention, excluding illegal traffic movements, for which there is no reporting obligation. Furthermore, not all Parties have transmitted data on generation and transboundary movements of hazardous and other wastes. In particular, data on generation of wastes is insufficient to estimate amounts generated on a global scale. The 66 Parties that reported information on the generation of hazardous wastes represent 40% of the world's population and 60% of the size of the global economy. Due to the large differences in national definitions of hazardous wastes, reporting systems and other factors these data cannot be used to estimate of the total amount of hazardous wastes that is generated globally. The reported data on transboundary movements give a rather good picture of the amounts on a worldwide scale. Even though the number of Parties that report does not increase, data from Parties that report also include transboundary movements to and from countries that did not report this information themselves.

By analyzing the dataset, a number of important conclusions can be drawn, as follows.

1. Generation of hazardous wastes
The amount of hazardous wastes generated in 43 Parties that reported for all three years increased 12% between 2004 and 2006. However, the trend is dominated by developments in a very limited number of Parties. The trend is not the same for all groups of countries. The high income non-OECD countries and low income countries show a decrease of the amount of hazardous wastes generated.

2. Generation of other wastes
The amount of household wastes generated by 21 Parties that reported for all three years showed a modest increase of 3% between 2004 and 2006. There are large differences between Parties and the trend may be influenced by changes in definitions and reporting systems of the Parties that reported these data. There is too little information on generation of residues arising from the incineration of household wastes to provide for a meaningful analysis of these data.

3. Trends in total amount of transboundary movements
Reported amounts of transboundary movements of hazardous wastes show an increase of 22% between 2004 and 2006. This is mainly due to the increase for wastes defined as hazardous under national legislation (Article 1.1.b of the Convention). Transboundary movements of hazardous wastes as defined under Article 1.1.a of the Convention show an increase of only 4% in the same period. Transboundary movements of 'other wastes' are decreasing.

In total, on average over 10 million tonnes of wastes were imported annually by in total 64 countries in the period 2004 – 2006. The top 10 states of import accepted 80% of the total imports. This amount was exported by 126 countries and the top 10 states of export generated nearly 70% of these exports.

The most frequently exported wastes are wastes defined as hazardous under national legislation (Article 1.1.b waste). Also wastes from industrial waste disposal operations, lead and zinc compounds were exported in large quantities. Parties do, however, report on the type of wastes in an inaccurate and non-harmonized way and it is not possible to derive firm conclusions based on such reported information.

4. Movements between Annex VII countries (industrialized countries) and non-Annex VII countries (developing countries and countries with economies in transition)
The amount of hazardous wastes that is imported by non-Annex VII countries decreased by 45% in two years, whilst the amount exported from these countries to Annex VII countries nearly doubled in the same period. This suggests that developing countries and countries with economies in transition have to treat smaller amounts of imported hazardous wastes and export more hazardous wastes, which they cannot treat themselves, to industrialized countries that have such treatment capacity.

The vast majority of transboundary movements (86% of the total amount) are between Annex VII countries and the amounts are increasing.

5. 1. Hazardous characteristics of wastes moved
The information on hazardous characteristics can be used to determine if the wastes that are subject to transboundary movements are hazardous or not. Parties do not report in a harmonized way on the exact nature of the hazardous characteristics of the wastes in question, therefore it is not possible to derive firm conclusions based on such reported information.

6. Intra- and extra regional transboundary movements
Nearly all transboundary movements are between countries within the same region. Only 6% of the total amount of hazardous wastes is exported to countries outside the region of the country of generation.

7. Movements between poor and rich countries
There are no indications in the reported data of systematic transboundary movements of hazardous wastes from richer countries to poorer countries. Only the countries in the group of upper middle income countries (the group between rich and poor countries) reported net imports of hazardous wastes, while all other groups of countries are net exporters.

Only high income OECD countries accept imports of significant amounts of hazardous wastes for final disposal operations, while all other countries nearly exclusively import hazardous wastes for recovery operations purposes.

8. National balances of hazardous wastes generation and treatment
Based upon data from 66 Parties, it can be concluded that approximately 95% of the amount of hazardous wastes generated by these Parties is treated within their own country. Nine Parties exported more than 90% of the hazardous wastes they generated. These are in most cases small countries or countries that in recent history have become independent from larger federal states (e.g. countries that were previously part of the former Socialist Federal Republic of Yugoslavia and the former Union of Soviet Socialist Republics (USSR)).

The analysis therefore shows that, on a number of issues addressed by the Convention, progress can be seen. Progress is particularly evident in relation to the following points:

7 ACKNOWLEDGMENTS

Acknowledgments

- Transboundary movements are increasing, but the vast majority of hazardous wastes and other wastes are still treated without recourse to transboundary movements. Furthermore, if wastes are exported they stay in most cases within the same geographical region - in line with the principle of reducing to the minimum transboundary movements of hazardous and other wastes;

- Most of the wastes that are moved across borders are moved for operations to recover, recycle, reclaim, make direct re-use or alternative use of the wastes concerned. From the information available, it appears that presently only high income OECD countries allow significant amounts of hazardous wastes to be imported for final disposal operations. It may be assumed that these countries can treat these wastes in an environmentally sound manner.

- Imports of hazardous wastes by developing countries and countries with economies in transition are decreasing and exports from those countries to developed countries, where it is assumed these wastes can be treated in an environmentally sound manner, are increasing. Even though the ban on export of hazardous wastes from developed countries to developing countries adopted by the Conference of the Parties to the Basel Convention has not yet entered into force, such transboundary movements are already decreasing. The trends observed may, at least partly, be caused by underreporting by Parties.

There are also areas where further progress may be needed.

- Continuous effort should be made to encourage Parties to transmit their national reports, to improve the quality and comparability of data in such reports.

- The quantitative information about transboundary movements is satisfactory, but more information will be needed about the quality of treatment in the countries of destination to be able to judge if the goal of environmentally sound management of all hazardous wastes is being achieved.

- More information on illegal movements should be made available and this information should be analyzed more systematically to detect other areas of implementation where improvement could be made.

This report is based on the data as transmitted by Parties to the Secretariat. The Secretariat has engaged considerable efforts to encourage and stimulate Parties to transmit data and to seek clarification where necessary. Also considerable efforts have been made to assure comparability of data.

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Finally it should be mentioned that the graphic design and the layout of the report have been prepared by SO! Agency, Brussels, Belgium.

ANNEX 1
Quality of the data on transboundary movements

Data from the Secretariat are the best available data to analyze patterns of transboundary movements of hazardous wastes. However, a number of aspects of these data have to be taken into account when analyzing them. The main issues are:

- not all countries transmit national annual reports;
- differences in definitions of hazardous wastes;
- differences in national reporting systems.

Not all countries transmit national annual reports

There are two reasons why the data held by the Secretariat are incomplete. Firstly, not all Parties to the Convention fulfil their reporting obligations or transmit data every year. Secondly, countries not Party to the Convention are not obliged to and do not report their transboundary movements to the Secretariat.

The best way to remediate this under-reporting is to compare and combine data reported on imports and exports from the Parties that provided information. If all Parties would report on transboundary movements, all movements would be reported twice: once by the state of export and once by the state of import. This double reporting could be used to fill the gaps that are present because certain Parties and non-Parties did not report data. e.g. information about transboundary movements between the United Sates of America and Canada could be obtained from the report of Canada. Even though the United States of America does not provide this information, the data are available in the dataset provided by Canada.

When comparing data from reported imports with those from reported exports it is clear that these data do not match. Differences of more than 20% in the reported datasets are common. This is partly due to the fact that not all countries reported their data (see above). For example, if country A did report and country B did not there may be differences if the transboundary movements between the two countries are not in balance. If country A imports 1 million tonnes of wastes from country B and exports 0.5 million tonnes of wastes to that country, the difference between import and export data in the dataset of the Secretariat will be 0.5 million tonnes. As mentioned above, the best way to remediate this is to compare and combine data reported on imports and exports. This will however, not totally remove discrepancies. The other reasons for discrepancies are the differences in national definitions of hazardous wastes and differences in reporting systems.

Differences in national definitions of hazardous wastes

The Convention contains a definition of hazardous wastes that is not fully harmonized. Article 1.1.a is the harmonized part of the definition and is based on categories of wastes contained in Annex I exhibiting characteristics of Annex III of the Convention.

This Article and related Annexes are further elaborated by Annexes VIII and IX with the lists of wastes for the Convention. Article 1.1.b indicates that any other wastes defined as or considered to be hazardous in national legislation are also hazardous wastes for the Convention. This is the non-harmonized part of the definition of hazardous wastes in the Convention.

When Parties report on transboundary movements of hazardous wastes they should also report on transboundary movements of wastes that are hazardous according to Article 1.1.b. The other countries involved in transboundary movements of these wastes may not always report on these movements as the wastes may not be hazardous under their national legislation

Reporting systems as applied by Parties

Two aspects are highlighted: control of transboundary movements of non hazardous wastes and the point of measurement of the amounts of wastes subject to transboundary movements.

1. Non hazardous wastes within the control system

In certain countries the prior informed consent procedure for transboundary movements of wastes is not only applied to hazardous wastes, but also to certain non-hazardous wastes. The notion of 'controlled wastes' in these countries is wider than the notion of 'hazardous wastes' under the Convention. Not all Parties that reported their data to the Secretariat have dealt with this issue in the same manner. The most notable example is the case of the Netherlands and Germany in the 2006 data. The data provided by the Netherlands show export of hazardous wastes to Germany that is 1,6 million tonne larger than the reported imports by Germany of hazardous wastes imported from the Netherlands. However, apart from imports of hazardous wastes, Germany also reports on additional imports of 1,6 million tonnes of controlled non-hazardous wastes from the Netherlands. The Secretariat puts the data of controlled non-hazardous wastes in a separate table with the end-notes for the data, but does not include them in the dataset of transboundary movements of hazardous wastes. This implies that the data from Germany and the Netherlands correspond to the same amount, but they are reported differently by the two Parties. The main waste streams Germany excluded from its report are:

- wood from construction and demolition sites; and
- sewage sludge from urban waste water treatment plants

Both waste streams are typically non-hazardous wastes, both in the Netherlands and in Germany. Their transboundary movements however, requires notification under the EU Waste Shipment Regulation[7]. Regarding this particular aspect, reporting with a distinction between hazardous wastes and controlled non-hazardous wastes clarifies the information provided in line with the requirements of the Convention.

2. Amounts reported

Within the control system of hazardous wastes there are several possibilities to report on the amount of wastes that were subject to transboundary movements, e.g.:

- amounts notified;
- amounts exported or imported;
- amounts treated.

The differences between the amounts one would find may be quite different depending on the nature of the amounts that are reported. In particular, the amounts of wastes notified may be much larger than the amounts that are imported or exported in reality. Economic operators may wish to include a certain degree of flexibility when notifying their shipments in order to avoid having to do another notification when the amounts would exceed their expectations at the time of preparing the notification. In addition, information on the amounts that are treated at the installation in the country of destination are not always known by the authorities involved. It cannot be excluded that different authorities report different types of quantitative data within the reporting system under the Basel Convention.

8 European Union Regulation No 1013/2006 of 4 June 2006, on shipments of wastes, as amended

ANNEX 2

Generation of hazardous wastes as reported by Parties

All amounts in tonnes

		2004			2005			2006			
Party	Classification	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Change total hazardous waste generation 04 / 06
Algeria	Upper middle income	222,813		222,813	221,802		221,802	325,000		325,000	46%
Andorra	High income: non-OECD	426		426	622		622	936		936	120%
Argentina	Upper middle income	88,587		88,587	115,065		115,065	151,923		151,923	71%
Armenia	Lower middle income	513,258		513,258							
Australia	High income: OECD	881,085		881,085	1,169,625		1,169,625	3,258,266		3,258,266	270%
Austria	High income: OECD	967,458		967,458	856,902		856,902	838,646		838,646	-13%
Azerbaijan	Lower middle income				13,000		13,000				
Bahrain	High income: non-OECD	33,006		33,006	38,202		38,202	38,740		38,740	17%
Belarus	Upper middle income	125,541	1,733,499	1,859,040	120,209	1,982,355	2,102,564	122,442	2,611,094	2,733,536	47%
Belgium	High income: OECD	892,236	1,904,564	2,796,800	880,108	1,921,773	2,801,881	1,034,932	1,676,244	2,711,176	-3%
Bosnia and Herzegovina	Upper middle income	6,560		6,560	6,660		6,660	4,447		4,447	-32%
Brunei Darussalam	High income: non-OECD	120		120	15		15	30		30	-75%
Bulgaria	Upper middle income	526,079		526,079	1,158,936		1,158,936				
Chile	Upper middle income							6,091		6,091	
China	Lower middle income	9,950,000		9,950,000	11,620,000		11,620,000	10,840,000		10,840,000	9%
Costa Rica	Upper middle income	1,063		1,063	551		551	1,245		1,245	17%
Croatia	High income: non-OECD	42,280		42,280	39,456		39,456	39,879		39,879	-6%

■ In red: amounts as estimated by the Parties.

ANNEX 2

Generation of hazardous wastes as reported by Parties

		2004			2005			2006			
Party	Classification	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Change total hazardous wastes generation 04 / 06
Cuba	Upper middle income	613,836		613,836	941,389		941,389	1,253,673		1,253,673	104%
Cyprus	High income: non-OECD				32,719		32,719	50,443		50,443	
Czech Republic	High income: OECD			1,693,307			1,626,204			1,455,000	-14%
Denmark	High income: OECD	191,803	182,613	374,416	179,543	206,955	386,498	213,055	210,752	423,807	13%
Dominican Republic	Upper middle income	2,887		2,887	9,390		9,390				
Ecuador	Lower middle income	159,296		159,296	196,844		196,844	146,606		146,606	-8%
Equatorial Guinea	High income: non-OECD				1,288		1,288				
Estonia	High income: non-OECD			7,244,748			7,015,908			6,763,532	-7%
Ethiopia	Low income	1,043		1,043							
Finland	High income: OECD			1,234,695			1,125,300			1,129,299	-9%
France	High income: OECD		6,748,000	6,748,000							
Germany	High income: OECD			18,401,000			18,457,000			18,529,000	1%
Greece	High income: OECD			335,000			333,155			333,155	-1%
Hungary	High income: OECD	523,577	439,131	962,708	460,274	460,274	920,548	398,052	398,052	796,104	-17%
Ireland	High income: OECD	673,631		673,631	534,199		534,199	720,976		720,976	7%
Israel	High income: non-OECD	274,835		274,835	316,200		316,200	328,400		328,400	19%
Italy	High income: OECD			5,348,844			5,906,000				

■ In red: amounts as estimated by the Parties.

ANNEX 2

Generation of hazardous wastes as reported by Parties

		2004			2005			2006			
Party	Classification	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Change total hazardous wastes generation 04 / 06
Kazakhstan	Upper middle income	146,111,000		146,111,000							
Kiribati	Lower middle income							82		82	
Kyrgyzstan	Low income	6,409,968		6,409,968							
Latvia	Upper middle income	27,488		27,488	27,934		27,934	45,047		45,047	64%
Lithuania	Upper middle income	43,714		43,714							
Luxembourg	High income: OECD	97,056		97,056	79,525		79,525	90,810		90,810	-6%
Malaysia	Upper middle income	303,616	165,968	469,584	452,000	96,916	548,916	615,032	488,425	1,103,457	135%
Malta	High income: non-OECD	379		379	1,263		1,263	1,346		1,346	255%
Mauritius	Upper middle income	580,000		580,000							
Mexico	Upper middle income							8,000,000		8,000,000	
Monaco	High income: non-OECD	642		642	460		460	451		451	-30%
Morocco	Lower middle income				131,000		131,000	131,000		131,000	
Mozambique	Low income	422,550		422,550	422,550		422,550	341,768	11,526	353,294	-16%
Netherlands	High income: OECD	1,892,896	194,734	2,087,630	4,430,952	77,728	4,508,680	5,173,906	125,915	5,299,821	154%
Norway	High income: OECD	860,000		860,000	875,000		875,000	1,020,000		1,020,000	19%
Poland	Upper middle income	1,241,290	99,539	1,340,829	1,615,254	163,621	1,778,875	1,688,529	123,197	1,811,726	35%
Portugal	High income: OECD	195,318	76,313	271,631	199,950	87,667	287,617				
Qatar	High income: non-OECD							36,235		36,235	

ANNEX 2

Generation of hazardous wastes as reported by Parties

		2004			2005			2006			
Party	Classification	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Article1.1.a wastes (Annex I: Y1-Y45)	Article1.1.b wastes	Total	Change total hazardous wastes generation 04 / 06
Republic of Korea	High income: OECD	2,275,958	656,463	2,932,421	2,381,421	770,232	3,151,653	2,621,547	1,038,099	3,659,646	25%
Republic of Moldova	Lower middle income	7,811		7,811	7,897		7,897	7,426		7,426	-5%
Romania	Upper middle income	2,263,480		2,263,480	1,733,973		1,733,973	1,052,815		1,052,815	-53%
Russian Federation	Upper middle income	26,357,800		26,357,800							
Singapore	High income: non-OECD	278,000		278,000	339,000		339,000	413,000		413,000	49%
Slovakia	High income: OECD	978,274	42,927	1,021,201	675,545	18,927	694,472	533,774	132,871	666,645	-35%
Slovenia	High income: non-OECD	83,962		83,962	84,479		84,479	90,909		90,909	8%
Spain	High income: OECD	3,181,738		3,181,738	3,112,187		3,112,187	3,228,248		3,228,248	1%
Sri Lanka	Lower middle income	40,617		40,617	57,889		57,889	57,889		57,889	43%
Sweden	High income: OECD	1,354,000		1,354,000				2,777,000		2,777,000	105%
Turkey	Upper middle income	1,120,000		1,120,000							
Ukraine	Lower middle income	2,420,300		2,420,300	2,411,800		2,411,800	2,370,900		2,370,900	-2%
United Kingdom	High income: OECD	5,153,108		5,153,108	4,120,129		4,120,129	6,037,068		6,037,068	17%
Zambia	Low income				57,000		57,000	10,622		10,622	
Total		**220,392,385**	**12,243,751**	**266,893,730**	**42,130,207**	**5,786,448**	**82,380,222**	**56,119,186**	**6,816,175**	**91,145,347**	

■ In red: amounts as estimated by the Parties.

ANNEX 3

Generation of household wastes (Y46) as reported by Parties

All amounts in tonnes

Party	2004	2005	2006	Remark
Albania	622,400	633,590	622,400	
Andorra	38,465	38,520	38,961	
Australia	1,224			limited number of states
Austria	1,382,600			municipal waste
Azerbaijan		7,300,000		
Bahrain	318,068	306,203	312,983	
Belarus	3,954,600	3,181,282	3,484,000	including industrial wastes
Bolivia		814,511		
Bulgaria	3,092,000	3,237,000		
Chad		2,920,000		
China	256,224	278,913	286,358	only for Macao, Special Administrative Region of China
Cuba	3,100,900	3,990,000	4,518,125	
Cyprus		540,000	600,000	
Czech Republic	4,651,962	4,439,098	3,979,000	
Denmark		3,337,000	3,298,000	
Ecuador	5,777,000	2,132,000		
Estonia	460,327	457,323		
Finland	2,374,000	2,449,559		municipal waste
France	32,250,000			
Greece	4,781,468	4,853,000	4,927,137	
Hungary	3,057,264	3,828,451	3,086,384	
Ireland	1,510,042	1,543,468	1,773,242	municipal waste
Italy	30,034,000		32,522,650	municipal waste
Kazakhstan	3,781,000			
Latvia	593,294	764,371	1,420,459	
Lithuania	1,031,478			
Malta			252,662	
Mauritius	381,204			
Monaco	58,433	57,427	42,250	
Morocco		6,500,000	6,500,000	
Mozambique		730,000	1,022,000	
Netherlands	5,397,100	4,957,856	4,550,000	
Norway	1,746,000	1,844,000	1,940,000	
Poland	6,768,000	9,057,000		
Qatar			2,287,167	
Republic of Korea	18,252,555	17,665,270	17,828,060	
Republic of Moldova	430,000	607,000	321,615	
Romania	5,160,980		5,064,334	
Singapore	2,482,600	2,548,800	2,563,600	
Slovakia	1,475,122	1,558,263	1,623,306	
Slovenia	594,361	608,479	623,188	
Spain	22,735,142	23,549,390	23,648,032	municipal waste
Sweden	4,459,000		4,500,220	
Thailand	1,808,000	1,813,500		
Tunisia	1,293,106	1,318,968	2,000,000	
Ukraine		14,045,000		
Zambia		3,000,000	2,000,000	
Total	**176,109,919**	**136,905,242**	**137,636,133**	

ANNEX 4
Import and export of wastes per country and area (Parties and non-Parties)

Amounts imported (in tonnes)

Country of destination	Status	2004	2005	2006	Average 2004 - 2006
Albania	non Annex VII	588			196
Australia	Annex VII	6,110	22,378	909	9,799
Austria	Annex VII	50,732	50,529	93,579	64,947
Azerbaijan	non Annex VII		4,483		1,494
Bangladesh	non Annex VII			110	37
Belarus	non Annex VII	534,659	591,374	600,223	575,419
Belgium	Annex VII	1,195,328	805,643	801,655	934,209
Bosnia and Herzegovina	non Annex VII		35		12
Brazil	non Annex VII	434		867	434
Bulgaria	non Annex VII	47,760	9,300	8,075	21,712
Canada	Annex VII	416,136	52,708	460,329	309,725
China	non Annex VII	20,251	925	100,286	40,487
Croatia	non Annex VII		868		289
Czech Republic	Annex VII	2,883	2,481	3,905	3,090
Denmark	Annex VII	91,374	110,749	130,514	110,879
Estonia	Annex VII	4,721	9,360	9,889	7,990
Finland	Annex VII	17,645	17,890	16,237	17,257
France	Annex VII	824,310	928,649	440,465	731,141
Germany	Annex VII	2,341,773	2,569,801	2,789,190	2,566,921
Greece	Annex VII	10,414	2,717	1,186	4,772
Hong Kong - Special Administrative Region of China	non Annex VII		687	2,180	956
Hungary	Annex VII	127	17,300	163,366	60,264
India	non Annex VII	17,288	667	14,864	10,939
Indonesia	non Annex VII	17			6
Ireland	Annex VII	439	3	17	153
Israel	non Annex VII	5,811	5,362	10,389	7,187
Italy	Annex VII	830,342	1,334,861	1,652,473	1,272,559
Japan	Annex VII	3,971	5,419	4,314	4,568
Kazakhstan	non Annex VII	143,332			47,777
Kyrgyzstan	non Annex VII	157			52
Latvia	Annex VII	36	55	129	73
Lithuania	Annex VII	106		553	220
Luxembourg	Annex VII	1,321	1,866	3,574	2,254
Malaysia	non Annex VII	354,390	306,646	172,151	277,729
Mexico	Annex VII	302,044	510,127	470,476	427,549
Monaco	non Annex VII	18,720	17,058	9,106	14,961
Netherlands	Annex VII	329,234	331,134	834,862	498,410
New Zealand	Annex VII	13,494	13,228	12,992	13,238
Norway	Annex VII	230,504	233,951	197,695	220,717
Pakistan	non Annex VII	673	1,798	1,350	1,273
Peru	non Annex VII	22,063			7,354
Philippines	non Annex VII	36,036	29,590	14,384	26,670
Poland	Annex VII	4,658	7,759	15,866	9,428
Portugal	Annex VII	390	111		167
Republic of Korea	Annex VII	26,049	168,430	295,618	163,366
Russian Federation	non Annex VII	65,110			21,703
Singapore	non Annex VII	1,698	162	205	688
Slovakia	Annex VII	681	1,218	3,500	1,800
Slovenia	Annex VII	25,610	23,159	22,902	23,891
South Africa	non Annex VII	422,550	1,555	1,447	141,851
Spain	Annex VII	201,925	206,099	179,378	195,801
Sweden	Annex VII	278,121	277,587	236,717	264,142
Switzerland	Annex VII	29,265	21,432	296,179	115,625
Thailand	non Annex VII	280	4,616	6,349	3,748
The Former Yugoslav Republic of Macedonia	non Annex VII	5,000	11,500	1,000	5,833
Trinidad and Tobago	non Annex VII			1,323	441
Tunisia	non Annex VII		1,245	604	616
Turkey	Annex VII	3,425	167		1,197
Ukraine	non Annex VII	72,426	21,413	421	31,420
United Arab Emirates	non Annex VII		74		25
United Kingdom	Annex VII	153,677	127,039	141,745	140,820
United States of America	Annex VII	619,527	459,917	1,013,980	697,808
Uzbekistan	non Annex VII	59			20
Venezuela	non Annex VII	2,259	11,151	12,854	8,755
Total		**9,787,932**	**9,334,273**	**11,252,383**	**10,124,862**

Import and export of wastes per country and area (Parties and non-Parties)

Amounts exported (in tonnes)

Country of destination	Status	2004	2005	2006	Average 2004 - 2006
Afghanistan	non Annex VII	217	1,089	1,247	851
Algeria	non Annex VII	7,293	1,377	477	3,049
Andorra	non Annex VII	39,190	40,444	4,785	28,140
Argentina	non Annex VII	201	107	22	110
Australia	Annex VII	56,853	14,188	52,374	41,138
Austria	Annex VII	422,654	384,121	385,251	397,342
Azerbaijan	non Annex VII		241		80
Bahrain	non Annex VII	90	21		37
Bangladesh	non Annex VII	2,809			936
Barbados	non Annex VII		0	9	3
Belarus	non Annex VII	504	4,984	4,178	3,222
Belgium	Annex VII	925,355	632,299	770,490	776,048
Bhutan	non Annex VII		42		14
Bosnia and Herzegovina	non Annex VII	3,903	3,051	4,610	3,855
Brazil	non Annex VII	19		254	91
Brunei Darussalam	non Annex VII	75	8	14	32
Bulgaria	non Annex VII	3,320	10,542	3,000	5,621
Cameroon	non Annex VII			2,400	800
Canada	Annex VII	310,321	328,899	477,660	372,293
Chile	non Annex VII	6,123	13,843	10,620	10,195
China	non Annex VII	349	2,210	10,056	4,205
Colombia	non Annex VII	73	939	195	402
Congo	non Annex VII	205			68
Cook Islands	non Annex VII		23	1	8
Costa Rica	non Annex VII		2,000	2,081	1,360
Cote d'Ivoire	non Annex VII		190		63
Croatia	non Annex VII	10,244	12,792	51,068	24,701
Cuba	non Annex VII	137			46
Cyprus	Annex VII	4,324	2,545	2,588	3,152
Czech Republic	Annex VII	2,900	1,025	2,474	2,133
Democratic Republic of Congo	non Annex VII		131		44
Denmark	Annex VII	340,893	326,387	236,390	301,224
Dominican Republic	non Annex VII		4,199	4,170	2,790

Country of destination	Status	2004	2005	2006	Average 2004 - 2006
Ecuador	non Annex VII	22,063			7,354
Egypt	non Annex VII	49	2,722		924
Estonia	Annex VII	1,143	233	1,425	934
Ethiopia	non Annex VII			421	140
Fiji	non Annex VII	850	18,652	610	6,704
Finland	Annex VII	67,773	73,226	97,960	79,653
France	Annex VII	474,771	624,278	708,314	602,454
Gabon	non Annex VII	20	2		7
Georgia	non Annex VII		54		18
Germany	Annex VII	700,936	898,881	1,255,428	951,748
Ghana	non Annex VII			2,400	800
Greece	Annex VII	2,045	2,450	4,185	2,893
Hong Kong - Special Administrative Region of China	non Annex VII	425	322	60	269
Hungary	Annex VII	32,092	21,281	19,832	24,402
Iceland	Annex VII	1,006	1,557	1,804	1,456
India	non Annex VII	5			2
Indonesia	non Annex VII	124	131	260	172
Iran (Islamic Republic of)	non Annex VII	75	26		34
Ireland	Annex VII	339,903	316,438	334,244	330,195
Israel	non Annex VII	11,119	2,974	1,543	5,212
Italy	Annex VII	623,062	707,171	1,031,143	787,125
Jamaica	non Annex VII			6,734	2,245
Japan	Annex VII	310,587	305,926	90,366	235,626
Jordan	non Annex VII			21	7
Kazakhstan	non Annex VII	616	2,677		1,097
Kenya	non Annex VII		500		167
Kiribati	non Annex VII			2	1
Kuwait	non Annex VII		13,000	26,426	13,142
Kyrgyzstan	non Annex VII	17,000			5,667
Latvia	Annex VII	3,697	4,106	5,034	4,279
Lebanon	non Annex VII		1		0
Lesotho	non Annex VII			1,021	340

ANNEX 4
Import and export of wastes per country and area (Parties and non-Parties)

Amounts exported (in tonnes)

Country of destination	Status	2004	2005	2006	Average 2004 - 2006
Libyan Arab Jamahiriya	non Annex VII	1,207			402
Liechtenstein	Annex VII	143	66	213	141
Lithuania	Annex VII	51,525	5,385	4,579	20,496
Luxembourg	Annex VII	311,032	292,849	104,824	236,235
Malaysia	non Annex VII	1,542	3,814	5,511	3,622
Malta	Annex VII	613	2,344	3,320	2,093
Marshall Islands	non Annex VII	372		19	6
Mexico	Annex VII	309,387	126,277	544,419	326,694
Micronesia, Federated States of	non Annex VII	233		13	82
Monaco	non Annex VII			11,571	3,857
Morocco	non Annex VII	372	159	280	270
Mozambique	non Annex VII	422,567			140,856
Netherlands	Annex VII	1,491,090	1,312,821	1,629,082	1,477,664
Netherlands Antilles	non Annex VII			1	0
New Zealand	Annex VII	5,411	6,410	5,963	5,928
Niue	non Annex VII		200	3	68
Norway	Annex VII	176,950	197,468	169,036	181,152
Oman	non Annex VII			235	78
Pakistan	non Annex VII	53	73	3	43
Papua New Guinea	non Annex VII	500	120		207
Peru	non Annex VII			21	7
Philippines	non Annex VII	4,236	7,064	6,862	6,054
Poland	Annex VII	114,047	8,533	10,402	44,328
Portugal	Annex VII	109,972	98,512	119,963	109,482
Puerto Rico	non Annex VII		4,800	2,000	2,267
Republic of Korea	Annex VII	10	1,117	1,299	809
Republic of Moldova	non Annex VII	885	1,000	598	828
Romania	non Annex VII	2,106	6,938	16,045	8,363
Russian Federation	non Annex VII	230,077	333,224	339,331	300,877
Saint Lucia	non Annex VII			17	6
San Marino	non Annex VII	1,700	1,860	1,304	1,621
Saudi Arabia	non Annex VII		171		57
Senegal	non Annex VII	0	4		2
Serbia	non Annex VII	23,755	25,146	21,418	23,440
Singapore	non Annex VII	85,127	84,687	191,800	120,538
Slovakia	Annex VII	185	1,016	18,813	6,671
Slovenia	Annex VII	17,458	21,773	27,083	22,105
South Africa	non Annex VII	469	964	19,948	7,127
Spain	Annex VII	71,785	60,690	37,261	56,579
Sri Lanka	non Annex VII	18,001	30,500	6,000	18,167
Suriname	non Annex VII			142	47
Sweden	Annex VII	69,855	141,273	204,667	138,598
Switzerland	Annex VII	327,033	783,652	699,425	603,370
Taiwan, Province of China	non Annex VII	914	3,304	743	1,653
Thailand	non Annex VII	3,324	2,143	2,585	2,684
The Former Yugoslav Republic of Macedonia	non Annex VII	4,780	2,213	1,750	2,914
Tonga	non Annex VII		6		2
Trinidad and Tobago	non Annex VII		1,463	1,578	1,014
Tunisia	non Annex VII	36	80	230	115
Turkey	Annex VII	197	578	5,209	1,995
Tuvalu	non Annex VII			2	1
Ukraine	non Annex VII	385,080	264,276	261,184	303,513
United Arab Emirates	non Annex VII	11	191	74	92
United Kingdom	Annex VII	69,122	105,552	155,600	110,091
United Republic of Tanzania	non Annex VII			0	0
United States of America	Annex VII	725,777	608,785	1,003,096	779,219
Uruguay	non Annex VII			310	103
Uzbekistan	non Annex VII	319	158	102	193
Venezuela	non Annex VII	1,615	308	799	908
Yemen	non Annex VII	17			6
Zambia	non Annex VII			2	1
Total		**9,787,932**	**9,334,273**	**11,252,383**	**10,124,862**

ANNEX 5
Analysis of transboundary movements per region

All amounts in tonnes

Average 04 - 06	Region of destination								
Region of origin	**Africa**	**America OECD**	**America other**	**Asia OECD**	**Asia other**	**Europe EU/OECD**	**Europe other**	**Oceania OECD**	**Total**
Africa	141,191	0	0	4,100	0	9,884	0	0	155,175
America OECD	0	1,426,194	0	37,667	1,543	14,137	0	267	1,479,806
America other	0	1,873	15,218	8,662	0	1,596	0	0	27,349
Asia OECD	0	58	0	55,644	178,795	935	1,003	0	236,435
Asia other	660	796	0	41,159	123,466	11,716	19	300	178,114
Europe EU/OECD	616	3,882	1,765	8,341	55,830	7,111,960	93,142	500	7,276,037
Europe other	0	1,341	0	1,000	6,817	82,442	626,408	0	718,008
Oceania OECD	0	939	0	11,283	3,295	16,056	317	15,177	47,067
Oceania other	0	0	0	78	0	0	0	6,794	6,871
Total	**142,467**	**1,435,082**	**16,984**	**167,934**	**369,746**	**7,248,725**	**720,889**	**23,037**	**10,124,862**

2004	Region of destination								
Region of origin	**Africa**	**America OECD**	**America other**	**Asia OECD**	**Asia other**	**Europe EU/OECD**	**Europe other**	**Oceania OECD**	**Total**
Africa	422,550	0	0	0	0	9,669	0	0	432,219
America OECD	0	1,329,673	0	0	0	15,812	0	0	1,345,485
America other	0	572	22,973	4,987	0	1,698	0	0	30,230
Asia OECD	0	0	0	13,232	293,614	741	3,010	0	310,597
Asia other	0	1,065	0	11,568	97,580	18,300	0	500	129,013
Europe EU/OECD	0	6,375	1,783	0	40,862	6,473,010	231,122	410	6,753,562
Europe other	0	22	0	0	4,388	65,391	653,678	0	723,479
Oceania OECD	0	0	0	0	0	44,420	0	17,844	62,264
Oceania other	0	0	0	233	0	0	0	850	1,083
Total	**422,550**	**1,337,707**	**24,756**	**30,020**	**436,443**	**6,629,041**	**887,810**	**19,604**	**9,787,932**

ANNEX 5

Analysis of transboundary movements per region

All amounts in tonnes

2005	Region of destination								
Region of origin	**Africa**	**America OECD**	**America other**	**Asia OECD**	**Asia other**	**Europe EU/OECD**	**Europe other**	**Oceania OECD**	**Total**
Africa	0	0	0	500	0	5,626	0	0	6,126
America OECD	0	1,013,838	0	47,000	0	7,922	0	0	1,068,760
America other	0	2,020	8,504	11,000	0	1,338	0	0	22,863
Asia OECD	0	119	0	64,000	242,372	552	0	0	307,043
Asia other	1,555	1,082	0	49,826	89,889	9,084	56	400	151,892
Europe EU/OECD	1,245	1,693	2,646	1,523	6,104	6,987,162	27,047	1,090	7,028,510
Europe other	0	4,000	0	0	7,908	68,763	628,929	0	709,600
Oceania OECD	0	0	0	0	4,253	1,111	0	15,235	20,599
Oceania other	0	0	0	0	0	0	0	18,881	18,881
Total	**2,800**	**1,022,752**	**11,151**	**173,849**	**350,526**	**7,081,558**	**656,031**	**35,606**	**9.334.272**

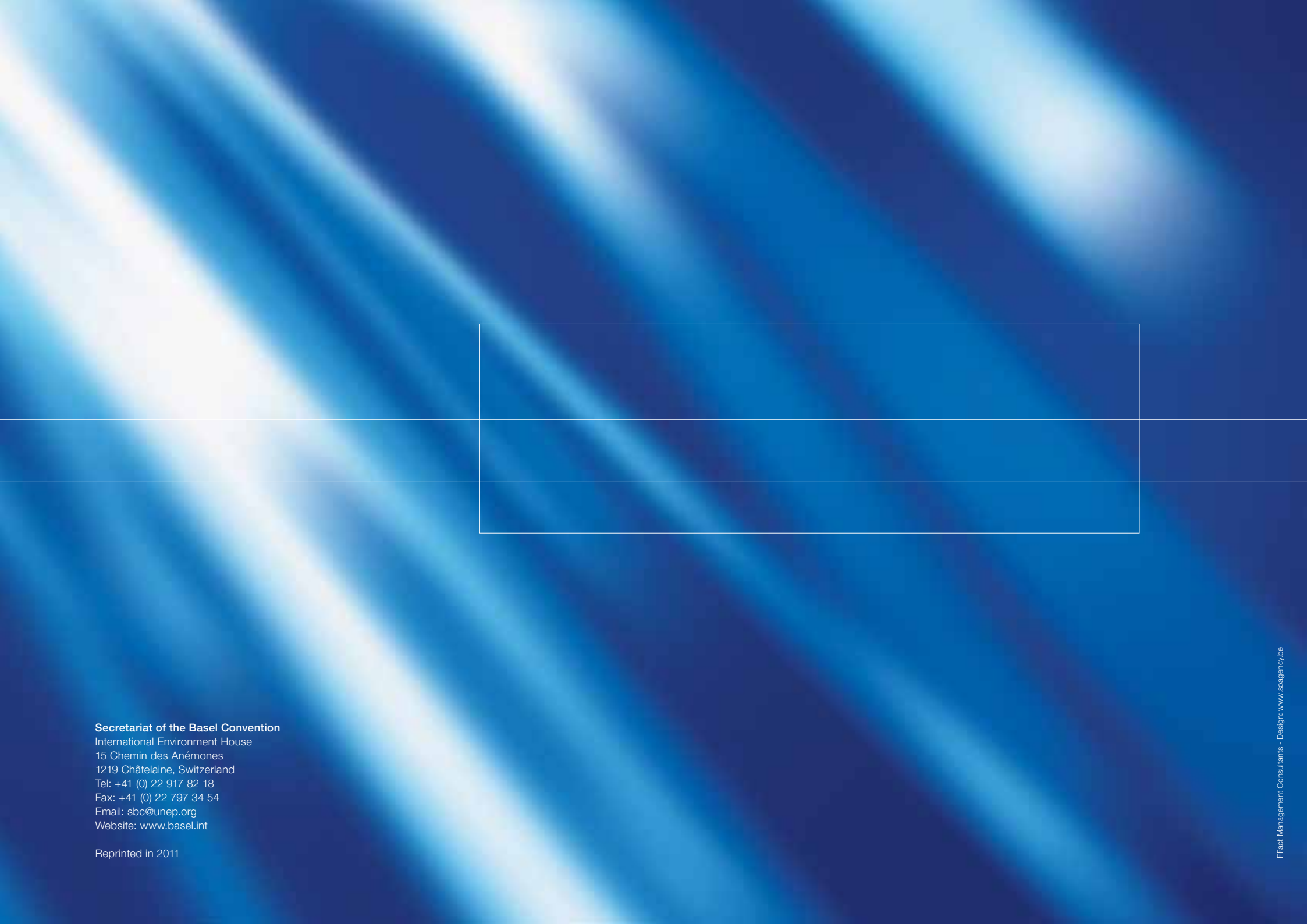
2006	Region of destination								
Region of origin	**Africa**	**America OECD**	**America other**	**Asia OECD**	**Asia other**	**Europe EU/OECD**	**Europe other**	**Oceania OECD**	**Total**
Africa	1,023	0	0	11,800	0	14,356	0	0	27,179
America OECD	0	1,935,070	0	66,000	4,628	18,676	0	800	2,025,174
America other	0	3,026	14,177	10,000	0	1,751	0	0	28,955
Asia OECD	0	54	0	89,700	400	1,511	0	0	91,665
Asia other	424	240	0	62,082	182,928	7,765	0	0	253,439
Europe EU/OECD	604	3,577	867	23,500	120,525	7,875,707	21,259	0	8,046,039
Europe other	0	0	0	3,000	8,154	113,173	596,617	0	720,944
Oceania OECD	0	2,817	0	33,850	5,633	2,636	950	12,451	58,337
Oceania other	0	0	0	0	0	0	0	651	651
Total	**2,051**	**1,944,786**	**15,044**	**299,932**	**322,268**	**8,035,575**	**618,826**	**13,901**	**11,252,383**

ANNEX 6
Transboundary movements per waste category

All amounts in tonnes

Y code	2004	2005	2006	Average
Y1	16,729	6,580	14,659	12,656
Y2	31,904	30,918	40,746	34,523
Y3	947	1,902	1,528	1,459
Y4	47,687	33,721	30,122	37,177
Y5	222,438	158,257	97,836	159,511
Y6	111,657	80,797	97,423	96,625
Y7	230	263	44	179
Y8	131,446	147,246	207,276	161,989
Y9	408,901	234,852	735,754	459,835
Y10	11,714	19,154	19,061	16,643
Y11	68,653	45,048	99,237	70,979
Y12	132,350	98,702	111,977	114,343
Y13	9,827	26,669	45,092	27,196
Y14	116	201	2,156	824
Y15	3,502	3,853	1,317	2,891
Y16	14,486	19,935	17,376	17,266
Y17	218,351	257,766	164,964	213,694
Y18	1,117,889	1,064,291	1,663,524	1,281,901
Y19	2,213	236	833	1,094
Y20	15	14,741	194	4,983
Y21	20,084	71,726	39,919	43,909
Y22	116,774	47,287	52,571	72,211
Y23	757,332	653,949	652,395	687,892
Y24	3,622	4,506	2,786	3,638
Y25	628	340	1,070	679
Y26	6,002	12,712	10,835	9,850
Y27	1,785	43	400	743
Y28	3		58	31
Y29	56,050	11,069	15,453	27,524
Y30	3		4	3
Y31	609,219	659,622	916,347	728,396
Y32	65,223	27,690	12,748	35,220
Y33	3,851	371	2,369	2,197
Y34	174,178	231,767	208,392	204,779
Y35	121,929	66,121	38,119	75,390
Y36	24,980	55,692	145,670	75,447

Y code	2004	2005	2006	Average
Y37	2		162	82
Y38	8,581	10,286	7,965	8,944
Y39	8,049	8,133	6,446	7,543
Y40	147	49	108	101
Y41	85,971	75,586	84,600	82,052
Y42	138,975	183,637	160,069	160,893
Y43		694	1,887	1,290
Y44	2,208	331	257	932
Y45	24,007	29,532	19,103	24,214
Several Y codes or unspecified	1,053,104	260,758	349,868	554,577
Total 1.1.a wastes	5,833,760	4,657,031	6,080,717	5,523,836
Total 1.1.b wastes	2,652,343	3,848,234	4,299,953	3,600,176
Total hazardous wastes (1.1.a and 1.1.b)	8,486,102	8,505,265	10,380,670	9,124,013
Y46	666,434	444,900	471,981	527,772
Y47	635,396	384,107	399,732	473,078
Total 'other wastes'	1,301,830	829,007	871,713	1,000,850
Total	**9,787,932**	**9,334,272**	**11,252,383**	**10,124,862**



Secretariat of the Basel Convention
International Environment House
15 Chemin des Anémones
1219 Châtelaine, Switzerland
Tel: +41 (0) 22 917 82 18
Fax: +41 (0) 22 797 34 54
Email: sbc@unep.org
Website: www.basel.int

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