

# Dumping and Illegal Transport of Hazardous Waste, Danger of Modern Society

Mario Obradović<sup>1</sup>, Sanja Kalambura<sup>2</sup>, Danijel Smolec<sup>3</sup> and Nives Jovičić<sup>2</sup>

<sup>1</sup> Montmontaža d.d., Zagreb, Croatia

<sup>2</sup> University of Applied Sciences Velika Gorica, Velika Gorica, Croatia

<sup>3</sup> BNBKO, Dugo Selo, Croatia

## ABSTRACT

*Increasing the production of hazardous waste during the past few years and stricter legislation in the area of? permanent disposal and transportation costs were significantly elevated above activities. This creates a new, highly lucrative gray market which opens the way for the criminalization. Of great importance is the identification of illegal trafficking of hazardous waste since it can have a significant impact on human health and environmental pollution. Barriers to effective engagement to prevent these activities may vary from region to region, country to country, but together affect the ability of law enforcement authorities to ensure that international shipments of hazardous waste comply with national laws and maritime regulations. This paper will overview the legislation governing these issues, and to analyze the barriers to their implementation, but also try to answer the question of why and how this type of waste traded. Paper is an overview of how Croatia is prepared to join the European Union in this area and indicates the importance and necessity of the cooperation of all of society, and international organizations in the fight with the new trend of environmental crime.*

**Key words:** transport, hazardous waste, illegal trafficking

## Introduction

Movement of waste in the world depends on the exploitation of its valuable ingredients and its reuse in some of production processes. In the integrated system of waste movement, a special place belongs to hazardous waste. Hazardous waste is a complex and sometimes controversial issue. A good deal for some, a big problem for the others, a challenge and similar. Despite the existence of international, regional and bilateral agreements which are supposed to ensure comprehensive hazardous waste management, which includes safe transportation, material or thermal treatment, and ultimately disposal, illegal trafficking of hazardous waste is increasingly a topic of discussions. This very manner of treatment constitutes a significant hazard to the global society, directly influencing people's health and the environment, while indirectly influencing the economic development of the modern society. Every system of waste management, whether hazardous or non-hazardous, represents expenses for the companies, so the occurrence of illegal trade in hazardous waste in order to reduce costs and increase profits is not

surprising. Systematic monitoring and implementation of international and national laws, as well as numerous conventions, increases the disposal of hazardous waste, causing a rising number of companies to look for ways to avoid costs arising from current legislation. Increase in production of hazardous waste during the last few years and strict legislation in the field of permanent disposal and transportation of hazardous waste increase significantly the costs of all activities related to the integrated system. According to the report of the European Environment Agency and the assessments given in the report, waste is increasingly transported over the European Union borders<sup>1</sup>. Therefore, the precise identification of illegal hazardous waste trafficking is of great importance. Obstacles to the effective prevention of the activities of illegal trade differ from region to region or from state to state, but they share the characteristic of affecting the competence of bodies for the implementation of laws which ensure transportation of hazardous waste which is acceptable for the environment and human health.

Uncontrolled release of hazardous substances from the waste during its transportation or illegal disposal can endanger a large number of inhabitants, flora and fauna, and thus become the source of major crisis situations for the entire community and all parts of its society. Hazardous waste can cause long-term contamination of soil, water and air, which at the same time implies a reduction in natural resources which cannot be renewed. It is especially important to take into account the transport of hazardous waste. All data on the transport must be recorded and transporters and vehicles must meet strict requirements of the international agreements on the transportation of hazardous substances.

The problem of illegal trade in hazardous waste is widespread in the European Union member states and the world. Unfortunately, the EU has not yet found the way to fight organized crime in the field of hazardous waste management, so the term »eco-mafia« is frequently mentioned in this context. This is a special interest group which quickly recognized the advantage of a common European market, thus becoming a very »successful« trans-European organization. With the use of existing corridors of illegal trafficking of drugs and weapons, a new niche for the transport of hazardous waste has been created. Bearing in mind borderless states, an increased risk of this new type of global hazard is to be expected, so we should ask ourselves have we done everything and what else can be done to ensure human health, environmental protection and in connection with this the security of the society as a whole.

Disturbances in the environment can lead to disturbances in socio-economic relations of the society, due to this fact the security of the environment and the problems of protection become one of key factors in achieving and maintaining the desired level of national security. The paper gives an overview of the current state of illegal trade in hazardous waste, the analysis of the implementation of legislation and indicates the importance and need for the joint action of all social structures and international organizations in the struggle with new criminal trends.

## Material and Methods

The goal of the research set in this paper is to analyze the comprehensiveness of the problem of hazardous waste and its illegal trade through all segments of society, and the development of a proposal for the ways to suppress this new form of organized crime likewise applicable for Croatia in accordance with knowledge obtained through the research.

Based on the defined research goal, the following tasks are set:

- To determine legal requirements for the transport and disposal of hazardous waste.
- Collect data on the cases of illegal trade in hazardous waste.
- Analyze individual case studies.

- Develop a proposal for the ways to suppress this new form of crime.

For the realization of individual tasks and set research goals, the following research methods have been selected:

- Case study analysis method.
- Descriptive analysis method shall be used for the analysis of legislation and general concepts of hazardous waste.
- Comparative analysis method shall be used for the analysis of individual cases.
- Modeling method for the drafting of the proposal of ways to suppress illegal trade in hazardous waste.

### What is hazardous waste?

According to its definition from the Article 1 of the Directive on hazardous waste represents waste which must contain one or multiple properties specified in Annex III of this Directive and requires special handling and transport of the same, as well as special treatment and disposal in order to avoid its risky and adverse effects on human health and the environment<sup>2</sup>. Properties of the waste which render it hazardous are: explosivity, reactivity, flammability, irritability, harmfulness, toxicity, carcinogenicity, corrosiveness, infectivity, teratogenicity, mutagenicity, substances and preparations which release toxic or very toxic gases in contact with water (Figure 1).

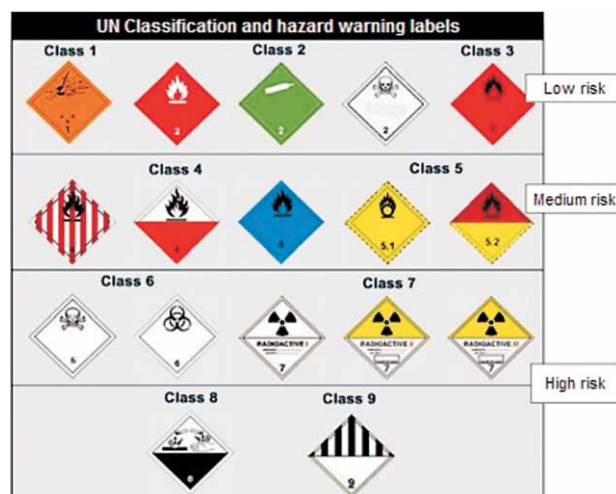


Fig. 1. Labels and classification of hazardous materials<sup>3</sup>.

In hazardous waste we include: medical waste, waste oils and oily substances, primary and secondary batteries, waste contaminated with polychlorinated biphenyls, asbestos waste, etc.

### Quantities of hazardous waste in the EU

The share of hazardous waste within the total quantity of waste ranges between 1 and 2%. According to rough estimates, approximately 350 million tonnes of

hazardous waste is produced worldwide. This led to the situation that ecosystems are unable to handle, absorb and decompose quantities daily discarded into the environment<sup>4</sup>. Transport of hazardous waste among the EU countries has increased by almost three times in the period between 2001 and 2009, reaching the level of almost 8.9 million tonnes per year<sup>5</sup>.

At the same time, the production of hazardous waste in the EU countries has been steadily increasing, and the last available data shows 66 million tonnes in 2005<sup>6</sup>. Most of the hazardous waste stays within EU boundaries or is transported into neighbouring countries. Statistical data of member states presented before the European Commission indicate increased import of hazardous waste<sup>6</sup>.

According to the report based on the analysis from a technical report drawn up in the »TOPIC« Centre on Resource and Waste Management EEA in 2008<sup>7</sup>, the biggest producers of hazardous waste per capita are Germany and Slovakia, followed by Belgium, Norway, the Netherlands and Sweden, as well as all other EU countries. Hazardous waste is mostly generated in the industrial sector, what is particularly pronounced in Slovakia, Bulgaria, Spain and Portugal, while waste from other sectors prevails in Romania, the Netherlands and Germany (Figure 2).

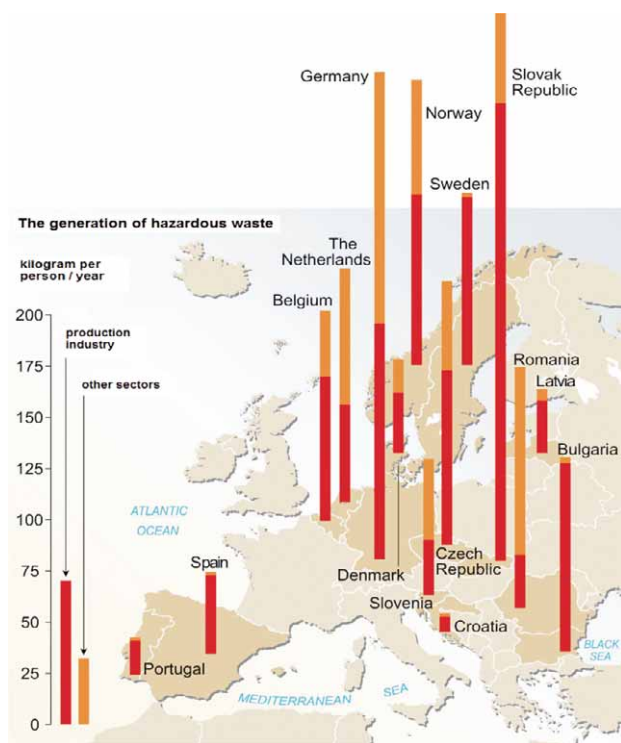


Fig. 2. Production of hazardous waste in the EU countries<sup>6</sup>.

## Results

### Case studies

Control of transboundary movement of goods and services often begins with two questions: Is the material transported waste and is it hazardous? In particular, this

issue has come to the fore with the emergence of eco accidents where hazardous waste caused considerable environmental pollution and endangered human health. Late seventies and the ecological disaster in Seveso (Italy) created the now widespread attitude »NIMBY« (not in my backyard). This has dramatically changed and affected the movements of hazardous waste worldwide. The fact that there is a low number of capacities for the disposal and treatment of hazardous waste in the world only intensifies the trend of illegal trade. In the member states of the European Economic Area (OECD), 26,169 landfills are registered and only 325 are provided for the disposal of hazardous waste. In six EU countries – Austria, Greece, Ireland, Iceland, Liechtenstein and Luxembourg, there are no landfills for hazardous waste. Regarding other methods of disposal, the situation is even more dismal, only 152 of 1,258 registered waste incineration facilities are provided for the treatment of hazardous waste<sup>1</sup>. For this reason, many industrial countries and large companies began to resort to the export of hazardous waste into the »Third World« countries or developing countries, which have seen quite a few cases of illegal transport. Most of these poor countries have a large external debt, so they frequently accept offers of multinational companies concerning the disposal of hazardous waste in their territory, although they are aware of all consequences of such actions<sup>8</sup>.

In late '80s, Benin was in a difficult economic situation with a huge foreign debt. Desperate government of Benin agreed to the terms of their former colonial masters, France – in exchange for thirty years of French financial aid, Benin agreed to receive several million tones of radioactive waste on its territory. Although the media and civil protests managed to stop this project, there is information that a part of this waste nevertheless ended in Benin, of course, illegally.

Today, illegal trafficking of hazardous waste is extremely widespread in Italy. »Eco-mafia« is ever more present, and what kind of consequences can their activities cause can be seen in the research results of Italian and American scientists. Antonio Giordano, the director of the Sbarro Institute for Cancer Research at Temple University in Philadelphia and Giulio Tarro, senior physician in a hospital in Naples claim in their research that »Camorra« (Neapolitan mafia) illegally dumps toxic waste in the areas of northern and southern Naples, what is directly linked to the high rate of breast cancer, which is on average 47% above national average, but also to other types of cancer like lung, liver and gastrointestinal tract cancer, which are on average 12% higher than the national average. In addition to all this, north of Naples, near the towns of Nola, Acerra and Marigliano, on wild landfills, known as the »triangle of death«, hundreds of small fires have been observed every night. Therefore, the region around Naples has become the area most affected by the »eco-mafia« activities<sup>9,10</sup>.

A famous example of illegal export of hazardous waste into Third World countries in which numerous diverse actors participate (the mafia, companies, state institu-

tions – inspection services, even the state itself) is evident on the example of the ship *Probo Koala*, anchored in the port of Abidjan in August 2006. Action of disposal of 500 tonnes of hazardous waste has been carried out in several locations without any check or inspection in September 2006 in Ivory Coast. Thousand people have been injured and 17 lost their lives. This was an issue of international organized crime, confirmed by the following facts: the owner of the ship was a Greek company, the ship was registered in Panama, the lessee was a Swiss-Dutch company based in Great Britain and the operator was Russian crew. Such sophisticated and widespread network of participants indicates their relationship with companies, but also state institutions under whose jurisdiction the transport of hazardous waste belongs<sup>11</sup>.

In the late '80s, several large incidents related to the transport of hazardous waste were recorded. Ships »*Karin B*« and »*Khian Sea*« transported waste with polychlorinated biphenyls (PCBs) into Nigeria and ashes containing large concentrations of heavy metals from an incinerator in Philadelphia (USA) to Haiti. This caused numerous protests and fury, not only of local population but also worldwide, which resulted in and contributed to the adoption of several Conventions regulating the issue of hazardous waste transportation<sup>12</sup>. Extreme examples are the cases of Guinea Bissau and India. In the first case, Guinea received an offer of 600 million dollars in 1980 from the USA and their European partners in exchange for the acceptance of their hazardous waste, this amount being approximately five times higher than the annual gross national income of this country. In the second case, the Supreme Court of India decided to grant permission for dismantling of the ship »*Blue Lady*« despite the report of experts that the ship contains a high level of asbestos and other hazardous materials<sup>13</sup>.

From the Nuclear Institute in Vinča near Belgrade, in mid-November of 2010, cargo of 333 tonnes of nuclear waste started its journey towards the Russian port of Murmansk. According to the UN data, this was the largest shipment of this type ever to travel over European soil or sea, among others, along the entire Adriatic Sea. This nuclear hazard sailed for two days from Koper to the exit of the Adriatic Sea, using international waterways, meaning outside Croatian and Italian territorial waters, and then over the Mediterranean, the Atlantic Ocean, the North Sea and the Norwegian Sea to Murmansk (Russia). Croatian maritime authorities were notified of the transport of this nuclear shipment over the Adriatic, and everything was done in secrecy. International public found out about the transport of Serbian nuclear waste after water penetrated the ship near the Norwegian coast, a week after hazardous cargo was unloaded in Murmansk, and after the commander of the »*Puma*« ship requested assistance from the Norwegian authorities. It is better not to think of possible consequences if by any chance the content of any of 8000 barrels with nuclear waste leaked out, since the disaster would be comparable to the Chernobyl one. Of course, we also mean the potential shipwreck of »*Puma*« while it

sailed through the Adriatic towards Russia, where the territory of all countries which have contact with the Adriatic Sea – Croatia, Italy, Montenegro and Albania – would be in danger, as well as their economies and the important economic sector of tourism. What is definitely worrying is the growing emergence of uncontrolled transport of electrical and electronic waste towards less developed countries. Reports of EU member states mention data on the transportation of hazardous waste which indicate the fact that the amount of information on the flow of this waste is very low, although statistical analyses provide a direct link to transport of old electronic equipment into Africa<sup>14</sup>. Figure 3 shows one of temporary landfills of electrical and electronic waste somewhere in Africa.



Fig. 3. Trade in hazardous electronic waste<sup>15</sup>.

### *Eco mafia and waste trade*

»Eco-mafia« worldwide uses the same methods and network of people as in other »goods« in their illegal activities. Europol estimates that their income from these activities ranges between 18 and 26 billion euro per annum<sup>16</sup>. According to the Europol department engaged in threat assessment (Organised Crime Threat Assessment – OCTA), illegal trade in hazardous waste in the EU is a sophisticated network of criminals with a clear division of roles (e. g. collection, transportation, disposal or legal aid) which increasingly collaborates with companies, including those with financial services. In today's era of globalization, the boundary between legal and illegal in the economic arena is ever more blurry, and in most cases it overlaps. Individuals already call this economic area »dirty economy« due to the more and more pronounced connection between industrial companies (producers of hazardous waste – who do not want to carry the responsibility for environmental protection and consequences for health) and members of organized criminal groups who illegally export, transport or dispose of in third countries this hazardous waste, with much lower costs for those companies.

In such current situation, the »eco-mafia« increasingly cooperates with the public sector, which, through the issuance of false certificates from the laboratories

and intermediate storage conceal the ultimate destination of the waste and the source where it comes from, or the company that produced it. Through the corruption of employees (port authorities, customs or the police), fictitious documentation or cargo control is performed, which greatly facilitates the work of everyone included in those illegal activities.

Hazardous waste from the EU is traded from South to Southeastern Europe and the western Balkans (Romania, Hungary and Albania), as well as to other member states. Italy has become a transit point for electronic waste en route to Africa and Asia, and in the last three years the Italian customs have seized more than 40,000 tonnes of hazardous waste from the »eco-mafia«, which they tried to transport illegally and permanently dispose of, mainly in the Southeast Asian countries (China and Hong Kong), but also in the poor parts of Africa<sup>9</sup> (Figure 4).

#### Legislation and the reasons for the emergence of illegal trade

During the 1970s and 1980s, an increased awareness on the negative effects of hazardous waste on human health and the environment led to an update in legislation related to the issues of waste disposal in domestic legal regimes in developed countries. The result is a reduction in the availability of landfills and an increase in costs of waste disposal, which led to an upsurge in the export of hazardous waste in developing countries which did not have strict controls for the disposal of this type of waste. If one accepts the proposition that hazardous waste is all that is created and released in the production, service delivery and consumption, and has the aforementioned characteristics and toxic properties, and

can endanger human health and the environment, we come to the disturbing fact that very few countries have accurate data on the quantities of such materials. The problem is aggravated by the fact that individual countries frequently have their own definition of hazardous waste, which creates confusion when trying to monitor and control of cross-border consignments of hazardous waste or the inspection of their treatment.

Convention on the Control of Transboundary Movements of Hazardous Wastes, known as the Basel Convention, signed in 1989 and entered into force in 1992, greatly improved the picture of the condition of hazardous waste. Currently, 172 countries have adopted it. The Convention sets three key objectives: reduction in the amount of hazardous waste, reduction of amounts in the transboundary movements of hazardous waste and it the promotion of undertaking all practical steps to ensure handling of hazardous or any other type of waste in the manner which protects human health and the environment. Member states which have ratified the Basel Convention are obliged to abide by the rules of exporting hazardous waste, according to which transboundary movement of hazardous waste can only be performed with prior notification of the country of export to the competent authorities in the countries of import and transit. Every shipment is accompanied by the supporting documentation from the location where the waste begins its journey to the location of the disposal. The Convention requires waste disposal in the manner which is not harmful to the environment in the country where the waste is being disposed of. Likewise, members of the Convention should not trade with non-members unless they have signed a bilateral agreement. Basel Convention enables the establishment of regional agreements



Fig. 4. Illegal waste trafficking<sup>17</sup>.

between countries. One such agreement is the one with the Organization for Economic Development and Cooperation (OECD) which controls transboundary movement of hazardous waste intended for reuse, such as the electronic waste. This agreement enables the OECD countries further trade with the waste intended for reuse with countries like the United States, which have not ratified the Basel Convention but they have bilateral agreements with other countries.

Another regional agreement is the Bamako Convention which concerns the ban on importing hazardous waste into Africa and the control of transboundary movement and disposal of hazardous waste on this territory. Bamako Convention is based on the principles of the Basel Convention, but is even more restrictive. It prohibits the import of any hazardous waste (including radioactive waste) into the signatory state. Bamako Convention has been signed by twelve countries of the Organization of African Unity in 1991, and it came into effect in 1998. The impetus for the adoption of Bamako Convention came from the failure of Basel Convention in prohibiting the trafficking of hazardous waste in less developed countries and from the realization that many developed countries export their hazardous waste into Africa<sup>18</sup>.

Protocol for the prevention of pollution of the Mediterranean Sea by the transboundary movement of hazardous waste and its destruction likewise defines the manner of treating hazardous waste. This Regulation, adopted in 2006, is directly applied in all 27 EU member states, and it implements the decisions of the Basel Convention, as well as OECD decisions.

Likewise, two more separate Regulations have been adopted relating to the shipments of non-hazardous waste from the EU to the countries which are not members of the OECD. None of the aforementioned agreements and Regulations does not contain implementation mechanisms or minimum standards in order to provide proper implementation of the agreements adopted. Compliance with and the implementation of agreements adopted, research and enforcement of actions for the suppression of these illegal acts should in principle be implemented at the level of individual governments. However, in many countries, the implementation of environmental legislation is not a political priority. The competent authorities and enforcement bodies are included formally, and frequently faced with the lack of capacities, tools and knowledge. Obstacles to the effectiveness of international efforts to discover and prevent illegal shipments of hazardous waste are numerous. They are mostly expressed through inefficient international cooperation, insufficient institutional capacities of the countries, the lack of political will etc.

#### *Inefficient international cooperation*

Exchange of experiences, knowledge and information on the transboundary movement of hazardous waste is still a rarity, and not a benefit in the struggle against these activities, as well as individual legal issues which frequently limit the exchange of important information

on potential illegalities and offenders. Another of important issues which emerged in practice are the criteria for efficient inspection regimes where currently the implementation in various countries is unbalanced, that is, the criteria are developed but not legally binding and the control over the implementation of adopted legislation is insufficient. Although specific criteria on the frequency and quality of inspection are not specifically defined, intensified supervision in one state should cause further operation of bodies performing inspection in another, however, the reality is different since individual countries are more active than the other countries in these activities, in accordance with the Directive 1013/2006. Furthermore, the number of companies involved in the chain of hazardous waste trafficking is growing, as well as the international market at the global level. Individual national and local structures cannot match this expansion and rapid transformation of companies and individuals, so they find it more and more difficult to deal with the problem. This is evident from the IMPEL report for the period from 2007 to 2009, which states that individual countries: Germany, Belgium, Netherlands, England and Austria reported approximately 400 illegal shipments of hazardous waste in the aforementioned period, while individual countries did not report any such cases, what raises the question of the credibility of results (Figure 5).

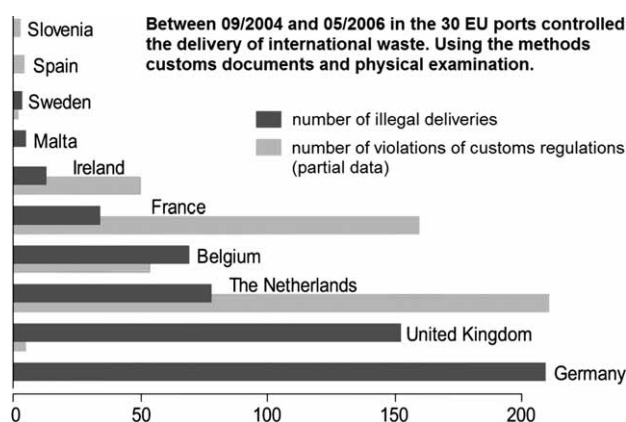


Fig. 5. Customs inspections of waste shipments in the EU<sup>19</sup>.

#### Disadvantages of national institutions and agencies

Poor coordination between numerous institutions and agencies dealing with the issues of environmental protection and the implementation of adopted regulations and laws, including those dealing with the control of transboundary movements of waste, reduces the ability of competent services, such as the customs, port authorities, the police or inspection services in the easier identification and intercepting of an illegal shipment of hazardous waste and successful dismantling of this type of organized crime chain.

As a result, neither the scope nor the consequences of illegal trafficking of hazardous waste are well documented, and when the problems are detected, it is often difficult to conclude whether they exist due to the lack of laws, unclear rules, narrow scope of the existing regula-

tory controls or a combination of all these factors. It is likewise unclear whether those discovered illegal shipments are isolated incidents or common practice since in-depth research is usually not further conducted, and available data is not adequate and does not show the scope and complexity of illegal movements of this type of waste. Another identified problem are extremely limited resources and the number of personnel for the monitoring of implementation of regulations in numerous countries, as well as the inspectors who are not experts for inspections of hazardous waste, and constitute another problem and disadvantage in the struggle of individual countries with these types of activities.

#### Disadvantages of the adopted legal framework and regulations

When one of the most important provisions in the area of transboundary movement of waste was adopted, the Basel Convention, which was supposed to ensure the cessation of using developing countries as a dumping ground for world's hazardous waste, it was expected to successfully reconcile the opposing views of those nations which pressed for the complete ban on the trafficking of hazardous waste and those who did not support such a ban. Most developing countries considered the complete ban on the trafficking of hazardous waste the only basis which would encourage industrially developed (northern) Europe to deal with its own waste and its disposal, and cease to use developing countries as a dumping ground for the disposal of its hazardous waste. Most non-European industrial countries, such as Japan, USA, Canada, Australia and New Zealand advocated against the ban on trafficking, along with a small number of significant developing countries, such as India, Brazil and Pakistan. They considered the total ban not to be in the best interest of the economic development of the world. The Convention was supposed to reach a compromise between the two sides by regulating the movements of hazardous waste. However, as the Convention approached its twentieth anniversary, it was clear from the incidents that it failed to prevent industrialized countries from illegal disposal of their hazardous waste in undeveloped countries. The adoption of the »Country Led Initiative«, launched by Switzerland and Indonesia after the ninth Conference in June 2008, indicates an attempt to surpass the impasse of negotiations between nations which supported the total ban (North-South) on hazardous waste trafficking and those opposing this ban. The Initiative is likewise an opportunity to breathe new life into the Convention and find a solution for fundamental weaknesses and shortcomings.

Weaknesses of the Convention are reflected in the fact that Basel Secretariat is mainly informative and cautionary body with the power to investigate illegal trade or waste disposal, but not prosecute them criminally, which is left to signatory states, which should enforce the law and ensure the implementation of the commitments under the Convention. Likewise, the states may have significantly different definitions of what constitutes hazard-

ous waste in their regulatory systems. And yet, the crucial weakness of the Convention is the so called Prior Informed Consent, a procedure that should ensure that the exporting country verifies whether waste is properly managed in the country of import.

The Convention imposes the obligation to ensure the availability of waste disposal facilities for both participants of this process, however, it does not prescribe the process by which this information can be confirmed. Therefore, the parties rely on the part of Convention regarding the exchange of information, where the exporter relies on the credibility of statement by the authorities of the importing country. In the context of cooperation between developed countries (exporters) and developing countries (importers), this represents a number of problems. Developing countries frequently lack technical and administrative capacities for the accurate assessment of the level of risk which a certain waste shipment represents for human health and the environment. They likewise lack the capacities to assess the suitability of their facilities for such types of waste. As a result, they can accept the import of a waste shipment based on an incorrect assessment on the existence of adequate facilities for its disposal. Secondly, the authorities of the country of import can falsify the data in the verification of adequacy of their landfills, which can lead to the lack of confidence in the legality of the procedure. Despite all these weaknesses of the Basel Convention, it remains to this day the most powerful document regulating transboundary movement and trade in hazardous waste.

#### Lack of capacities

Problems with the lack of capacities which should control the movement of hazardous waste, implementation and compliance of legal provisions, are a problem of numerous countries of the world and port authorities. The lack of capacities may refer to scarce financial and material resources or insufficient human resources. They manifest through the lack of trained inspectors or appropriate equipment, but also through difficulties in the collection of data on transactions and data management. Sometimes they also apply to the issues of management, poor regulatory requirements or the erosion of the rule of law through bribery and corruption of persons responsible, as well as the employees. The provision of the Basel Convention known as the »Basel Convention on the training centres for the transfer of technologies (BCRCs)« obliges member states to establish regional centres for the training of employees and the transfer of technologies, however, the said provision has not yet become a reality in most countries. In the performance report from 2007, the Convention Committee admitted the inadequacy of the system of this kind in the sense of managing institutional structures, funding and planning<sup>20</sup>.

#### Lack of political will

In many countries, the implementation of the law regulating transboundary movement of waste is not a national priority, and sometimes important political will to

resolve this situation is also lacking. Issues of illegal trafficking and movement of hazardous waste is unfortunately of secondary importance, behind the priorities such as illegal trade in arms, drugs, movement of counterfeit money and other domestic threats which occupy attention of relevant institutions. This is followed by insufficient knowledge and experience for the needs of the analysis of customs offenses or monitoring new tariff codes of hazardous waste. However, probably the biggest problem is the divergence of opinion between developing and developed countries in adopting the decision on the total ban on trade in hazardous waste. The dispute over the adoption of this decision has been ongoing since 1994 and has turned from a legal dispute into a political conflict. The reasons why it has not been signed keep being supplemented, from the fact that the decision has not been incorporated into the text of the Basel Convention, to the fact that signatures of three quarters of the member states of the Basel Convention are needed for its adoption. Developed countries lead in the stalling of the adoption of this Decision, for whom the Decision is not in accordance with their economic interests, which automatically entails the political interest of the USA, Japan or developing countries – India and Pakistan, who are the main importers of hazardous waste. The issue of delayed ratification of the Decision has become extremely politicized, so it is doubtful will it ever be solved. Some countries, however, opt for the import of hazardous waste, which provides them substantial income to the state treasury, so we can state with certainty – there is no, and maybe there never will be, an unanimous and much-needed political will to resolve the issues of movement and trade in various types of hazardous waste in the world.

#### Illegal trade in hazardous waste as a threat to the national security of the Republic of Croatia

The issue of environmental protection including the illegal trade in hazardous waste is an indispensable factor of endangering national security of individual countries, particularly those which have gone through the transition from communism-socialism into the capitalist socio-political system, the Republic of Croatia being included. Bearing in mind that Croatia will soon become the 28<sup>th</sup> member of the EU, which automatically means the use of the Schengen regime of the management of external EU borders, this opens the doors to various controversies and problems following the implementation of this provision from its very beginnings. On an informal meeting of the interior ministers in Tampere (Canada) in September 2006, the Border Management Strategy has been adopted, according to which the EU should develop a system of integrated management of external borders which will be able to handle all possible risks efficiently. The first challenge to this approach represents the understanding of the concept of Integrated Border Management – IBM itself, organization of institutions which will simultaneously enable the flow of goods and people in the manner in accordance with the laws, as well as border security.

#### *Integrated border management*

Integrated border management is generally divided into two categories: a) standards and regulations agreed upon between competent institutions within one state or the customs union; b) standards and regulations arising from international integration. To realize the implementation of both types, as well as achieve maximum efficiency, the cooperation of competent authorities is necessary, simultaneously in the treatment of incoming goods and coordination of all the points of entry (land border crossings, sea and river ports, airports). Regardless of the type of IBM in question, this system should be able to respond to all challenges and problems at the borders, from complicated procedures, legitimacy of supervisory bodies, excessive number of controls, poor organization of border crossings and insufficient exchange of information between neighboring and other states which cooperate. Although the concept of integrated border movement has not been developed in the EU practice, they seek to impose it on candidates and potential candidates for EU membership, and thus on the Republic of Croatia. Once »hermetically« sealed borders, which represented major economic and political obstacles, have become significantly more open and the movement of people, ideas and material goods has become much more liberal. External border security is not thereby diminished, on the contrary, it has increased, primarily towards military threats and non-member states, primarily meaning Russia and its satellite states. Such »more open« borders (which some consider permeable like a »sieve« and poorly monitored for non-military threats) were likewise used by those involved in organized crime, so this has become a problem for member states nowadays and they face danger from those circles. The link between organized crime and the trafficking of hazardous waste is evidenced by experiences of numerous countries of the world, so the Republic of Croatia will likewise not be spared from these activities and threats. It will increase them by opening its borders and entering this multi-million market, mostly dominated by profit, ethics being usually the last on the list of priorities.

#### *Hazardous waste in the Republic of Croatia and the current situation*

Current situation in the Republic of Croatia regarding hazardous waste is not good at all, primarily due to the lack of data on actual quantities of hazardous waste, but also the lack of capacities for the disposal of this type of waste. After the closing of hazardous waste incineration plant »PUTO« located in Zagreb, waste which needs to be incinerated is taken to individual EU countries which have such facilities. Quantities rise from year to year, and they have reached 21,049 tonnes in 2011. A detailed presentation is given in Figure 6.

There is a large number of untreated wild landfills that are a real threat to human health and lives, but also to the environment. If we add the real danger of illegal trafficking of hazardous waste to an already bad situation with hazardous waste, which could come to the Re-



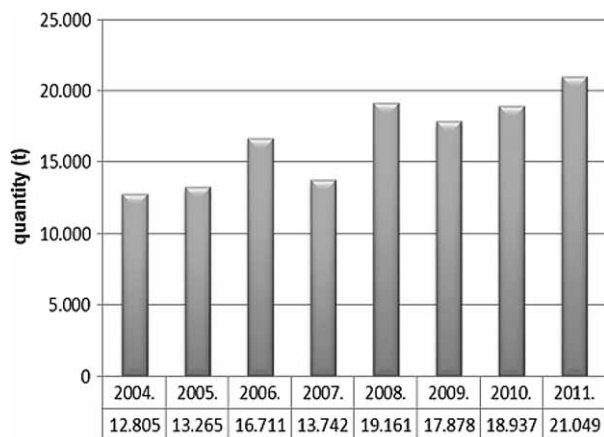


Fig. 6. Export of hazardous waste for the period 2004-2011<sup>21</sup>.

public of Croatia from other European countries using more open and easier routes as a consequence of »loose« Schengen regime, it is clear that this would threaten and weaken the national security of the Republic of Croatia. This would be reflected primarily through the adverse impact of deposited hazardous waste on the environment which may endanger the life and health of citizens, their pauperization, an increase in migration, occurrence of monopolistic behavior, corruption etc. This additionally leads to destabilization and conflict within every community. In the circumstances currently prevailing in the Republic of Croatia, such as insufficient human and material resources of ecological inspections, high level of public servants' corruptibility, poor environmental awareness of the majority of local authorities and citizens and great social differences in the society, it seems that organized dealing with illegal movement and disposal of hazardous waste requires no large investments. It is only necessary to find the containers, organize loading and unloading and find a secluded spot where one can unnoticed leave toxic material. Emigration from rural areas, where numerous abandoned households remain, benefits criminals, since the likelihood of someone noticing harmful effects on the people and the environment in a short time is very low. This could be particularly important for unhindered disposal of hazardous waste smuggled from abroad. Bearing in mind the long-standing successful cooperation between Italian, Montenegrin and Serbian organized crime groups, as well as the cooperation with Croatian crime scene, the start of secret transportation of hazardous waste as new lucrative »goods« along these well-established smuggling channels is entirely possible.

## Discussion

### *Proposal for the solution for suppressing illegal trafficking of hazardous waste by defining critical control points*

Nowadays, we can safely say – security is the accompanying element of human society, from its beginnings to the present day. Individuals, human communities, orga-

nizations or institutions always have to worry about security. This stems from the innate human instinct for self-preservation and is an important fact in our lives. Among theoreticians of security there are differing opinions concerning what is meant by security. According to some, security means a situation in a community, organization, institution or a specific area, characterized by the non-existence of a threat or danger, while others consider security to be activities, measures and acts undertaken by entities (individuals, social groups, organizations and institutions) with the aim of achieving, preserving and developing the necessary level of security<sup>22</sup>. From the historical aspect, social life has always been filled with various forms of conflict, political, economic or military in nature, characterized by the use of force and various forms of violence directed against the existence and survival of an individual or a community. Until the end of the twentieth century, security has been viewed in the sense of state security, primarily from a military point of view or external threats to the state security. Recently, this point of view has changed significantly due to the emergence of modern, non-military forms of security threats, which have global character and bring into question not only the existence and survival of the state but also the individual, even humanity as a whole.

The solution to this problem is possible through better coordination of the largest possible number of countries by mutually harmonized unilateral measures and rules of engagement, but also through consistent implementation of adopted and harmonized laws, as well as the exchange of information and state databases.

Implementation of the Regulation on shipments of waste is the responsibility of each member state. National coordination of all institutions involved in these activities can be coordinated by inter-ministerial agreements which establish the framework for specific levels of responsibility, communication and exchange of information between these departments, as well as addressing specific protocols of operation.

Shipments of hazardous waste must assume multi-national aspect (e. g. complex waste shipments and difficulties related to their classification), and not be focused on the local and national aspects of this issue as they are now. It is necessary to adopt and support the implementation of interethnic jurisdiction over illegal shipments, regardless of whose territory they occurred on, or what nationality do the participants of those illegal activities belong to. As a good foundation for the adoption of this proposal serves the IMPEL report for 2005. Namely, an investigation was carried out in 17 European ports, during which 3000 accompanying boat documents have been examined. Inspections examined 258 cargoes, 140 of which contained waste, up to 68% in the illegal transport. In order to implement a large number of such activities and decisions, good cooperation with international intelligence networks and organizations dealing, inter alia, with this issue, such as Europol, IMPEL, Interpol, Organized Crime Threat Assessment (OCTA) or World Customs Organization (WCO) is of great importance.

Critical control points (CCP) in trade and waste movement between EU and ASEM members constitute an entire array of activities contained in policies and laws, management, limited capacities, environmental protection, cooperation and communication, as well as authorized operators (Figure 7).

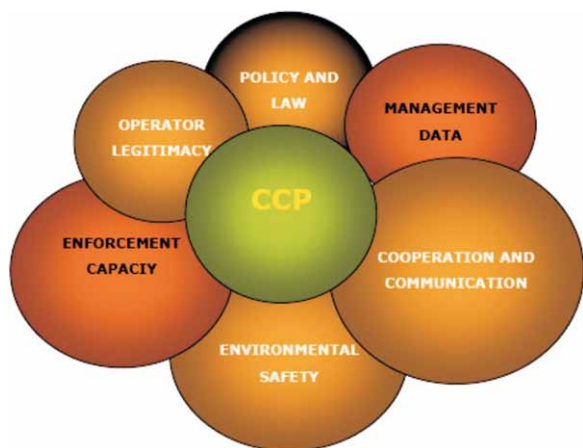


Fig. 7. Critical control points<sup>23</sup>.

## Conclusion

Environmental protection is an unavoidable factor of internal stability and security of every community, including our own. Faced with an enormous increase in illegal hazardous waste shipments, numerous countries still do not see the need for a better, higher quality and more efficient cooperation, and thus the possibilities of permanent eradication or at least a decrease to the lowest possible level of this problem. Eco-mafia, in terms of its specificity, is an extremely serious threat to the national security of each state. Unlike other factors which

threaten national security, such as violence, extremism, environmental crime is much more perfidious, resulting in significant difficulties in controlling and preventing these types of crimes. Polluted environment is a threat to the life and health of all members of the community, regardless of the gender, race, nationality and religion. Increased costs of the legal disposal of hazardous waste are an incentive to companies for illegal activities. Hazardous waste management, driven by the perception of high risk and high costs, does not care for the repercussions on the environment and human health. Potential threat to human security is estimated through the analysis of possible long-term, direct and indirect effects of the activities of organized crime on the performance of public functions in the field of hazardous waste disposal. Harmful consequences would be endangering human health by polluting the environment, that is, the soil, waters, underground waters and air with toxic materials, as well as the disturbance of the ecosystem. Negative economic effects will be reflected through the destruction of legal economic activities, an increase in the healthcare costs, the lowering of estate prices in polluted areas and a reduction in the overall quality of life.

Illegal trade in hazardous waste is an increasingly serious and widespread problem, which requires unconditional cooperation at all levels, from international and national to regional ones. Obstacles to cooperation are numerous, but several important initiatives are already in progress, which would improve the »abilities« of states to fight the problem. In the national security system, special attention must be paid to the protection and preservation of the ecological security of the state, since this becomes a necessary evil due to the spread of the environmental crime, and its consequences are far-reaching. In this regard, there is a need for efficient detection, identification and prosecution of crimes against the environment.

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*S. Kalambura*

*University of Applied Sciences Velika Gorica, Zagrebačka 5, 10410 Velika Gorica, Croatia  
e-mail: sanja.kalambura@vvg.hr*

## **ODLAGANJE I ILEGALNA TRGOVINA OPASNIM OTPADOM, OPASNOST MODERNOG DRUŠTVA**

### **S A Ž E T A K**

Povećanje proizvodnje opasnog otpada tijekom posljednjih nekoliko godina te strože zakonodavstvo u segmentu trajnog zbrinjavanja i prijevoza značajno povećava troškove navedenih aktivnosti. To stvara novo, vrlo unosno sivo tržište što otvara put prema pojavi kriminala. Od velike je važnosti prepoznavanje ilegalne trgovine opasnim otpadom budući da može značajno utjecati na zdravlje ljudi i onečišćenje okoliša. Prepreke učinkovito angažmanu u sprječavanju ovih aktivnosti mogu se razlikovati od regije do regije, zemlje do zemlje, ali zajedno utječu na sposobnost tijela za provedbu zakona koji bi osigurali da međunarodne pošiljke s opasnim otpadom udovoljavaju nacionalnim zakonima i pomorskim regulativama. U radu će biti dan prikaz zakonodavstva kojim se regulira ova problematika, te analizirati prepreke u provedbi istih, ali i pokušati odgovoriti na pitanje zašto se i na koji način trguje ovom vrstom otpada. Rad donosi pregled o tome koliko je Republika Hrvatska pripremljena za ulazak u Europsku Uniju u ovom području te ukazuje na važnost i potrebu u zajedničkom djelovanju svih struktura društva i međunarodnih organizacija u borbi s novim trendom ekološkog kriminala.