

11-2010

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Recommended Citation

Herard, D. (2010). The Hungarian toxic red sludge spill and determining public accountability. Disaster Risk Reduction (DRR) Program, Florida International University.

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Hungarian Toxic Red Sludge Spill

**The Hungarian Toxic Red Sludge Spill
And
Determining Public Accountability**

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November 2010

Submitted to:
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Introduction: Hungary's Red Sludge Disaster

On Monday October 4th the walls of a reservoir containing waste product at the alumina plant *Ajkai Timfoldgyar Zrt* in western Hungary ruptured sending 700,000 cubic meters of toxic red sludge pouring onto the villages of Kolontár, Devecser and Somlóvásárhely, prompting the Hungarian government to declare a state of emergency. The spill covered about 40 square kilometers, killed 9, injured 120, and forced the government to evacuate over 400 people.¹ There were also broader fears that the chemicals from the red sludge would seep into the nearby streams and tributaries that run into the Danube, the second longest river in Europe, turning a local disaster into an international one as it flowed downstream towards Croatia, Serbia, Romania, Bulgaria, Ukraine and Moldova, before letting out into the Black Sea.² This disaster has prompted a number of questions regarding accountability in terms of the causes of the disaster as well as responses by relevant actors. This paper will provide a theoretical discussion of various forms of accountability, applying them to the recent industrial disaster in Hungary. It will evaluate the Hungarian government's actions along those guidelines, outlining its successes in managing the disaster itself, how the historical failures of previous governments to regulate industry mires the process of determining the current government's accountability in that regard, along with its missteps in the process of establishing criminal accountability for the disaster. The actions of the government are further juxtaposed to the multiple failures of the company responsible for maintaining the reservoir.

¹ (2010, October 05). Hungary declares emergency after red sludge spill. *Reuters*.

² (2010, October 06). Huge ammonia spill paints towns red as a state of emergency is declared in three counties. *Duna Televizio*.

Disaster as Competency Test

Mark Bovens utilizes a conceptual framework that analyzes accountability in terms of the specific social relationship between an actor and a forum. An accountability relationship between actor and forum has three component parts. The first involves the *obligation* of the actor to explain and justify their conduct to a forum. The second entails the *process* of the actor providing information, answering questions, and giving explanations to justify their actions or inactions. In the third, the forum provides a *judgment* of the actor along with commensurate sanctions or rewards.³

One specific accountability relationship that becomes apparent in the case of the Hungary disaster is that which exists between the government and the public, what Bovens calls political accountability. While the principal (the citizenry) elects the agent (the government) to act on its behalf, the agent is in turn accountable to the principal for its actions. The government is the actor, and the people constitute the forum to which government is accountable, which then reserve the right to pass judgment. After judgment, the sanction or reward is often determined through the electoral process. “The mechanism of political accountability [thus] operates precisely in the opposite direction to the delegation of sovereignty.”⁴ Accountability to the people serves as a check on the power they entrust to government, reaffirming the people’s sovereignty over government. In an adaptation of Bovens’ conceptual framework applied to disaster risk reduction (DRR) within the Latin American and Caribbean context, Olson et al. delve into the relationship between disasters and government accountability. First and foremost, emphasis should be placed on their assertion that disasters are a result of the intersection of hazard events such as earthquakes and hurricanes, or toxic red sludge spills in this case, and the

³ Bovens, 2006, pp. 9-10.

⁴ Bovens, 2006, p. 16.

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vulnerabilities to them that exist in the particular communities they affect. DRR is thus the process of reducing vulnerability to hazard events in human communities. Therefore, when disasters happen, questions regarding the failure of government to reduce vulnerability inevitably surface.⁵

Farazmand contends that accountability is particularly critical when it comes to managing crisis. Governments are not only expected to take steps to prevent disasters, but when they do occur, they must act urgently to save lives and property, assuring the security of their citizens. Government management of an emergency therefore becomes a test of its general competency. Today this test is of even greater significance as legitimacy and securing the people's trust has become the centerpiece of modern representative democracy. The failure of administrations to respond effectively to disaster situations often leads to a withdrawal of public support and inevitably removal from power.⁶ Public accountability promotes the acceptance of government authority, enhancing government legitimacy by allowing them to explain and justify their actions to the public, with the public maintaining its right to ask questions and state opinions.⁷

An important component of a government's management of a disaster is its ability to communicate effectively. Governments are held accountable for their success or failure in communicating because this often plays a fundamental role in determining their ability to mitigate the amount of hardship faced by their citizens during disaster. Not only must government be able to communicate well amongst its various appendages, but also, the people must be kept informed of developments related to the disaster so that they can know that government is acting as it was elected to. Effective communication by the government is also needed so the population can take whatever necessary actions are expected of them to ensure

⁵ Olson et al., 2011, pp. 62-63.

⁶ Farazmand, 2007, p. 149.

⁷ Bovens, 2006, p. 27.

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their safety. Governments are judged in terms of their agency, the extent to which they are proactive in crisis communication, and the degree to which their actions are transparent to the public. The government thus becomes a source of stability in the midst of crisis. According to Garnett and Kouzmin, the Bush administration's response during Hurricane Katrina is a poignant example of the role that government communication plays in protecting the public from disaster. They believe that the immense suffering endured during and after Katrina was as much a product of multiple communication disasters as it was a result of the natural disaster itself. Communication failures prevented both the recognition that a crisis was emerging, as well as hampering the response to the devastation left in the wake of the hurricane.⁸ Olson et al. note a similar communications failure during the tsunami event caused by the 27 February 2010 magnitude 8.8 Chilean earthquake. As communication broke down between the Chilean Navy's Hydrographic and Oceanographic Service (SHOA) and the Ministry of the Interior's Office of National Emergencies (ONEMI), the country's tsunami warning system was cancelled only an hour after the major earthquake struck just off its coast, leaving many of Chile's small coastal towns in the dark about the threat facing them.⁹ With 350 people dead in the town of Constitución alone,¹⁰ the public cried out for answers.¹¹

Hungary's Government Responds to Crisis Test

From the very beginning the Hungarian government's actions depict an understanding of its formal responsibility to act urgently, as well as its informal obligation to keep the public informed. The fact that only 9 people were fatally wounded in such a massive industrial disaster

⁸ Garnett and Kouzmin, 2007, p. 171-172.

⁹ Olson et al., 2011, p. 65.

¹⁰ Padgett, T. (2010, March 01). Chile: prepared for the quake but not the tsunami. *Time*.

¹¹ (2010, March 06). Chile sacks oceanography chief over failure to issue tsunami warnings. *The Telegraph*.

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speaks volumes to the level of coordination by the various responding agencies. Nowhere in the media were there major criticisms of the government regarding its immediate actions. The National Ambulance Service had 23 units on the ground and 4 helicopters assisting in the search and rescue operation. That very evening, it treated 116 of the injured, while the more seriously wounded were airlifted to hospitals in the capital, Budapest. Early the next day, the Budapest Public Area Maintenance Company sent five tanker trucks of drinking water to the area to meet the needs of the population since their water supply had been contaminated by the red sludge.¹² The disaster also displayed the functioning of the country's disaster warning system. Immediately that afternoon the highest alert level was established, warning communities along nearby creeks and rivers most susceptible to contamination. As it became evident that the spill placed the Danube at risk, the government extended a warning to countries along the major river using the AEWS/PIAC alert system of the Danube Protection Convention.¹³

Also impressive on the part of the Hungarian government was its immediate attempts to stop the red sludge from contaminating the Danube River, one of the largest rivers in continental Europe. Instantly following the spill, disaster management experts began applying various chemical treatments to the tributary that flowed into the Danube to neutralize the alkalinity of the sludge, while also using techniques to slow its flow in order to recover the heavy metals being transported down-stream.¹⁴ According to the Executive Secretary of the International Commission for the Protection of the Danube River (ICPDR), the disaster is likely to have only minor international consequences, because the measures taken in Hungary seemed successful in

¹² (2010, October 5). Sludge flood—Four dead include children. Retrieved from <http://redsludge.bm.hu/?paged=9>. 5:26 pm.

¹³ (2010, October 7). Information on the accidental pollution and related mitigation measures of the 'red mud spill at Ajka.' Retrieved from <http://redsludge.bm.hu/?paged=9>.

¹⁴ (2010, October 7). Information on the state of the rivers in Hungary. Retrieved from <http://redsludge.bm.hu/?p=21#more-21>.

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lowering the sludge's pH level and slowing its spread. In 1998 the countries along the Danube founded the ICPDR to protect it from such environmental cataclysms. In this instance, Hungary successfully carried out its obligation to alert the other countries along the river, thus validating the effectiveness of the regional early warning system.¹⁵ Beyond this action, the Hungarian government also placed heavy emphasis on monitoring the water supplies of cities not in the immediate vicinity of the disaster, ensuring that they remained unpolluted, and thus safe to drink.

Of particular significance were steps taken by the government to examine the reservoir after the initial breach to determine whether or not a threat still persisted. The Hungarian Minister for the Environment, Zoltán Illés, after discovering that a total collapse of the reservoir was not out of the realm of possibilities, shifted the government's efforts away from securing the earlier breach towards building a dike around the reservoir to contain the rest of the toxic sludge should the walls completely fail.¹⁶ About 800 residents remaining in the nearest town, Kolontar, were immediately evacuated once the new threat became apparent, while 300 soldiers, 130 police vehicles and four trains were on standby in case 6,000 more residents nearby also became endangered.¹⁷

Not only was the government's immediate physical response to the disaster quite successful, its communications to the public as the disaster unfolded was also of very high quality. It was particularly successful in what Garnett and Kousmin call communication as interpersonal influence. "The interpersonal dynamics of presidents, governors, mayors, chief executive officers, their top advisors, and other actors involved in the crisis," have become increasingly critical in how government's are evaluated by the public. Government leadership

¹⁵ (2010 October 7). Information on the state of the rivers in Hungary. Retrieved from <http://redsludge.bm.hu/?p=21#more-21>.

¹⁶ (2010 October 11). The reservoir at Kolontár cannot be saved. *Duna Televizio*.

¹⁷ Bilefsky, D. (2010 October 10). Fears of more red sludge in Hungary. *The New York Times*.

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must engage in face-to-face interpersonal communications either at the scene of the disaster or in an operations center, to display to the public that it is directing action and setting the tone for management of the crisis.¹⁸ The very evening of the spill, Prime Minister Viktor Orbán sent Interior Minister Sándor Pintér to direct immediate disaster relief efforts.¹⁹ On the morning of October 5th, a Governmental Coordination Committee meeting was held to decide on the immediate reconstruction of the breached reservoir wall, clean up of the red sludge covering the three towns, and treatment of rivers that had been contaminated.²⁰

Afterwards, top government officials were dispatched to the area to show the governments concern and dedication to managing the disaster and insuring the public safety. Minister for the Environment, Zoltán Illés, was the first to arrive on the scene to assess the extent of the disaster and to coordinate efforts to stop the red sludge from seeping into the water table and eventually reaching the Danube.²¹ A day later, Prime Minister Orbán walked around the devastated area, spoke with residents, and met with experts assessing the situation, after which he gave a press conference to discuss what the government was doing to clean up the environmental devastation, help the people affected, and determine the causes of the disaster.²² The Hungarian government also established the website redsludge.bm.hu to update the public on the situation and how it was handling it.²³ The Junior Minister of Government Communication provided continuous reports on the preventive and restorative measures being taken by the government and its various organs, along with the condition of the rivers that were being

¹⁸ Garnett and Kouzmin, 2007, p. 172-173.

¹⁹ (2010, October 11). "Homes, lives ruined by toxic spill." *The Budapest Times*.

²⁰ (2010, October 7). Information on the accidental pollution and related mitigation measures of the 'red mud spill at Ajka.' Retrieved from <http://redsludge.bm.hu/?paged=9>.

²¹ (2010, October 06). Huge ammonia spill paints two towns red as a state of emergency is declared in three counties. *Duna Televizio*.

²² (2010, October 07). Viktor Orbán visits Kolontár and Devecser to meet with locals. *Duna Televizio*.

²³ (2010, October 12). Redsludge dot com. *The Budapest Times*.

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contaminated.²⁴ This transparency serves as an important prerequisite for Bovens' notion of public accountability, which places emphasis on the accessibility to the general public of information regarding the actor's conduct.²⁵ According to a New York Times article, Prime Minister Orbán's swift measures to take command over the crisis situation established the government as a Hungarian protector in the eyes of the public, forging greater national unity, and giving his government a needed uplift during a time of economic travail.²⁶

Failures in Government Oversight

Perhaps where the government had its biggest failings was in not immediately knowing the properties of the red sludge. Initially the Hungarian Academy of Sciences made a public statement declaring that the waste product was nontoxic, but this was quickly proven wrong by succeeding events.²⁷ According to Greenpeace, the toxin levels of the sludge were much higher than the government initially reported to the public, containing twenty-five times the level of arsenic allowed, along with high levels of mercury and chrome.²⁸ To the media, this displayed a reprehensible lack of government oversight prior to the disaster. The government was expected to know what kinds of harmful chemicals were being stored within the country's borders, and how to neutralize them if they should ever become a threat to the public safety. This gap in government knowledge had some particularly negative consequences for the response effort. During the rescue, 8 firefighters, 1 soldier, and 8 police officers suffered serious injuries, with a

²⁴ (2010, October 7). Report for the international press. Retrieved from <http://redsludge.bm.hu/?paged=9>.

²⁵ Bovens, 2006, p. 13.

²⁶ Bilefsky, D. (2010, October 11). Hungary arrests official, citing role in red sludge. *The New York Times*.

²⁷ Dragoman, G. (2010, October 16). Seeing red in Hungary. *The New York Times*.

²⁸ (2010, October 8). A deadly deluge. *The Economist*.

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number hospitalized as a result of working in sludge they believed to be relatively harmless.²⁹ This is conceivably a failure in what Bovens' terms administrative accountability. It was the responsibility of various government agencies and inspectors to determine what was being stored in the reservoir as well as the overall safety of the structure. Hungary likely placed more emphasis on establishing a strong disaster warning and response system, but did not invest appropriately in undertaking preventive measures.

For some scholars, industrial disasters must be analyzed through the lens of human rights. Morehouse believes that people have the right to know about the industrial hazards that pose a threat to their lives, and to participate in decisions concerning how these hazards are managed.³⁰ Perhaps it can be argued that it is the role of elected government to represent the interests of the people by ensuring that they are not exposed to the dangers of industrial hazards. The Hungarian government seems particularly accountable considering that there had been numerous warnings regarding the threat of the toxic sludge. The Clean Air Group (Levegő Munkacsaport), an environmental organization, contends that it had warned the government for ten years that there were significant risks associated not only with the Ajka plant but also other storage reservoirs around the country. The reservoir that held the caustic waste was on the ICPDR's 2006 watch list of over 150 industrial sites that were at risk for accidents that could contaminate the Danube.³¹ More importantly, residents had long observed that the reservoir had surpassed its capacity, and complained about eminent disaster.³² It was not until after the disaster that the government began examining other factories in the area to ensure that a similar disaster was not on the horizon.³³

²⁹ (2010, October 6). Disaster management situation, action taken, resources. Retrieved from <http://redsludge.bm.hu/?paged=9>. Also Dragoman, G. (2010, October 16). Seeing red in Hungary. *The New York Times*.

³⁰ Morehouse, 1987, p. 23.

³¹ Rosenthal, E. (2010, October 7). Site in Hungary was listed as risky. *The New York Times*.

³² (2010, October 11). Homes, lives ruined by toxic spill. *The Budapest Times*.

³³ (2010, October 12). Kolontár dike completed, engineers to check it today. *Duna Televizio*.

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For journalist Gyorgy Dragoman, the disaster will likely lead to a reassessment of Hungary's decades-long practice of storing toxic industrial waste throughout the country, and thus a political debate about why Hungarians once accepted such threats to their lives and their environment.³⁴

Herein lies a fundamental problem in assigning administrative and political accountability for this disaster to the current government in power. Viktor Orbán's center-right Fidesz party came to power in April of this year, ousting the Hungarian Socialist Party, the *Magyar Szocialista Párt* (MSZP), that ruled the country over the past eight years.³⁵ Many have analyzed the Hungarian red sludge disaster within the context of a broader historical trajectory affecting much of Eastern Europe. They believe that accidents are lurking on the horizon throughout the region. In fact, on January 30th 2000, an event similar to the red sludge disaster in Hungary occurred in Romania. About 100,000 cubic meters of waste water containing cyanide gushed out of a gold mine reservoir in the northwestern part of the country into tributaries of the Tisza, another major Central European river, threatening lives and environment all along the river's route. A 2007 ICPDR study pinpointed 97 toxic industrial sites that had major contamination issues, with Hungary topping the list with 32 sites, Romania with 25, and Slovakia with 18.³⁶ This is partly a legacy of Soviet-era development policy.

Peter J. Hill documents the high-level of ecological devastation and deteriorating human health found once the Iron Curtain was lifted from over the region, bringing a number of startling facts to light. Children in parts of Poland were found to have five times more lead in their blood than their cohorts in Western Europe. In former East Germany, nearly 60% of the population was

³⁴ Dragoman, G. (2010, October 16). Seeing red in Hungary. *The New York Times*.

³⁵ Bilefsky, D. (2010, April 25). Socialists in Hungary are ousted in elections. *The New York Times*.

³⁶ Bilefsky, D. (2010, October 13). Besides Hungarian sludge, potential troubles lurk. *The New York Times*. Also Kanthak, J. (2000, April 12). The Baia Mare gold mine cyanide spill: causes, impacts and liability. *Greenpeace International*. Retrieved from: <http://www.reliefweb.int/rw/rwb.nsf/db900SID/ACOS-64CNGF?OpenDocument>.

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maligned by respiratory ailments, with 4 out of 5 children in one particular city developing chronic bronchitis by seven years of age. Hill goes further to expose the destruction of two major Lakes as a result of Soviet planning. In 1957, the decision was made to locate paper mills on the shores of Lake Baikal in Russia due to its proximity to forests and the availability of large quantities of water it provided. Inevitably, the wastewater emanating from the pulp factories was discharged directly into the lake, contaminating a 23-mile area. The destruction of the Aral Sea is also instructive. Diversion of massive quantities of water from two rivers that fed the lake for irrigation projects to help the Soviet Union become self-sufficient in cotton production has led to its rapid reduction in size. Once larger than all but one of the Great Lakes, from 1960 to 1990 the area of the Aral Sea diminished 40% and its volume 66%.³⁷

This level of environmental degradation and human suffering was the result of a particular ideology that treated the socialist state as infallible. The legitimacy of the state was based on its claims of technical capacity and ability to provide and protect its people rather than on its accountability to them. In fact, official discourses often depicted society as an extended family, with the state playing a parental role over its citizen-children. In terms of the environment, “the ‘party-liner’ view, advocated by Party officials during the socialist era, viewed environmental problems as a problem of private greed and short-sightedness to be corrected by state ownership and central planning.”³⁸ The people were not participants in the planning process, and thus did not have the right to know what the state was doing to the environment in the name of development. Often the actions of state-run corporations and communist governments were clouded by institutional opacity and bureaucratic closure. Essentially the

³⁷ Hill, P.J. 1992, pp. 321-322.

³⁸ Harper, 2001, p. 119.

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accountability frameworks that operate as checks on state power in democratic societies were virtually nonexistent throughout Eastern Europe and the Soviet Union.³⁹

Besides communist state policies, the movement towards free market capitalism in the 1990s throughout the region shares blame for the lax regulation of industrial practices. For many people in Central Europe, the transition to a new political and economic reality was a negotiated process that largely excluded them.⁴⁰ This seemed to be the case particularly with environmental regulation of business. Many environmentalists throughout the region began speaking of ‘wild capitalism’ and ‘eco-colonialism,’ referring to feelings that the recent political changes had opened the area to the importation of technologies in the name of development that had been rejected in the West as detrimental to both environmental and human safety. The general lack of environmental regulations, legislation, or public awareness of environmental issues meant the region was ripe for western European companies, multinational corporations, and domestic entrepreneurs to make profits. After 1989, any efforts by the state to regulate market forces were criticized as remnants of the previous totalitarian system. “If state socialism was mostly characterized by power through the incalculable, professionally ungrounded, and politically unchecked decisions of the state, the present is characterized by...power through the ‘nondecisions’ of a fragmented state held in check by the private sector.”⁴¹ Hungary became simply one case of this new status quo. Again, profit making became ascendant over accountability to the public where state-planning once had been.

The recent landslide victory of Orbán’s Fidesz party was a result of the failures of the Hungarian Socialist Party’s numerous neoliberal economic reforms, its general obsequious

³⁹ Harper, 2001, p. 119-120.

⁴⁰ Smith, C.S. (2006, November 1). Memo from Hungary; from velvet to fringe in post-Soviet Central Europe. *The New York Times*.

⁴¹ Harper, 2005, pp. 229-230.

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orientation towards corporate interests, and numerous corruption scandals surrounding former Prime Minister Ferenc Gyurcsány's government over the past eight years.⁴² Interestingly enough, the *Magyar Szocialista Párt* (MSZP), are not only successors of the communist party that ruled Hungary from 1956 to 1989, they were also responsible for many of the liberal free market policies implemented after the fall of Soviet-style Communism.⁴³ "In eastern Europe capitalist transformation has been closely entwined from the start with 'spontaneous privatization,' the euphemism for the appropriation of state firms by socialist managers and other insiders."⁴⁴ Often the relationship between governments implementing the privatization of state-run enterprises and those acquiring them is one of collusion, thus removing the incentive for government to regulate these industries moving forward. When the history of the company responsible for the disaster in Hungary is examined in more detail later on in the paper, the numerous issues around establishing accountability will become clearer. In any case, the failure in government oversight regarding the safety of the aluminum plant cannot clearly be attributed to the current Fidesz party, but may instead be the legacy of unaccountable state-planning and conversely unaccountable privatization under democratically elected former-communists turned free market entrepreneurs.

Also diluting the governments accountability for the oversight of the reservoir are holes in the E.U.'s regulatory framework. In order to join the E.U., Central and Eastern European countries were expected to invest heavily in cleaning up their environmental hazards. According to Mihaela Popovici, a former Romanian Environment Ministry official, environmental problems were often hidden due to fears of stalling integration into the E.U. "Other experts argued that the European Union, which is known globally for a cautious regulatory philosophy that often puts it

⁴² Anievas, A. (2010, July 07). Less than revolutionary. *The Budapest Times*.

⁴³ Ishiyama, 2000, pp. 881. Also Toole, 2003, p. 108.

⁴⁴ Cruz and Seleny, 2002, p. 211.

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at odds with industry, had nevertheless been too lax in monitoring and enforcing environmental rules in its new members states from the east.” Accession to the E.U. in 2004 created a false sense of security in terms of meeting environmental and industry regulation standards. In fact, MAL, the company responsible for the red sludge disaster, was given a permit in 2006 by the E.U. even after having been fined numerous times until 2003 for going beyond permissible levels of red sludge in its reservoirs. Though Hungary’s environmental laws had designated the red sludge as toxic, the E.U. regulations did not. Initially the E.U. sought to establish tough mining regulations, but the industry lobbied to prevent the red sludge from being declared toxic. When Hungary became part of the E.U., the standard was relaxed. The owners of MAL returned the focus on the Hungarian government, stressing that the company and its reservoir had been declared safe by government agency inspectors on September 23, only weeks before the reservoir wall collapsed.⁴⁵ This finger-pointing between the Hungarian government and E.U. officials displays the lack of clarity in regards to who is responsible for regulating industries engaged in hazardous conduct, which makes determining who is to be held accountable by the public quite murky.

Company Faces Questions of Criminal and Financial Accountability

Where the government had been successful in both responding to the disaster and effectively communicating to the public, the company responsible for the reservoir, *Magyar Alumínium Termelő és Kereskedelmi Zrt* (MÁL Zrt), was a complete failure. It waited nearly 24 hours after it was clear that a disaster had occurred to issue a statement. The director of the company, Zoltán Bakonyi, told the media that “there was ‘no need to fear’ because the materials were ‘in no way dangerous or harmful.’ He likened the red mud...to ‘paint’ that could be easily

⁴⁵ Bilefsky, D. (2010, October 13). Besides Hungarian sludge, potential troubles lurk. *The New York Times*.

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washed off.”⁴⁶ This was despite the fact that hundreds of people had been transported to hospitals because of serious burns and irritations due to contact with the material. The company argued that the reason it did not consider the sludge hazardous was because it had not been classified as such under EU regulations. The company offered 10,000 forints or \$510 to compensate each family affected by the disaster, earning the contempt of the public.⁴⁷ For Morehouse, companies bear the primary responsibility for managing their hazardous material. “The first line of defense in coping with industrial hazards lies in industry itself. A company making a hazardous product or using a hazardous process is almost certain...to know more about that product or process than anyone else,” which makes Bakonyi’s statements about the sludge highly problematic.⁴⁸

What also becomes an issue is determining culpability for the disaster itself. How could Bakonyi and MÁL Zrt not know that the reservoir was vulnerable to a breach? A resident, “Róbert Léhmann, told MTI [the Hungarian news agency] that the owners of the alumina plant must have known the dam was about to break. He demanded to know why the villages had not been alerted and told to leave.”⁴⁹ Immediately after the disaster, efforts to determine fault emerged. Hungarian Prime Minister Victor Orbán made a statement the day after the wall was breached that the spill was likely caused by human error. “We do not know of any sign which indicates that this disaster would have natural causes,” Orbán said. “And if a disaster has no natural causes, then it can be considered a disaster caused by people.”⁵⁰ MAL countered the Prime Minister’s claim by declaring that there was never a sign that the reservoir was going to collapse, and that the northern wall’s failure was the result of heavy rains overloading the

⁴⁶ (2010, October 12). Anger against firm in wake of disaster. *The Budapest Times*.

⁴⁷ (2010, October 14). Waltzing with disaster: the Danube basin is littered with accidents waiting to happen. *The Economist*.

⁴⁸ Morehouse, 1987, p. 24.

⁴⁹ (2010, October 11). “Homes, lives ruined by toxic spill.” *The Budapest Times*.

⁵⁰ (2010, October 5). “Hungary declares emergency after red sludge spill.” *Reuters*.

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reservoirs capacity, thus making the event a natural disaster. On October 7th, Orbán stated that he was skeptical of the alumina company's claims, and that a reservoir like that one does not simply collapse but likely deteriorated over time.⁵¹ On the same day the government's website made it known that Hungary's National Investigation Bureau would open a criminal inquiry examining whether the company operating the reservoir followed all regulations and conducted all necessary inspections. The government's position was that the tragedy was not a natural disaster, but the result of human negligence.⁵² The government seized corporate documents to determine whether the reservoir was professionally built and utilized.⁵³ According to Duna Televizio, one of Hungary's two public television stations, several YouTube videos prior to the rupture depict the general poor state of the reservoir with rusted and seemingly unstable walls.⁵⁴

On October 11th, Bakonyi was arrested on charges of criminal negligence leading to a public catastrophe, with the Hungarian PM arguing that the disaster was a matter of placing profit over the safety of people. "There's probable cause to suspect that there were persons who had been aware of the dangerous weakening of the storage pond walls,' Prime Minister Viktor Orbán said, 'but they thought, because of their private interests, that it was not worth mending them and hoped the disaster wouldn't happen.'"⁵⁵ If convicted, Bakonyi could have faced a sentence of up to 10 years. The government's actions against Bakonyi seem to fit the framework for what Bovens calls hierarchical accountability, whereby one individual is held responsible to account for the actions of the company. "The process of accounting begins at the top. It is the CEO or commander in chief who assumes complete responsibility and thus is held accountable in

⁵¹ (2010, October 7). "Viktor Orbán visits Kolontár and Devecser to meet with locals." *Duna Televizio*.

⁵² (2010, October 7). The Hungarian government uses coordinated efforts in red sludge disaster recovery. *Ministry of Public Administration and Justice*. Retrieved from http://www.kim.gov.hu/english/activities/briefing/20101008_an4.html

⁵³ (2010, October 11). Homes, lives ruined by toxic spill." *The Budapest Times*.

⁵⁴ (2010, October 7). Viktor Orbán visits Kolontár and Devecser to Meet with Locals. *Duna Televizio*.

⁵⁵ Bilefsky, D. (2010, October 11). Hungary arrests official, citing role in red sludge. *The New York Times*.

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external forum.” This is because all the lower members of the organization or institution are accountable internally to their superiors. If subordinates’ inappropriate actions lead to detrimental consequences outside of the institution, it is the fault of the organization’s leaders because they did not hold those they have authority over accountable. “The process of accountability [therefore] occurs within the strict lines of the ‘chain of command.’”⁵⁶

That same day legislation was drafted and voted upon that would legalize the government seizure of the MAL as a result of the emergency situation. National Directorate General for Disaster Management chief, Gyorgy Bakondi, was declared disaster relief commissioner and placed in charge of the company. The government believed that it was necessary for the plant to be reopened because lack of operation would mean billions of forints of damage to generators and other vital equipment. The plant was deemed an essential component of the local economy, employing over 1,100 people. When suppliers and trickle-down effects were taken into consideration, its economic contribution was believed to be even greater.⁵⁷ On October 16th the plant was reopened.⁵⁸ The government must have made a calculation that it would potentially be held accountable for deteriorating economic conditions whether or not decline was a result of the disaster and not failed government policies.

Politics Place Doubt on Process of Establishing Corporate Accountability

While Orbán’s actions seem somewhat appropriate considering the extent of the disaster and the likelihood of the company’s negligence, unfortunately they are ensconced within a broader narrative that places doubt on the claim that the government was simply seeking to establish accountability. One lens through which the government’s actions can be analyzed is

⁵⁶ Bovens, 2006, p. 19.

⁵⁷ Hodgson, R. (2010, October 18). Flip-flop on red mud spill plant re-opening. *The Budapest Times*

⁵⁸ (2010, October 16). Hungary spill plant reopens. *Aljazeera*.

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that which depicts Orbán and his ruling coalition as right-wing nationalists. According to reporter Alexander Anievas of the *Budapest Times*, the Fidesz leaders have sought to use nationalism as a means to gain greater shares of the national vote. In one instance, the government called for all public institutions to display a ‘statement of national cooperation’ no smaller than 50 by 70 centimeters.⁵⁹ The takeover of MAL is represented as the first steps towards renationalizing previously state-owned industries, with Orbán positioning himself as fighting for the public against corporate power and greed. Since the fall of Soviet communism and the ascendancy of supposedly free market economics, large domestic and foreign multinational corporations have used their leverage over the economy to block legislation unfavorable to their interests. The Orbán regime plans on launching a series of major taxes targeting these economic entities, amounting to nearly 360 billion forints or 1.3 billion Euros in the next year. “Prime Minister Viktor Orbán wants to see an end to the earlier set-up of the influential economic players calling all the shots...From now on the government will establish the rules of play when it comes to regulating the economy.”⁶⁰ Peter Rona, a Hungarian economist, views these actions as a power grab in which Orbán is using every possible opportunity to concentrate economic and political power in the hands of the government.⁶¹ For some, the tough action taken against MAL’s owners is simply part of a political ploy to galvanize support for the regime.

Another narrative that is tangential to the previous one focuses on the political rivalry between Orbán and the outgoing Hungarian Socialist Party Prime Minister, Ferenc Gyurcsány. When the history of the company in question is analyzed, and its links to Gyurcsány are illuminated, questions about the neutrality of the government’s actions become necessary.

⁵⁹ Anievas, A. (2010, July 20). The new party state, Fidesz style. *The Budapest Times*.

⁶⁰ (2010, November 22). Pressure groups left flat-footed. *The Budapest Times*.

⁶¹ Bilefsky, D. (2010, October 11). Hungary arrests official, citing role in red sludge. *The New York Times*.

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During communism, the aluminum industry was one of the most productive sectors of the economy, which made the government's assets in this sector quite attractive for company managers and others with political ties during the transition towards a free market economy. These companies became prime targets for 'spontaneous privatization,' propelling those able to finagle their way into owning these assets into positions of great wealth. Árpád Bakonyi, father of the arrested Zoltán Bakonyi, was one of those individuals, amassing a fortune of 16.5 billion forints, making him the 28th richest individual in Hungary.⁶² According to New York Times reporter Dan Bilefsky, the arrest of the younger Bakonyi "reveals the complex intersections of business and politics within the state companies that were privatized in a rush in the 1990s." Bakonyi, the elder, happens to also be business associates with the recently departed PM Gyurcsány.⁶³ In three companies which Gyurcsány has ties to, Mosonmagyaróvár's Motim, Bauxit Banyavegyonkezelő Kft, and Elso Magyar Timfoldipari Kft, Bakonyi has been identified as having partial ownership stakes. After the disaster, Zoltan Bakonyi revealed to the press that a company belonging to Gyurcsány was a supplier to the plant where the disaster occurred. "The story of Mal would seem to be a classic example of 'red capitalism,' in which former communist apparatchiks (and their offspring) become business titans while retaining deep ties to their old networks on the political left."⁶⁴ The new Prime Minister, Orbán, has publicly vowed to take action against what he has called the 'oligarchs,' businessmen like Bakonyi who used political collusion and corruption to get rich.⁶⁵

⁶² D'Amato, E. (2010, October 8). The murky business behind Hungary's red sludge crisis. *Realdeal.hu*. Retrieved from <http://www.realdeal.hu/20101008/the-murky-business-behind-hungarys-red-sludge-crisis>.

⁶³ Bilefsky, D. (2010, October 11). Hungary arrests official, citing role in red sludge. *The New York Times*.

⁶⁴ D'Amato, E. (2010, October 8). The murky business behind Hungary's red sludge crisis. *Realdeal.hu*. Retrieved from <http://www.realdeal.hu/20101008/the-murky-business-behind-hungarys-red-sludge-crisis>.

⁶⁵ (2010, October 14). Waltzing with Disaster: The Danube basin is littered with accidents waiting to happen. *The Economist*.

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When assessing what Bovens refers to as the procedural adequacy of the government's actions against Bakonyi, Orbán's orientation towards MAL and his political agenda present a number of problems. The immediate actions of the government seem to violate the notions of due process and proper judgment procedures outlined in Bovens' work. The government did not give the actor, Bakonyi, sufficient opportunity to explain and justify his conduct. Emphasis was placed on passing judgment before a case had been made. It is also debatable whether or not the government could even pass sound judgment on the situation considering that it is not an independent neutral party. The government's initial arrest of Bakonyi and subsequent charges do not seem to meet the minimum requirements of an accountability procedure.⁶⁶

The courts speedy release of Bakonyi seems to support this line of reasoning. On October 12, a judge dismissed government demands that Bakonyi be charged with negligence because the prosecutors could not demonstrate that he had not established adequate emergency warning and rescue plans. His lawyers claimed that MAL had plans approved by government authorities and that there were no incriminating testimonies against Bakonyi by employees.⁶⁷ On October 19, the Veszprém County Court upheld the decision by the lower court, but new charges of reckless endangerment that led to a fatal accident were brought up against Bakonyi by the government.⁶⁸ On October 20th the lawyer Gyorgy Lehmann offered to launch a class action lawsuit against MAL in the name of the government, seeking 23 billion forints to cover property damages, clean-up of the contaminated river, and construction of the dike after the disaster. This amount is separate from what he believes the company owes residents in compensation. Lehmann believed that it was in everyone's interests to proceed with the lawsuit as soon as possible. "He argues that

⁶⁶ Bovens, 2006, p. 23.

⁶⁷ Gorondi, P. (2010, October 13). Zoltan Bakonyi: Hungary sludge flood CEO released from jail without charges. *The Huffington Post*.

⁶⁸ (2010, October 19). Zoltán Bakonyi is still a free man. *Duna Televizio*.

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the clean-up efforts, which are currently being paid for by the state and by donations from the public, should come from the coffers of Mal Zrt., and by waiting to sue in the future, this cost is being placed unfairly on groups who shouldn't have to pay."⁶⁹ On November 5th, the government made an announcement that compensation procedures would be initiated against the company for causing the accident. This elicited a retort from MAL the next day contending that the government had unconscionably laid responsibility for the disaster on the company before final expert opinions or court rulings had been finalized. MAL's legal representative argued that this was without precedent.⁷⁰ The hastiness with which charges against Mal were pushed by the government has seemed to highlight the political undertones of the situation, tainting the process of establishing the company's accountability for the disaster.

General Difficulties Holding Corporations Accountable for Disaster

Beyond the politics marring the legal process in Hungary, broader issues related to determining such accountability in industrial disasters abound. According to Bovens, legal accountability should be a straightforward process. It generally involves clearly delineated responsibilities legally bestowed upon a clearly identified authority figure. The process of determining legal accountability is generally based on detailed legal standards defined by civil, penal, or administrative statutes.⁷¹ Others believe that this clarity becomes muddled in cases involving industrial accidents. They make a particular distinction between traditional criminal law and regulatory criminal law, and how the latter is often enforced quite differently from the former in ways that make determining blame and meting out appropriate sanctions particularly problematic. "This kind of regulatory criminal law is seen by some as quasi-criminal, falling

⁶⁹ (2010, October 20). A Siófok lawyer wants to sue Mal Zrt for 23 billion forints. *Duna Televizio*.

⁷⁰ (2010, November 11). Company faulted in sludge flood says government blame too early. *MTI*.

⁷¹ Bovens, 2006, p. 17.

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within a nebulous ‘public welfare’ category, and for this reason seen as second in force and power and distinct in meaning from traditional criminal law.”⁷² The case of the cyanide spill in Romania is instructive.

It was clear that many questions had been raised regarding the safety of the Baia Mare dam prior to the disaster in 2000. In 1999 Romanian authorities had made the management of the mine aware of such risks after former employees came forward to reveal that there were serious problems with the construction of the reservoir. Rather than being constructed with rock materials, the walls were constructed using high quantities of sand material, thus increasing the probability of leaks. In autumn of that year, five cows in a village near the reservoir died after a leak from the gold mine’s pipe system. That winter a deputy from another neighboring town reported an additional breach in the wall. After the catastrophic spill the following year, the Romanian government and the owners claimed that record high temperatures were responsible for the conditions that caused the dam to rupture.⁷³ Aural SA, the German financed joint venture between a private Australian and a state-owned Romanian mining company, fought vigorously to avoid liability for the devastation. Inevitably the company was only fined \$166 by the government because it was deemed to be in compliance with Romanian regulatory standards.⁷⁴ Recall that a similar argument was being brought forward by MAL in Hungary. On October 27th, the first independent investigation into the disaster, commissioned by MAL, came to the conclusion that the breach was due to slippage in the soil below the reservoir, an unforeseen circumstance that the company could not predict or control.⁷⁵ On November 16, a Hungarian

⁷² Hall et al., 2004, pp. 5-6.

⁷³ Kanthak, J. (2000, April 12). The Baia Mare Gold Mine Cyanide Spill: Causes, Impacts and Liability. *Greenpeace International*.

Retrieved from <http://www.reliefweb.int/rw/rwb.nsf/db900SID/ACOS-64CNGF?OpenDocument>

⁷⁴ Krista. 2005, p. 225.

⁷⁵ (2010, October 27). Was the red sludge catastrophe caused by a sinkhole or slippage? *Duna Televizio*.

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newspaper, *Népszabadság* uncovered documents that the Inspectorate for Environment, Nature and Water may have given official sanction to the company to fill the reservoir beyond its structural limits.⁷⁶

Conclusion

When Hungarian public opinion was gauged, it was made clear that the people were nearly in full support of the Orbán administration's actions. The polling agency Szazadveg found that 86% of the population believed that the government handled the red sludge disaster either excellently or well. Nearly the same percentage of people agreed with the government's decision to take control of the company's assets, while 70% lay responsibility for the failed reservoir wall on MAL.⁷⁷ Analyzing the case of the Hungarian red sludge disaster using Bovens' various accountability frameworks, it is evident that the Hungarian government was rather successful in responding to the disaster and communicating its actions to the public, which explains why it received such high evaluations in the forum of public opinion. While the Orbán administration's actions in terms of holding MAL accountable criminally and economically seemed to fall short of meeting the minimal requirements of an accountability procedure, they were very popular with the public. It is probably the case that failing to act aggressively against the company, while meeting standards of fairness and justice, would likely have hurt the administration politically. The high level of public support for the government's actions in this regard make this evident. Bovens' makes the claim that it is often the case that accountability of one form will likely conflict with accountability of another. An accountability arrangement may be judged as adequate and beneficial from one perspective, but insufficient and detrimental from another.

⁷⁶ (2010, November 16). Was the reservoir filled beyond its capacity with an official 'blessing?' *Duna Televizio*.

⁷⁷ (2010, October 19). Survey shows Hungarians satisfied with government handling red sludge disaster. *MTI*

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Therefore, establishing accountability arrangements is primarily about determining what standards society seeks to uphold and enforce.⁷⁸

Another element that must be taken into account is whether or not, moving forward, the government of Hungary will engage in disaster risk reduction (DRR) measures to prevent another industrial disaster like the recent one. For Olson et al. there are host of problems with establishing accountability for DRR that makes this unlikely. First, there are often no forums to which government is accountable to explain its DRR actions because generally formal accountability measures exist for bad decisions rather than non-decisions. While the recent disaster in Hungary may place DRR on the agenda in the short term, neither the public nor the media are likely to sustain the long-term focus necessary to reduce vulnerabilities that are imbedded in the country's complex structural and historical legacies. The fact that reducing risks to disaster requires a number of actors both in government and the private sector also makes assigning blame for disasters when they occur problematic. While in the case of Hungary's toxic spill responsibility seems rather straightforward, in reality, a number of actors, over an extended period of time, played a role in fostering the environment that resulted in the ecological disaster. And finally, though disasters bring the question of accountability to the forefront of society's thoughts, often establishing clear DRR-accountability is clouded by attempts by potentially responsible parties to pass blame onto one another.⁷⁹ This seems to be the case in Hungary's recent disaster, thus decreasing the likelihood that systematic DRR framework will be established and implemented by the government to adequately address the country's risk to industrial disaster.

⁷⁸ Bovens, 2006, p. 30.

⁷⁹ Olson et al., 2011, p. 63.

Bibliography

- Anievas, A. (2010, July 07). Less than revolutionary. *The Budapest Times*.
- Anievas, A. (2010, July 20). The new party state, Fidesz style. *The Budapest Times*.
- Bilefsky, D. (2010, April 25). Socialists in Hungary are ousted in elections. *The New York Times*.
- Bilefsky, D. (2010 October 10). Fears of more red sludge in Hungary. *The New York Times*.
- Bilefsky, D. (2010, October 11). Hungary arrests official, citing role in red sludge. *The New York Times*.
- Bilefsky, D. (2010, October 13). Besides Hungarian sludge, potential troubles lurk. *The New York Times*.
- Bovens, M. (2006). Analysing and assessing public accountability: A conceptual framework. *European Governance Papers (EUROGOV)*, 1-37.
- Cruz, C., & Seleny, A. (2002). Reform and counterreform: the path to market in Hungary and Cuba. *Comparative Politics*, 34(2), 211-231.
- D'Amato, E. (2010, October 8). The murky business behind Hungary's red sludge crisis. *Realdeal.hu*. Retrieved from <http://www.realdeal.hu/20101008/the-murky-business-behind-hungarys-red-sludge-crisis>.
- Dragoman, G. (2010, October 16). Seeing red in Hungary. *The New York Times*.
- Farazmand, A. (2007). Learning from the Katrina crisis: a global and international perspective with implications for future crisis management. *Public Administration Review*, 67(1), 149-159.
- Garnett, J. L., & Kouzmin, A. (2007). Communicating throughout Katrina: competing and complementary conceptual lenses on crisis communication. *Public Administration Review*, 67(1), 171-188.
- Gorondi, P. (2010, October 13). Zoltan Bakonyi: Hungary sludge flood CEO released from jail without charges. *The Huffington Post*.

Hungarian Toxic Red Sludge Spill

Hall, A., Johnstone, R., & Ridgway, A. (2004). Reflection on reforms: developing criminal accountability for industrial deaths. *National Research Center for Occupational Health and Safety*, 26, 1-104.

Harper, K. M. (2001). Chernobyl stories and antropological shock in Hungary. *Anthropological Quarterly*, 74(3), 114-123.

Harper, K. M. (2005). 'Wild capitalism' and 'ecocolonialism': a tale of two rivers. *American Anthropologist*, 105.2, 221-233.

Hill, P. J. (1992). Environmental problems under socialism. *Cato Journal*, 12(2), 321-335.

Hodgson, R. (2010, October 18). Flip-flop on red mud spill plant re-opening. *The Budapest Times*

Ishiyama, J. (2000). Candidate Recruitment, Party Organization and the Communist Successor Parties: the case of MSzP, the KPRF, and the LDDP. *Europe-Asia Studies*, 52(5), 875-896.

Kanthak, J. (2000, April 12). The Baia Mare gold mine cyanide spill: causes, impacts and liability. *Greenpeace International*. Retrieved from:
<http://www.reliefweb.int/rw/rwb.nsf/db900SID/ACOS-64CNGF?OpenDocument>.

Morehouse, W. (1987). Citizen, worker, and state: the search for new paradigms in coping with industrial crisis. *Organization Environment*, 1(3), 22-33.

Olson, R.S., Sarmiento, J.P., & Hoberman, G. (2011). Establishing public accountability, speaking truth to power and inducing political will for disaster risk reduction: 'Ochos Rios + 25'. *Environmental Hazards*, 10, 59-68.

Padgett, T. (01 March 2010). Chile: prepared for the quake but not the tsunami. *Time*.

Rosenthal, E. (2010, October 7). Site in Hungary was listed as risky. *The New York Times*.

Hungarian Toxic Red Sludge Spill

Smith, C.S. (2006, November 1). Memo from Hungary; from velvet to fringe in post-Soviet Central Europe. *The New York Times*.

Toole, J. (2003). Straddling the East-West Divide: Party Organization and Communist Legacies in East Central Europe. *Europe-Asia Studies*, 55(1), 101-118.

(2010, March 6). Chile sacks oceanography chief over failure to issue tsunami warnings. *The Telegraph*.

(2010, October 5). Hungary declares emergency after red sludge spill. *Reuters*.

(2010, October 5). Sludge flood—Four dead include children. Retrieved from <http://redsludge.bm.hu/?paged=9>. 5:26 pm.

(2010, October 6). Disaster management situation, action taken, resources. Retrieved from <http://redsludge.bm.hu/?paged=9>. Also Dragoman, G. (2010, October 16). Seeing red in Hungary. *The New York Times*.

(2010, October 06). Huge ammonia spill paints towns red as a state of emergency is declared in three counties. *Duna Televizio*.

(2010, October 7). Information on the accidental pollution and related mitigation measures of the 'red mud spill at Ajka.' Retrieved from <http://redsludge.bm.hu/?paged=9>.

(2010, October 7). Information on the state of the rivers in Hungary. Retrieved from <http://redsludge.bm.hu/?p=21#more-21>.

(2010, October 7). Report for the international press. Retrieved from <http://redsludge.bm.hu/?paged=9>.

(2010, October 7). The Hungarian government uses coordinated efforts in red sludge disaster recovery. *Ministry of Public Administration and Justice*. Retrieved from http://www.kim.gov.hu/english/activities/briefing/20101008_an4.html

(2010, October 07). Viktor Orbán visits Kolontár and Devecser to meet with locals. *Duna Televizio*.

(2010, October 8). A deadly deluge. *The Economist*.

(2010, October 11). "Homes, lives ruined by toxic spill." *The Budapest Times*.

(2010 October 11). The reservoir at Kolontár cannot be saved. *Duna Televizio*.

(2010, October 12). Anger against firm in wake of disaster. *The Budapest Times*.

Hungarian Toxic Red Sludge Spill

(2010, October 12). Kolontár dike completed, engineers to check it today. *Duna Televizio*.

(2010, October 12). Redsludge dot com. *The Budapest Times*.

(2010, October 14). Waltzing with disaster: the Danube basin is littered with accidents waiting to happen. *The Economist*.

(2010, October 16). Hungary spill plant reopens. *Aljazeera*.

(2010, October 19). Survey shows Hungarians satisfied with government handling red sludge disaster. *MTI*

(2010, October 19). Zoltán Bakonyi is still a free man. *Duna Televizio*.

(2010, October 20). A Siófok lawyer wants to sue Mal Zrt for 23 billion forints. *Duna Televizio*.

(2010, October 27). Was the red sludge catastrophe caused by a sinkhole or slippage? *Duna Televizio*.

(2010, November 11). Company faulted in sludge flood says government blame too early. *MTI*.

(2010, November 16). Was the reservoir filled beyond its capacity with an official ‘blessing?’ *Duna Televizio*.

(2010, November 22). Pressure groups left flat-footed. *The Budapest Times*.