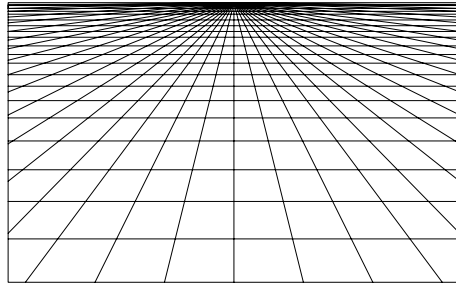




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THE TURKISH CYANIDE CONTROVERSY: A SOCIAL UPTAKE OF RISK

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ABSTRACT

“Profit expectancy” has become the driving motive in most of the human actions in our modern world. However the idea of unlimited consumption and profit gained by technological development have been challenged and limited by the unintentional social consequences of technological change and the risks that are inevitably tied to them. People are now aware of the pollution, environmental degradation, resource depletion and many other risks that come together with modern technologies. However, since the perceptions of every individual differ from one another, debates about a risk issue inevitably turn into conflicts. The purpose of this study is to analyse such a conflict that aroused in Bergama, Turkey due to the siting of a gold mine using cyanide in its production. This analysis is aimed to be made with the help of the conceptual tools of the social arena theory. Moreover, by employing an integrated study of the realist and constructivist approaches to risk, this particular social experience of risk is aimed to be studied for a more comprehensive analysis

Keywords : Risk, risk perceptions, social arena theory and conflict resolution.

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1 INTRODUCTION

When the commercial interests have become the main driving motive behind most of the human actions, the meaning of development has been modified and the world has been separated according to economic criteria. Nowadays it is more important to know whether countries are (economically) “developed” or “less developed” than to know about their climate, their culture or their religion. Even science and technology, which once served to the intellectual development of individuals, have become crucially important areas of economic activity. They have become the tools for an absolute domination in industry and in many other economic activities.

The main concern regarding the supremacy of economics over all aspects, including the development of science and technology, has been that the present situation will inevitably cause irreparable damage to the environment. Having experienced quite an amount of catastrophic technological failures that result in environmental degradation, societies become more concerned and critical about the situation. The idea of unlimited consumption and profit gained by technological development have been challenged and limited by the unintentional social consequences of technological change and the risks that are inevitably tied to them. People now understand that technologies also generate environmental degradation, pollution and resource depletion.

The most prevalent way societies explore the possibility of limiting technology has been through the study of risk (Winner; 1986). Risk studies gained importance when the concerns about the hazard potential of industrial activities increased drastically. Politicians and policy makers started to seek ways to regulate increasingly dominating technology to protect their citizens from natural and technological hazards. However, this is something difficult to achieve, since the arena in which discussions of risk take place is highly

politicized and value dependent. Mostly, powerful economic and social interests dominate the arena rather than objective assessments about the risk in question. Cultural factors also enter the arena in risk evaluation. When it comes to large-scale technologies and their threats to human health and to the environment, discussions about risk evaluation turn into conflicts that are difficult to resolve.

In this thesis, I want to open up such a conflict. My main focus is a multinational gold mine in Bergama, Turkey. The use of cyanide in the extraction process of the mine has started a discussion about the risks to the environment and to the health of the locals in 1990s. Due to the differing views and perceptions of the related actors, these discussions never settled down. When the Turkish government surpassed a law and let the mine operate despite the contrary court decision, the discussion turned into a controversy. The locals started to feel ignored and lost their trust to the policy makers. The government, being suppressed by the heavy economic and social problems, stuck to its decision. Meanwhile, the mine tried harder to communicate with the locals in order to convince them. However due to different values, perceptions and interests of the actors and the social and economic reasons I want to study in this thesis, the cyanide conflict has not been resolved. The purpose of this thesis is, therefore, to explore how the social experience of a physical cyanide risk turns into a conflict due to differing perceptions, social, economic and political conditions.

1.1 What is cyanide?

The term "cyanide" refers to numerous compounds, both natural and human-made, having the chemical group CN, that is, one atom of carbon and one atom of nitrogen.

Hydrogen cyanide is a colorless gas or liquid with a faint, bitter almond odor. Sodium cyanide

(the processing chemical which mining companies use) is a colorless solid with a slight odor of bitter almonds (Drillbits&Tailings; 2000, Volume 5, Number 3)¹.

Cyanide is the most popular chemical used by mining corporations to extract gold from the ore, despite the fact that leaks or spills of this chemical are extremely toxic to fish, plant life and human beings. Popular concern over this technique has focused on the lethal impact of cyanide. Short-term exposure to high levels of cyanide can cause coma and/or death within 30 minutes to 1 hour. The lethal dose for humans is 1-3 mg/kg of body weight. Long-term exposure to sublethal doses causes irritation of the eyes, loss of appetite, headaches and dizziness, and damage to the nervous system and thyroid gland (Korte and Coulston; 1997).

Cyanide impacts fish at far lower concentrations. Concentrations as low as five micrograms per liter have been found to inhibit fish reproduction, and adverse impacts have been reported at levels of ten micrograms per liter.

1.2 Importance of “Gold” for a developing country

Gold, as a symbol of economic power, has fascinated human beings for thousands of years. It has always been the proof of power promising its owner a future as bright as its sunny color. It is the only metal that does not get destroyed or lost, even if it is exposed to fire. On the contrary its quality improves when it is made red-hot and its charming color and precious quality last forever. This may be the main reason why, for centuries, people rushed to it, dreamed about it, tried to possess it and used it to get anything they wanted.

For a developing country such as Turkey², every additional money added to the budget is welcomed. Struggling with many economic, social and political problems, the policy

¹ Available in URL http://www..moles.org/ProjectUnderground/drillbits/5_03/vs.html

² Based on gross national income (GNI) per capita, every economy is classified either as low income (less than \$755), middle income (subdivided into lower middle \$756 – 2955 and upper middle \$ 2956-9265), or high income (more than \$9266). According to this criterion, Turkey is classified as a developing country with an upper-middle income. (www.worldbank.org)

makers are forced to rely on economic activity with quick returns and tend to ignore the environmental concerns. When considerable amount of gold (a total of 24 tons) was explored in Bergama region, it was seen as an economic issue rather than a possible environmental problem. The mine was expected to generate around \$300 million during the time of operation. The total estimated benefit was \$415 million to the local economy and \$675 million³ to the national economy.⁴ Moreover, the mine would provide a considerable amount of jobs to the local people. From a politician's point of view, these were enough to let the mine operate. However the people living next to the mine were more concerned about their health and their environment. They were living on agriculture and the siting of the mine was a threat to their personal, social and economical future. They did not want to sacrifice their future due to profit oriented policies of the government.

1.3 Motive and methodology

The reasons of the local resistance to the gold mine in Bergama and the movement of people to change the existing policy have been argued in Turkey for more than a decade. The controversy about the issue is still not resolved. I find this situation more risky than any physical risks. If this controversy can not be resolved successfully, it can create more controversies and the policy makers will loose their credibility further. This is the main reason why I want to examine the way a "physical" risk is perceived by the actors of the Bergama case and why the debate between them turned into an unresolved conflict. This examination may help to understand the perceptions and the motives of the actors.

The factors influencing these perceptions and trust given to other actors are also of great importance. Being originally graduated from "economics" discipline and having worked in a state institution that prepares financial policies of the banking sector in Turkey, I have

³ Nearly 2% of the total external debt credited by multilateral organizations (my calculation)

⁴ see (www.ovacik-altin.com)

experienced the great influence of the “economy” in the decision making process. In this thesis, I am going to present the economic problems as the most important factor influencing policies including the technological ones. In accordance to my case study, I will also analyse how societies react to these decisions made by the policymakers on their behalf and how these issues turn into conflicts that are difficult to solve. Achieving this analysis and putting forward the possible reasons why a conflict has not been solved successfully, may contribute to a future STS⁵ study that will analyse the ways of solving a risk conflict where most of the actors are satisfied. Analysing the reasons of failure in a risk conflict may help to find a feasible and successful way to help the actors meet on a common ground.

To achieve the above mentioned objective, I have examined relevant literature on risk and risk perception issues together with the literature on cyanide and its hazards to the environment. I have also looked at some documents and official reports of “Scientific and Technical Research Council of Turkey” (TUBITAK) that will be discussed in the following chapters and counter reports prepared by different NGOs⁶. As mentioned above, there are still ongoing debates about the Bergama case in Turkey. Various newspapers and web pages that are dealing with this subject have also been examined in addition to the academic and official literature.

This case study also contains non-participant observation in the gold mine and interviews with the experts of the mine and the local people. This was the most important and interesting part of this study for me. Having read a lot of literature and documents about the subject and constructed my own “subjective” opinion about the continuing debate, I was looking forward to going to Bergama and seeing the source of this debate with my own eyes. It was frustrating for at first since I have only one contact person in Bergama who kindly let

⁵ Science, Technology and Society

⁶ Non Governmental Organizations

me stay with his family during my research. Living with a local family turned out to be a great gain for my study, since I had the chance of experiencing new ideas and learning new knowledge about the case that I have not thought of before. Luckily, my contact person was a recently retired state officer who used to have contact with the villagers living adjacent to the gold mine. It meant that I would not have trouble in finding some local villagers to interview. But I was not that lucky in finding someone from the gold mine to interview. So I decided to go to the entrance of the gold mine alone, without any contact person, and ask for permission to go inside and have a look.

Contrary to my worries of not getting a permission, the personnel of the mine kindly invited me into the mine. I was able to conduct a face to face, semi-structured, recorded interview with the “Community Relations Officer and Trainer” of the mine. I was also permitted to conduct an informal group interview with four female workers who were being trained that time, but it turned out that they were trainees who were not working in the mine for the time being. My request of interviewing some workers on the job was not accepted due to security reasons, but since I managed to gather more information than I needed, it did not create any problems in the analysis. I was also given some documents and cd-roms about the operation of the mine and invited to a guided tour. I wore some security clothes and a helmet. The tour had to be quided and held in a company car due to security reasons, but I was permitted to get off the car in some stops and take some pictures to observe the method they are using in the mine.

I left the mine with a positive impression and some more names from the “Executive Board” of the mine to interview and headed to the nearby villages. The interviews with the local people turned out to be more difficult than I thought eventhough I had a contact person. I went to two different villages nearest to the mine; Narlıca and Ovacık. The best way to find people who are willing to talk about any issue in Turkey is to go to a “local cafe” where most

of the men of a village are gathered to talk, drink tea and play cards during the day. I did the same thing. It was more like a group interview with the local people who were mostly peasants. I only asked my research question and let the talk start. They were reluctant to talk about the issue at first, since “they were fed up with sharing their opinion and seeing that nothing is done”. But after a while, they started to tell me their opinions about the case which are mostly critical. They turned out to be too talkative and helpful. They also introduced me to a man who was a worker.

After the informal interviews with the locals, I left Bergama for one more interview with an executive board member of the mine. His office was in Izmir, a city that is two hours away from Bergama. I conducted a semi-structured, formal, recorded interview about the risk management system of the gold mine.

1.4 Limitations of the study

Since the “risk of cyanide” in Bergama has become a highly debated and manipulated technical, social, political and economic issue, it was difficult to find dependable, objective data and people to interview. Furthermore the data I found about the technique used in the mine was too technical for me to understand. For this reason, I did not try to show if the related mine using that technique should be closed or not. Rather, I would like to analyze the factors affecting the locals’ perception of the mine as a “risk”.

Another thing that can be seen as a limitation to the study is the difficulty of getting honest answers from the peasants when talking as a group, since anyone having an opposite opinion may feel uncomfortable to express it due to group pressure. The same thing is also relevant for the workers who did not want to express any opinion about their working place since the peasants were majority in the group. However, in the archives of various newspapers, I could find some interviews made by a number of peasants. This source of

information helped me solve this limiting problem. With this additional source, I was able to get a broader picture about the perceptions of the peasants.

1.5 Other considerations

Ethical considerations and confidentiality are of major importance in my research. I assured the people I interviewed that the results of the research will be shared with them if they would like it and the name of the individuals will be kept confidential if requested. The manager and the community relations officer of the mine did not request confidentiality, however other workers interviewed inside and outside of the mine and the peasants wanted to be held confidential since “they did not want any trouble”. Due to this fact, all the names will be kept confidential unless they want their names used in any published document in the future.

1.6 Structure of the thesis

Following this introductory chapter, I am going to set up my theoretical framework in chapter two. I will first give some definitions of relevant risk concepts. In the second part of this chapter, I will demonstrate the way I will approach the “cyanide” controversy by integrating the realist and social constructivist approaches to understand the motives lying behind the risk perception of societies. Then I will establish the arena theory to open up an environmental conflict. In the third chapter, I will give information about the actors in the cyanide controversy of Bergama. The fourth chapter will set the stage of this controversy and clarify the rules of the arena. To set the stage, I will provide some background information of the arena, in this case of Turkey. Since the major actors of the case are the agrarian peasants and the gold mine, it will be useful to give information about the importance of the agriculture and the mineral industry in Turkish economy. In this part, I will also provide some economic

problems faced by Turkey when the cyanide controversy took place, since these problems were the main reasons affecting the relevant policies and the perceptions of the actors. This chapter will also provide the technological and environmental policies and related laws as the rules of the arena that limit the actions of the actors. The fifth chapter is the case study of Bergama. Here I will tell the story of “how the siting of the gold mine has turned into a conflict” . In the sixth chapter, the case will be analysed in the light of arena theory to examine the locals’ perception of risk and the reasons that are turning the issue into an unresolved conflict. The last chapter will provide a summary of the main arguments and the concluding points of this thesis.

2 THEORETICAL BACKGROUND

In this chapter, I will concentrate on the concepts within science, technology and society studies (STS) that I find crucial to approach to the “risk” issue. First I will briefly define some relevant concepts that will be helpful in building a theoretical approach. Then I will demonstrate the way I will approach the “cyanide” controversy in Bergama. To achieve this demonstration, I will not use a specific theoretical approach since one theory alone can not provide a thorough and valid understanding of the social experience of risk. Societies do not label a technology as “risky” just by considering the knowledge they have about the possible physical consequences. As Ortwin Renn has also pointed out, the social experience of risk is shaped by a number of factors. The handling of risk information by individuals and social groups according to their values, the social and cultural meanings of risk causes and effects and the structural and organizational factors are as important as the knowledge about physical consequences of a risky technology (Renn; 1992b, 179). Analysis of the factors that affect people’s perceptions of risk necessitates an integration of different perspectives. For this reason, I will attempt to integrate different approaches to “risk” within the STS field to create a common network of linkages between them.

The field of risk studies have stemmed from the practical needs of industrial societies to regulate increasingly dominating technology and to protect their citizens from natural and technological hazards. Technological failures such as Chernobyl, Bhopal, Seveso, Windscale⁷ and many more have drawn the public attention to the hazard potential of industrial activities and the related risks to the human beings and their environment. For this reason, the study of risk has always been at the intersection point of academic, governmental and industrial interests (Krimsky and Golding; 1992). Numerous approaches to risk, both practical and

⁷ See Jasanoff(1994), van Eijndhoven(1994) and Wynn(1996b)

theoretical, have emerged in different research areas and academic disciplines (Luhmann; 1991).

2.1 The concept of risk

The immediate controversy in “risk” related issues start to be felt as early as people attempt to define what a risk is. There is no commonly accepted definition for it neither in the sciences nor in public understanding. I am going to clarify these differing definitions when I deal with different approaches to risk. In this part I want to give a general view of what a risk is.

In most contexts, risk refers to a danger of unwanted events and defined as the possibility of physical or social or financial harm/detriment/loss due to a hazard⁸ within a particular time frame (Renn et al; 2000, 14). Therefore, we can talk about two general aspects of risk; it involves some danger, harm or loss and it has an aspect of uncertainty. (Hogsnes; 2001)

Risks can be classified into two groups, as voluntary and involuntary, regarding the type of exposition. In voluntary risks, individuals can choose to be exposed to the related risk. Smoking and drinking alcohol can be some examples of this type. Involuntary risks, however, are risks which various groups are exposed to without any individual control. Environmental risks, for example, are involuntary since they are exposed by the society as a whole whether the individuals have a permission or control over the event or not.

2.2 Other concepts related to risk

After giving a general definition of risk, it is crucial to define risk related concepts such as risk assessment, risk management and risk perception.

⁸ Hazard is a broader concept than risk that incorporates the probability of the event happening and the impact or magnitude of the event on society and environment (Cutter, 1992)

Risk assessment denotes the scientific process of defining the components and implications of a hazard in precise, usually quantitative terms (Rohrman et al; 2000, 14). In technical risk assessment, this means calculating the probabilities for unwanted consequences.

Risk management refers to the process of reducing risks (either the hazard itself or its consequences) to a level tolerable by the society and to assure control, monitoring and public communication (Morgan; 1990).

Risk perception refers to people's views on risks within the social sciences. People receive and process physical signals (such as witnessing an explosion), as well as information about possible outcomes of future human actions or natural events, and they tend to form respective opinions and attitudes towards risk sources and impacts (Rohrman et al; 2000). Therefore in risk perception, people's judgements and evaluations of hazards they (or their environment) are or might be exposed to is very important. Both experiences and beliefs have to be considered. Therefore, subjectivity and value dependency are integral parts in risk issues.

When the judgements and perceptions about any issue differ due to different values, the emergence of controversies among individuals is inevitable. In many societies, severe conflicts in evaluation of risk have emerged, especially with respect to large-scale technologies such as chemical industries and nuclear energy (Beck; 1992). The concerns of risks caused by human actions are peaked in risks to human health and to the environment. The assesment of such risks are considered to be very complex since there is a considerable gap between how experts think about risks and how non professional people judge and evaluate risks (Rohrman et al; 2000). Furthermore, cultural factors are crucial for people's risk evaluation. What criteria are appropriate for dealing with risks? Should context be important in dealing with risks or should society adopt a uniform criteria for it? Who should be involved in designing these criteria? The responses to these questions depend on the

perspectives of different actors in the societies (Bradbury; 1989). Thus societal decision making about risk issues has become more and more complicated (Renn et al; 2000).

It would be easy to make a decision if we consider that the risk is seen by the society as an objective consequence of an event and calculated as the probability of well-defined adverse effects. Then, ordering risks according to “objective” magnitude of harm, and allocating resources to reduce the greatest risk first would be sufficient. If on the other hand we consider that risk is perceived as a cultural or social construction, risk management activities would be set according to different criteria, and priorities should reflect social values and lifestyle preferences (Renn; 1992a, 54).

These two views represent two extremes in risk perspectives. And it is difficult in the real world to consider that risk is either perceived as totally objective or socially constructed. The pure objective realistic view of risk is not applicable and there is no single country in which uniform criteria for all risk types have been established. Not all types of risks are evaluated in the same manner. Definitely, there are times when some social considerations undermine the possibility of a physical harm. Similarly, the pure relativistic view of social constructivism is also difficult to justify since many nations have adopted very similar standards and risk reduction priorities despite major cultural and social differences. (Renn; 1992a). Under these circumstances, these two perspectives must be integrated to complement each other. Renn has mentioned that it has been the case and technical risk analysis has become complemented by social-science approaches in order to explain how individuals and societies at large socially construct their view on undesirable realities. (Renn et al; 2000, 17)

In the following two sections, I will review these two extreme approaches, namely realist and constructivist. In fact it would be inappropriate to group or make a classification of different thoughts. As I mentioned above, no one can be considered as totally realist or constructivist. But my intent is to provide a conceptual distinction. Therefore I am going to

classify the approaches to risk according to their level of objectivity in risk perception. Then I will provide an integration of these two perspectives for a better approach to explain social responses to risk.

2.3 Realist approach to risk

The realist approach involves a cognitive science perspective, which has developed and is expressed principally in technical and scientific approaches. Technical analyses of risk, emerging from fields such as engineering, statistics, psychology, epidemiology and economics, bring together the notion of danger or hazard with calculation of probability (Lupton; 1999). They define risk as the product of the probability and consequences of an adverse event (Bradbury; 1989).

In this approach, therefore, risk is seen as an “objective” hazard, threat or danger that exists and can be measured independently of social and cultural processes. A potential physical harm to human beings or ecosystems is anticipated, it is averaged over time and space and the probabilities are measured by using the relative frequencies. (Renn; 1992a)

Since risk is seen as an objective phenomena, the perceptions regarding risk should not differ among individuals. As another scholar, Sheldon Krimsky, points out, this approach defines the “perceived” risk as the outcome measurement of the interaction of an individual with the external environment mediated through cognitive structure (Krimsky; 1992, 18). Therefore an event with a negative consequence is evaluated by the mind of the individual and should be perceived as risky by all the rational individuals. Since physical harm is perceived as an undesirable effect at least for most people and society as a whole, technical risk analyses can be used to avoid or modify the causes that lead to these unwanted effects. (Renn; 1992a, 59). These technical analyses can also be used to reduce conflicts that may emerge in health or environmental issues. Much of the realist literature addresses the perceived

reasons of such conflicts between scientific, industrial and government organizations and the public in relation to the health and environmental risks created by science, technology and industry. As Deborah Lupton discusses:

The public is traditionally described as having been concerned about environmental risks mostly over the past half century or so and as becoming more critical and challenging regarding the activities of industry and government. (Lupton; 1999,18)

The literature on risk addressing this problem attempts to identify the social and psychological factors influencing greater public reaction and distrust to institutions and lay people's assesment of risk with the objective to create an understanding between the public and the institutions. However, since the nature of risk is taken for granted, one important question has been ignored in this approach: How are risks constructed as social facts?

This approach, therefore, tends to reduce the meanings and behaviours associated with risk perception and assessment to the individualistic level. Cognitive science does not generally take into account the symbolic meanings (created through the social world) that humans give to things and events. As Lupton further discusses, perception in realist perspectives is limited to how people see and understand the world through their senses and brain-functioning (Lupton; 1999, 22). People tend to be considered outside the cultural and political frameworks, relationships, and institutions within which they construct their beliefs and behaviours. Individuals are therefore represented as emotion-free actors, self-interested, ideally behaving in response to their carefully considered calculations of risk as it affects them individually. But is this really the case?

2.4 Constructivist approach to risk

Realist approach is being criticized by sociocultural perspectives for neglecting the social and cultural context which risk is understood and negotiated. The constructivist approach involves these criticisms and is emerged from disciplines such as cultural anthropology, philosophy, sociology, social history, cultural geography and science and technology studies. (Lupton; 1999, 17).

The knowledge about risk, according to this approach, depends on the sociocultural contexts in which this knowledge is created, whether in relation to scientists' and other experts' knowledges or lay people's knowledges. Scientific knowledge or any other knowledge, according to this approach, is never value-free but rather is always the product of "a way of seeing". As Lupton points out, a risk is not a static, objective phenomenon, but is constantly constructed and negotiated as part of the network of social interaction and the formation of meaning (Lupton; 1999, 29). Expert judgements of risk, rather than being the "objective" and "neutral" therefore "unbiased" assessments which are usually mentioned by the realist approach, are regarded as equally constructed by implicit and cultural processes as are lay people's judgements. Risks are not seen as realities lying outside of society and culture, but as integration of meanings, logics and beliefs. We can only know and experience risks through our specific location in a particular sociocultural context. This approach to risk highlights the importance of the embeddedness of understandings and perceptions of risk, and emphasizes that these understandings and perceptions often differ between actors who are located in different social contexts. Renn expresses this difference between perspectives as:

Issues such as health threats, inequities, fairness, control, and others can not be determined by "objective" scientific analysis but only reconstructed from the beliefs and rationalities of the various actors in society (Renn; 1992a, 71).

There are still differing debates among the constructivists about the nature of risk. In this point, for the sake of conceptual distinction, I will divide the constructivist approach into two perspectives according to their description of risk as Lupton did as “weak” and “strong” constructivist perspectives. (Lupton; 1999, 30)

2.4.1 “Weak” and “strong” constructivist perspectives

The weak social constructivist position sees risk as cultural mediations of “real dangers and hazards”. It is, therefore, objective but is inevitably mediated through social and cultural processes and can never be known in isolation from these processes. For the strong constructivists, by contrast, a “hazard” or “danger” itself is also seen as socially constructed and perceived as risk when human actors recognize and label it as such. Nothing is risk in itself, what we understand to be a “risk” is a product of historically, socially and politically constructed “ways of seeing it”. (Nielsen; 1996).

Those who have adopted social constructivism, regardless of the strength of their position, tend to argue that a risk is never fully objective or knowable outside of belief systems and moral positions. If a “risk” is understood as a product of perception and cultural understanding, then to draw a distinction between “real” risks (as measured and identified by experts) and “false” risks (as perceived by members of public) is irrelevant. Both perspectives of the constructivist approach are describing forms of risks, and both lead to certain actions (Lupton; 1999). What is important is the way in which these descriptions are constructed and acted. The questions that might be asked about risk by the constructivist approach, therefore, are very different than the realist one: What statements are used to construct certain kinds of knowledges about risk at a particular moment and social setting?, How do new discourses on risk emerge, cause other discourses and what are the effects of this for risk knowledges and subjects of risk? , How is risk understood in different sociocultural contexts? The answers to

these questions lies both in the realist and constructivist perspectives in “real life” situations. Therefore, I find it more descriptive to integrate these two perspectives in order to analyse the social experience of risk in the cyanide case that is subject to this thesis.

2.5 An integration

An integration of two extreme approaches appears to be necessary for both the analysis of risk experience and prescription of risk policies. The social experience of risk includes the perception of actual damage, but it is more focused on the evaluation of the risk context and the associations between the risk and social or cultural artifacts. If all societies cared about was reducing the amount of physical harm done to its members, realist approach would be sufficient to explain risk perception. However, societies are not only concerned about risk minimization. Sometimes a financial compensation of a physical risk can change the perceptions of people and eliminate whatever risk they are perceiving. Harry Otway, another scholar who underlines the importance of social perspectives on risk in explaining these differences in perceptions argues that there may be times when people are willing to suffer harm if they feel it is justified or it serves other goals. At the same time they can reject even the slightest chance of being hurt if they feel the risk is imposed on them or violates their other attitudes and values (Otway et al; 1982). Therefore, an integration of realism and constructivism can provide a more productive approach in examining the social experience of risk.

Ulrich Beck is one of the scholars who has a similar approach. He proposes that realism and constructivism can very well complement each other although their notions seem incompatible. Only by thinking risk in terms of reality, or a becoming-real (a virtuality) as Beck calls it, can social materialization be understood. Equally, only by thinking risk in terms of construction can we understand its indefinable ‘essence’ (Beck; 1999,136).

Risks must clearly be brought into consciousness and made real to be perceived as an actual threat, and this includes cultural values and symbols as well as scientific arguments. ‘‘Real’’ consequences are always mediated through social interpretation and linked with group values and interests (Renn; 1992a). Risks, therefore, are at the same time real and constituted by social perception and construction. Beck adds to this point that their reality comes from ‘‘impacts’’ that are created from ongoing industrial and scientific production. Knowledge about the risks, in contrast, is tied to the history and symbols of one’s culture and the social fabric of knowledge. This is one of the reasons why the same risk is perceived and handled politically so differently between different nations. (Beck; 1999, 143)

Beck has also given a sociological analysis of the deep structure of risk apprehension that invades modern culture (Beck; 1986). In our times, industrial or nuclear risks create a lack of responsibility and compensation. According to Beck, modernization has been the creator of such risks that can not be controlled and compensated. He further argues that the risks of the old industrial society were limited and could be compensated for or insured against. The new technologies of the modern state are proved to be guilty and the gains of technical and economic progress can be ignored because of the nuclear, chemical, ecological and biotechnological risks they produce (Beck; 1992, 10).

Aside from the physical consequences of modern technologies and their uncontrollable nature, the perceptions of individuals are also affected by some social factors. Competence and trustworthiness of organizations or individuals, are among the essential parts of risk perceptions. Expert risk analyses usually misrepresent the open-ended, indeterminate nature of these factors and treat them as if they could be handled by statistical rules. They adopt models that assume social and organizational behaviour follows dependable laws. However this assumption is not valid in all of the risk situations. As Brian Wynne argues:

“The imposition of basic risk meanings and models upon people by the experts and related institutions creates an objective social threat to those people and increases whatever risk they perceive” (Wynne; 1992a, 282).

This is an inevitable response caused by lack of critical reflexive awareness of the expert institutions. The social anxiety regarding a risk tends to be misinterpreted by experts as ignorance or irrationality. This enhances the public’s sense of being threatened by institutions that do not respect its identity and rationality which further enhances their sense of risk.

It is also increasingly accepted that public understanding of science and public risk perceptions are not so much about public capabilities of understanding technical information, but about the trust and credibility they are prepared or forced to give to scientific experts or institutions (Wynne; 1992a). However this perspective is incomplete in the sense that trust and credibility reflect the nature of the social relationships between the actors concerned. Wynne argues that the best explanatory concepts for understanding public responses to scientific knowledge are not trust and credibility per se, but the relationships, networks and identities from which these are derived. These social identities are incomplete and open to continual (re)construction through negotiation of responses to social interventions such as the experts represented, therefore trust and credibility are dependent upon the nature of these evolving relationships.(Wynne; 1992a, 282)

Controversies and conflicts start to emerge when people tend to feel more ‘insecure’ in their relationships with other social contexts such as experts. They start to ask how institutions that are supposed to manage risks can be trusted and risky activities be accepted although it is evident by past experience that they are the ones involved in putting people’s social identities at risk. Sometimes trust and credibility can also become the object of a ‘deconstruction’.

People may act as if they trust these institutions since they are dependent on them. However as Wynne points out, this trust is only skin deep (Wynne; 1992a).

So far, I have focused on the approaches that study and explain risk perception. It is also crucial to look at how controversies and conflicts about risk issues are handled. At this point it will be useful to focus on another approach that deals with what seems to be missing in the above discussed approaches: the structural factors that shape interactions among social groups and influence the outcome of social conflicts over risk (Renn; 1992b). Therefore, I am going to use the social arena approach to risk to analyse the structural factors that turn risk issues into conflicts.

2.6 The social arena of risk

A social arena is a metaphor to describe the symbolic location of political actions that influence collective decisions or policies. The arenas describe the political actions of all social actors involved in a specific issue. These issues can be controversial political decisions such as siting of facilities that cause environmental degradation. Since the perceptions of actors are mostly contradictory, these decisions usually turn into conflicts. Ortwin Renn is an important scholar who has worked on these conflicts and developed the social arena theory in risk issues. He argues that using the metaphor of an arena, social conflicts can be described as a struggle between various actors on the arena stage, controlled by a rule enforcement agency (usually a governmental institution) and observed by professional “theater critics” (the media) who interpret the actions on the stage and transmit their reports to a larger audience (Renn; 1992b, 181).

Many analyses of risk debates focus on the perception of risks of the various actors without acknowledging the social, political, or cultural context within which the risk debate takes place. The arena metaphor, on the other hand, focuses on both the structural rules of the

arena and the perceptions of the actors (Otway et al; 1982). This is the reason why I want to use the arena theory in my analysis of a social conflict regarding an environmental risk.

The actors are among the most important elements in an arena. The center stage of an arena where the debate takes place is occupied by the principal actors. These actors seek to influence policies by their actions. Another important element in an arena is the set of rules that are limiting the actions of the actors. These rules are classified by Renn as formal and informal; formal rules are coded and monitored by a rule enforcement agency and informal rules are learned and developed in the process of interactions among actors. Formal rules are laws, acts and mandated procedures and informal rules are regulatory styles, political climate of group interactions and role expectations (Renn; 1992b, 182).

The basic claim of this approach is that social groups in a political arena try to maximize their opportunity within a given set of rules to influence the outcome of the collective decision process by mobilizing social resources. These resources can be money, power, social influence, value commitment and evidence. They may be used to gain attention and support of the general public, to influence the arena rules, and to become superior to other actors. Renn describes these resources and argues that:

Money provides incentives (or compensation) for gaining support; power is the legally attributed right given to any actor and is used to impose a decision on others; social influence produces a social commitment to the issue at hand in order to find support through solidarity; value commitment induces support through persuasion and trust; and evidence can be used to convince people. (Renn,1992b, 184).

The more resources a group can mobilize in an arena, the more likely it is that it dominates the conflict resolution process and gets its point of view incorporated in the final decision (Dietz et al; 1989). Resource availability determines the degree of influence for

shaping policies. The more powerful actor is usually the one who dominates the arena and influences the final decision making.

To sum up, this approach focuses more on the ability of the actors to mobilize resources. Conflicts in an arena are certainly grounded in differences between goals, values and interests. Whether the true motives of the actors can be measured is an open question. However, since no inference about the actor's intentions or motivations has been made, there is no need to answer this question (Renn, 1992c).

2.6.1 Risk arenas

Risk arenas operate under similar structural rules like any other arena. All social groups feeling that their interests or values are affected by a specific risk source may be compelled to enter the arena. Their success depends on their ability to mobilize resources.

Most risk debates center around three themes (Renn1992c; Rayner et al 1987):

- factual evidence and probabilities;
- institutional performance, expertise and experience;
- conflicts about world views and value systems.

If the debate is created due to factual arguments about risk probabilities and the extent of potential damage, which is the first level, the problem may be the lack of technical knowledge on the part of the public. In this case, informing the public with expert opinions can solve the problem. Therefore, participation is equivalent to successful riskbcommunication. However it is rare in real conflicts. (Renn; 1992c)

A more intense type of debate is about institutional competence to deal with risks. This type of debate does not rely on technical expertise, although reducing scientific uncertainty may help. The emphasis on personal and institutional judgements and experience requires more than risk communication; it needs input from stakeholder groups and affected

populations. Approval in this situation is gained by showing that the risk management institution has been competent, effective, and open to public demands. (Renn; 1992c)

The most complex level of conflict is defined along different social values, cultural life styles, and their impact on risk management. In this case, neither technical expertise nor institutional openness are adequate conditions for public approval. Decision making here requires a fundamental consensus on the issues underlying the risk debate. (Renn; 1992c)

2.6.2 Conflict resolution in a risk arena

The nature of the conflict resolution methods should vary depending on which level the risk debate takes place. If the value issues are not resolved, even the best technical expertise can not overcome social, cultural and political conflicts.

There is a strong tendency for risk management agencies to re-frame higher level of conflicts into lower level ones. This is an attempt to focus the discussion on technical evidence, in which the agency is fluent (Dietz et al, 1989). The society is considered to be incapable of understanding technical information and therefore the experts try to bring the discussion in a level that they can handle. However this causes a further loss of trust towards the institutions and experts. This situation has been acknowledged by Renn. He argued that citizens who participate in the discourse are forced to use first level (factual) arguments to rationalize their value concerns. Unfortunately this is often misunderstood by risk managers as ‘irrationality’ of the public. Frustrated, the public retreats to due process and routinization of the process and departs with disillusion and distrust of the system (Renn;1992c, 9).

To avoid this deterioration in public trust and to have a successful resolution of a conflict, the actual level of debate has to be established. Once it is established, an interactive method for resolving the conflict needs to be organized and structured. The participation of public representatives may be helpful and crucial however it is not very likely. Procedures of

mediation, negotiation and arbitration have gained more and more popularity in many countries as a means to incorporate public concerns into decision process without sacrificing technical expertise or rational reasoning. Renn gives these procedures as tools for a successful conflict resolution and clarifies them. He argues that in negotiation, parties are invited to communicate with each other and to design potential compromises on their own. In mediation, however, a mediator is needed to design the compromises for the parties. Finally in arbitration, parties are invited to exchange arguments and try to convince the arbiter that their view point is correct. These forms of conflict resolution can also be combined for a successful conflict resolution.

He further argues that the conflict is admitted to be solved successfully if the objective of the conflict resolution process was accomplished at the end, and if all participants are satisfied with the outcome and the process itself. (Renn; 1992c,11)

2.7 How to approach the cyanide controversy of Bergama

This study analyses the social experience of risk when a chemical plant is sited in Bergama, Turkey and examines if the conflict that evolved accordingly is resolved successfully. The knowledge of possible physical consequences of the cyanide-using gold mine, the handling of risk information by individuals and social groups in Bergama, the socially constructed and differing risk perceptions and the structural and organizational factors can be better analysed by integrating the realist and constructivist approaches to risk. My analysis of the Bergama case will also integrate the social, political, economical and cultural factors that affected the credibility and trustworthiness of related actors and caused a controversy between different actors. Therefore, to open up the controversy, I will use the social arena approach to risk issues. I will first give information about the relevant actors in the cyanide controversy, then I will introduce the arena and its rules. Since Turkey is the main

arena of the cyanide controversy in Bergama, some relevant background information is needed to set up the stage. The main actors of the controversy are the peasants living on small scale agriculture and the multinational mining company. Therefore, I will give some background information about the importance of agriculture and the mineral industry. The limiting rules of the arena are also of great importance. In this case, they are the laws regulating the foreign investments and the policies concerning the technology and environment. In this respect, I will give some information about the arbitration law regulating the foreign investments in Turkey and the policies regarding the technology and environment. Since the economic conditions of Turkey in 1990s have affected the decisions of policy makers, it is also crucial to look at these conditions for a better analysis of the conflict. After setting the stage by giving the relevant background information about Turkey, I will tell the story of Bergama. In the end, I will demonstrate whether the conflict has been resolved in a successful way.

3 THE ACTORS OF THE CYANIDE CONTROVERSY

The siting of a gold mine in Bergama, Turkey has turned into a national debate in 1990s. The risks involved in the extraction process of the mine caused the debate turn into a highly discussed conflict. In about 15 years, many voices and opinions have been heard about the issue and the controversy could never be settled down. Although the voices have been lowered by the final decision of the Turkish government of the time, the conflict had not been resolved, it even got worse. The details about the issue will be given in the following chapters. In this chapter, I will briefly identify the actors that took part in the Bergama conflict.

The actors who are central in the Bergama controversy from 1989 to 2004 are a multinational gold mining company, the peasants of nearby villages and local people of Bergama, some NGOs, local scientists, the government and Scientific and Technical Research Council (TUBITAK). International Monetary Fund (IMF) also has a peripheral role in influencing the decision made by the government. Furthermore the media has been closely involved in the debate by their uptodate coverage of the issue.

3.1 The multinational gold mine

Ovacik Gold Mine was owned by Eurogold Mining Ltd. when it first came to Bergama in 1989 for gold exploration. It was founded in August 1989 and jointly owned by Normandy Poseidon (Australian) and Metal Mining (Canadian) Corporations. In 1999, Normandy had bought the shares of the other partners and changed the name of the company to Normandy Mining Ltd. In 2002, Normandy was bought by the biggest gold producer company of the world, namely Newmont Mining Corp. This American company has a total gold reserve of 2840 tons and 23 gold mines in 10 different countries.⁹ In August 2004, due to

⁹ URL www.newmont.com/en/about/history/index.asp

the conflicts and the reaction of the locals, Newmont Normandy Mining Ltd. announced that the company could not be productive as anticipated and Ovacik Gold Mine was sold to the Canadian Frontier Pacific Ltd. for \$45 million that is one third of the total investment done by the former owner.

3.2 The locals

The locals are the central actors in the cyanide conflict. There are 17 villages located in the 10 km radius of the Ovacik Mine. The mine is immediately adjacent to Ovacik village, with a population of 350 people. The next closest villages are Camkoy and Narlica with a total population of 1000. The surrounding villagers are highly dependent on small-scale agriculture and mostly grow tobacco, cotton and olives. There is also a touristic town called Bergama with a population of 50000 located 9 km. away from the mine.

3.3 The government and the “Scientific and Technical Research Council of Turkey” (TUBITAK)

The Scientific and Technical Research Council of Turkey (TUBITAK) is a governmental organization that was established in 1963. The main purposes of the council are to determine the science and technology policies of Turkey and to organize, coordinate and promote basic and applied research in line with the national targets of economic development and technical progress.¹⁰

The cyanide conflict that started with the siting of the gold mine was peaked with a principal decision given by the 57th Government of Turkish Republic. The Cabinet of the time, comprising a coalition of the Democratic Left Party (DSP), the Motherland Party (ANAP) and the National Movement Party (MHP) decided that Normandy Mining Company

¹⁰ URL www.tubitak.org.tr

could operate its mine due to a report requested from TUBITAK. The experts who prepared the report had concluded that Normandy had taken every kind of precaution to prevent cyanide used in the extraction process from damaging the environment.

3.4 The local scientists and NGOs.

Some local and international scientists have entered the cyanide debate by providing information to the local people about the possible hazards of cyanide. They came to the region to inform the people about their previous findings about other gold mines using cyanide throughout the world, and their findings were not confronting.

A scientific symposium on the subject of the proven consequences of the planned gold extraction (using cyanide) in Turkey took place at the Technical University of Istanbul by the initiation of the Dean of the Faculty of Mining Sciences, Prof. Dr. Eskikaya. More than 50 scientists from Turkey and Germany discussed the issue and presented their arguments in open debate for two days. In the final panel discussion of the symposium, the members of the panel concluded unanimously in Pergamon Declaration:

"Based on current evidence, including the technologies involved and a knowledge of the natural and cultural environment, the planned extraction of gold in the Bergama region is not acceptable."¹¹

There were also two NGOs that entered the debate when the government let the mine operate despite the court ruling. These NGOs were the Turkish Engineers and Architects Chamber Association (TMMOB) and the Association of Turkish Doctors (TTB).

¹¹ Symposium named as "Scientific Aspects of Gold Extraction Using Cyanide", June 26 – 27 1997. For more information see <http://www.infu.uni-dortmund.de/korte-goldmining/index2.html>

TMMOB was established in 1954 to represent the Turkish engineers and the architects and to help them share their professional knowledge and use it for the benefit of the society. There are more than 220.000 members of the organization who are graduates of Engineering, Architecture and City Planning.¹²

TTB was established in 1953 to protect and improve the state of public health, to try to provide the patients a first quality service with minimum cost and to protect the morals concerning health issues. 80% of Turkish doctors are the members of this association.

Both of these NGOs have reacted to the report prepared by TUBITAK. They have prepared a counter report, criticizing the remarks of the Assessment Report of TUBITAK. These reports will be discussed in the fifth chapter in more detail.

3.5 International monetary fund (IMF)

The IMF was established in the post-World War 2 era to stabilize monetary conditions of industrialized countries by providing “short term” financing to member states to enable them to correct temporary payment difficulties. (Vajpeyi; 1995)

During 1970s and 1980s, the scope and nature of the fund started to change. Since then, most of its advice and all of its credit have gone to the Third World Countries.

IMF is not a main actor in the cyanide conflict of Bergama. However, it had an influence in the government’s final decision. To secure an additional IMF loan agreement when the Turkey was hit by a devastating earthquake in 1999 and suffering from a severe economic crisis, International Arbitration Law was passed in the Parliament. This law is going to be clarified in the following chapter, however it is worth stating that this law was also highly debated since it was seen as a challenge to the national sovereignty and environmental protection.

¹² URL www.tmmob.org.tr

3.6 Summary

In this chapter, I have introduced the actors whose actions in a “risk” conflict will be analysed in the following chapters. I have only given very general information about every actor. More information concerning their motives, their perceptions, their movements and their relations with each other will be provided in the following chapters. This chapter gives background information for a better analysis of the conflict arouse between the actors of the arena. Before moving on to the analysis of my case study, I will set the stage in the next chapter, provide the economic, social and political situation of the time that affected the perceptions of every actor and present the arena that all the actors struggle.

4 THE SOCIAL ARENA IN THE CYANIDE CONTROVERSY

Under relentless economic and political pressures, the policymakers especially in the developing countries are often in conflict with the increasing demands to satisfy basic human needs like clean air, water, education, employment and satisfactory environmental quality. With the scarce economic and technical resources at their disposal, most of these policymakers have ignored long-term environmental concerns and aimed short-run economic and political gains (Vajpeyi; 1995). Frequently projects undertaken to improve economic conditions were the direct or indirect causes of environmental damage and debt repayments taken from international aid institutions aggravated the situation more (Taylor et al; 1992). The net results are political and economic instability and enormous pressure to rely on economic activity that offers quick returns rather than attending to longer term needs through environmentally sensitive development. Inevitably, natural resources as capital assets are highly vulnerable to this kind of pressure.

Less developed countries like Turkey wish to develop, to exploit their resources further. But important question here is not whether, but how they do so. Who will benefit from an intensification of economic activity and who can contribute to make that development sustainable? So far, the richer nations have played an important role in “Third World” development, not just because of the general constraints of the international economic system but through the particular actions of many private, often transnational, enterprises. (Taylor et al; 1992)

Shifting dirty technologies that have been banned or limited in Europe and North America to the developing countries where environmental regulations are loose or non-existent has become a common practice. Ann Taylor, an English politician, has admitted this

scenerio and put forward that, in 1980, The Brundtland Comission¹³ had reported that, the total of Third World exports to the OECD countries would have cost over \$14 billion more if their production had been subjected to American standards of pollution control. (Taylor et al; 1992, 55)

This indicates the kind of “savings” to be made by locating industry in environmentally unregulated areas which are invariably eager to encourage foreign investment. There are thus overwhelming arguments for assisting developing countries with the help of multinational companies, financially and technologically, towards greater development at less environmental cost. Yet present trends are not very promising. World trade, for example, is organized in a way that clearly favours the industrialized nations.

Foreign investment, on the other hand, is much more politically sensitive issue than trade since it essentially means exercising control over ownership of national assets and resources. In the post-war period, regulations were imposed on foreign investment due to past experiences where foreign firms not only took part in restrictive and predatory business practices but also interfered in the domestic political affairs of the host countries.¹⁴

When a foreign investor enters a host country, it is supposed to follow the regulatory measures of that country. Several countries have devised special measures for foreign investors (both negative and positive) to distinguish between the foreign and domestic investors. The discriminatory forms of regulatory measures on foreign investment differ in every country. For instance host countries often impose pre-admission regulations on foreign investment such as not allowing them in certain sectors of economy (for instance telecommunications, media, atomic energy), and putting general and sectoral equity limits on foreign investment. Concerned with sovereignty issues, the rationale behind pre-admission

¹³ In 1983, the Norwegian government, recognizing the increasing rate of environmental destruction, particularly in developing countries, decided to take action and suggested to the UN for a new commission to assess the state of the world’s environment and to examine the efficiency of the UN system in dealing with the ecological situation

¹⁴ URL (www.aprnet.org)

regulations is to ensure that foreign investors do not control productive and strategic sectors of the economy. However it is important to stress here that the pre-admission regulations are not usually confined to the developing and the under-developed countries

In Turkey, for example, almost all areas open to the Turkish private sector is also fully open to foreign participation. Foreign investments receive national treatment. The Treasury Undersecretariat screens foreign investment proposals, but this appears to be a routine and non-discriminatory process which does not impede investment or limit competition. Foreign shareholders are only restricted to 20% in broadcasting and 49% in aviation, telecom services and maritime transportation. In other sectors, 100% foreign ownership is permitted.

Foreign Direct Investments and the measures taken to regulate, in Turkish case to encourage them due to internal and external pressures that we are going to analyze in this chapter, are of primary importance in our case since one of the important actors of this case study is a foreign investment with a “risky technology”.

To get a better understanding of the case I am going to analyze in the next chapter, it is important to give a general picture of Turkey first. It is crucial to see how the relentless economic, social and political conditions of a country affect the policies, in this case technological policies, taken by the policy makers and change the public perception of accountability on the authorities and technocrats in a negative way. With this purpose, I am going to give general information about Turkey. Then I will concentrate more on the economic conditions of the time and the technological and environmental policies of Turkey when these policies started to change with the internal and external pressures towards more profit oriented aims.

4.1 General overview of Turkey

Turkey is a strategically located country between Europe and Asia with borders to Bulgaria, Greece, Syria, Iraq, Iran, Georgia, Armenia and Nahcivan. It has a total land area of 774.815 square kilometers. The population is nearly 70 million with a 1.7% growth rate. Over 73% of its 70 million people live in urban areas. Agriculture accounts for some 13% of its GDP¹⁵, industry for 25.4%, and the services for 61.6%.¹⁶

General Information about Turkey¹⁷

	1995	2002
Population(millions)	61.7	69.5
Poverty (% of population below \$1 a day)	-	2.0
Adult literacy rate (% of total population)	81.8	86.0
Urban population(% of total population)	63.7	66.6
GNI per capita (PPP,\$)	5300	6120
GDP Growth (1990-95 and 1995-2002,%)	3.2	2.0
Scientists and engineers in R&D (per mill.people)	261.6	305.5
Expenditures for R&D (% of GDP)	-	0.6

4.1.1 Agriculture

Agriculture is an important sector in Turkey's agenda. The importance of it for this thesis is also undeniable, since the main actors of the controversy that is subject to this thesis are peasants who are living on small-scale agriculture. Therefore, a minor change in the agricultural situation of the country will cause a major change in peasant's perceptions about

¹⁵ Gross Domestic Product

¹⁶ URL, (www.worldbank.org), as of 2002.

¹⁷ Sources: Country background information, UNESCO and World Bank (available at URL www.worldbank.org)

the case. It is, therefore, crucial to give some information about the present situation of the sector before analyzing the case.

Turkey has an export oriented agriculture sector and is largely self-sufficient. Of the available land, 32% is considered arable, 4% is occupied by permanent crops and 16% is used for permanent pastures. The climate is temperate with hot and dry summers and mild winters, allowing agriculture to flourish. Crops constitute 55% of the agricultural sector, livestock represents 34% and the remainder is split between forestry and aqua-culture. Key agricultural crops include wheat, pulses, cotton, citrus, tobacco, olive and sugar beets.

Historically, the agriculture sector has been the largest employer to the Turkish economy. However as Turkey diversified economically, agriculture has declined in importance as a result of rapid industry and service sector growth. The contribution of it to GDP has declined accordingly to 13% (in 2002) from 22.7% (in 1982) over years.

Exports of agricultural commodities accounted for 8.3% of Turkey's total export earnings in 2000 and were valued at \$2.2billion. Turkish exports of agri-food products totaled \$3.9 billion. Turkey continues to diversify its agri-food exports through the development of processing technologies.¹⁸

4.1.2 Mineral industry

Since one of the main actors of the controversy that is subject to this thesis is a foreign mining investment, it will be helpful to give some information about the mineral industry and the foreign investment policies of Turkey.

The geology of Turkey is extremely complex and is reflected in the diversity of its mineral deposits. Best known for its industrial minerals, Turkey is a major producer of refined borates and related chemicals, cement, ceramics and glass. A wide variety of primary metallic

¹⁸ URL, (www.worldbank.org)

minerals are produced as well, but output generally was not considered large according to world standards (Mobbs; 1996). The primary mineral sectors contribution to the economy traditionally has been slightly more than 1% of the gross domestic product (GDP). It was estimated that value-added secondary mineral commodities, including refined petroleum products, steel, cement, glass, and certain inorganic chemicals, accounted about 70% of the value of the nation's manufacturing output. Total (primary and secondary) mineral industry revenues were estimated to be about 15% of GDP (Mobbs; 1996). Capacity expansion projects are continuing at many secondary mineral production facilities. Most mineral exploration by international companies are for gold, copper and zinc (Mobbs; 1996).

4.1.3 Foreign direct investment

The flow of foreign capital into Turkey since it became a republic in 1923 can be considered in two periods. Between 1923 and 1950, existing operations of foreign capital were nationalized and no foreign capital was allowed into Turkey (Ural; 1987). After 1950s, foreign capital was seen as an important element in economic development, and some legal and administrative measures for attracting foreign capital were taken. Law 6224 for the Encouragement of Foreign Capital was passed in 1954. It was focusing more on the technical aspects of foreign private investment like the importation of foreign capital, the transfer of profits, etc. but the social and economic effects of investment were never mentioned.

The number of foreign investments increased in number after 1980s with the changes in financial policies of the country and the adoption of liberal and flexible foreign investment policies implemented by governments. (See Figure 1)

In 1990s, Turkey has taken part in the Multilateral Agreement on Investment (MAI) negotiations among OECD countries, and declared itself, with some reservations, to be ready to adopt it so as to attract more foreign investment (Treasury Undersecretariat; 1998). It was

in mid-1999 that Turkish government (including the President) and representatives of business began highlighting the necessity for the inclusion of the principle of international arbitration for investments into national legislation for further liberalisation, deregulation and restructuring of the economy, and thereby for foreign investment inflows¹⁹. A few months later the Turkish Parliament passed three constitutional amendments²⁰ in a difficult procedure that needs a two-thirds majority in a Parliament with 550 seats (Coban; 2002). The arbitration law adopted the arbitration method only for disputes arising from public service concession contracts and conditions between the Turkish state and the investor. Before the new law, administrative courts and the Council of State were seen as the mechanisms to be followed for the resolution of disputes between the state and the investor. The new legislation had, however, adopted arbitration proceedings functioning outside the jurisdiction of administrative law. Following these developments was the passing of the International Arbitration Law²¹ in Parliament. This law extended the scope of arbitration (which has become the settlement method not just for concession disputes but for any dispute the parties of which accept arbitration as the means of dispute settlement) (Coban; 2002). Although these laws are seen as a challenge to national sovereignty and environmental protection by a serious number of people in the Turkish society, trade unions, professional chambers and environmental organizations since national laws are being bypassed to protect the rights of capital, they are seen crucial by some international aid agencies (namely International Monetary Fund (IMF) and World Bank) for the economic development of the country.²² These laws were passed to smooth the way for an additional IMF loan agreement when the country was hit by a devastating earthquake in 1999 and suffering from a severe economic crisis. The economic conditions of the time are going to be analyzed in the following sections

¹⁹ See Cumhuriyet daily, 28/5/1999; 2/6/1999; 7/7/1999; Milliyet daily, 4/6/1999; Hurriyet daily, 7/6/1999).

²⁰ Law no. 4446, 13/8/1999

²¹ International Arbitration Law No. 4686, 21/6/2001

²² URL (www.worldbank.org)

deeply but it may be helpful to clarify the relations of Turkey with World Bank and IMF since these institutions affect the way policymakers' decisions about both financial and technological policies.

4.1.3.1 World Bank and IMF assistance

Turkey joined the World Bank in 1947. Since then, the Bank has assisted the Government of Turkey in overcoming a series of economic crises, and setting the country on a path of sustained and steady economic development, as well as improving the living conditions of its people. It supports Turkey's reform program with an extensive lending (See Figure2) and technical assistance together with analytical and policy "advice"²³. As of 2003, there are 16 ongoing projects with a total cost of 4.820 million USD.

The World Bank is known to have the most advanced environmental policy and practices of any aid organization. Although environmental concerns were not serious issues in its early years, not only for the World Bank but even for the United Nations, the Bank's activities and mission have been redirected and changed since 1970. However, the Bank is still being criticised for overvaluing the economic development and ignoring the environmental protection in its projects. Although the Bank may not have such an intent, it broadly defines "environment" due to economic priorities. This leaves a room to give a priority to development despite the environmental concerns. This criticism has also been acknowledged by a scholar, Dhirendra Vajpeyi, as:

Despite the environmental commitment of the World Bank, there still remain many practical obstacles in implementing these policies. And the Bank's definition of environment has been

²³ URL (www.worldbank.org)

too broad to have enough room to dodge the real issues related to environment. (Vajpeyi; 1995, 25)

Another organization that Turkey has loan agreements with is IMF. It has been a member of IMF since March 11, 1947 and as of August 2004, the total amount credited by the IMF is 10.1 billion USD (See Figure 3). With respect to environment, IMF is also being criticized of having minimal role in environmental issues and setting the priority as economic development (Vajpeyi; 1995).

4.2 Relevant information about the Turkish economy

The most important factor encouraging the “short-term profit oriented” changes in most of the policies (including the technological ones) is the economic climate of the country especially in mid 90s. The unfavorable economic conditions of the time have negatively affected the decisions of the government in many issues. In our case for example, they made the government ignore the environment in favor of a profitable multinational company although the local people were strongly opposing. This case is going to be discussed in the next chapter. In this section, I am going to present the economic conditions of the time since it is crucial to give a rough picture of 90s in order to understand the case and the attitude of Turkish government.

Turkey's dynamic economy is a complex mixture of modern industry and commerce along with traditional agriculture that still accounts for nearly 40% of employment. It has a strong and rapidly growing private sector, yet the state still plays a major role in basic industry, banking, transport and communication.²⁴

²⁴ URL (www.geographic.org)

Over the past 30 years, Turkey has been fighting with unstable economic and political conditions. It has been governed by 22 governments as high and persistent inflation became a major feature of the Turkish economy (Kibritçioğlu; 2004).

Turkey experienced a short period of high inflation in the late 50s but the history of today's high and persistent inflation goes back to the first half of the 70s at the earliest.

Until the end of the 1970s, successive Turkish governments pursued an import-substituting, inward-oriented industrialization strategy. However oil-price shocks in the 1970s and related balance-of-payments problems contributed substantially to a deep economic recession and a political and social crisis in Turkey. In early 1980, Turkey abandoned its inward-oriented development strategy and gradually started to introduce free market based reforms. After the introduction of the liberalization program in January 1980, the government was able to lower consumer prices from 140 percent in May 1980 to 33 percent and accelerate economic growth in the following four years (Kibritçioğlu; 2004). In May 1981, the government took the first step from fixed to a managed floating exchange-rate system. The change in the deficit financing method of the public sector from money to bond-finance started in 1986, and attempts to stabilize the exchange rate to prevent the inflationary effects of rising exchange rates made this policy combination unsustainable within a short period of time. An "exchange rate" crisis inevitably hit the country in the first half of 1994 and the annual inflation rate exceeded 100 percent as in 1980 (Kibritçioğlu; 2004).

Several disinflation attempts since late 1970s seem to have failed one after another. Although the Turkish economy never experienced hyperinflation like Argentina or Israel in the period of global inflation from 1973 to 1994, it fell into a unique situation after 1994. In 2002, the Turkish annual inflation rate was still 13 times higher than the average rate of inflation in the world, while global inflation rate has dropped from 25.3 percent in 1994 to 3.2 percent in 2002 (Kibritçioğlu; 2004). Turkish governments introduced new disinflation

measures to stabilize the economy after the 1994 financial crisis. However, these efforts in 1995, 1998 and 2000 failed to reduce the inflation rate to levels below 25 percent per year, as it had been in the early 1970s.

In sum, in the beginning of 2000s, distinct aspects of the current Turkish political economy context were the persistence of price inflation under conditions of a crisis prone economic structure, persistent and rapidly expanding fiscal deficits, marginalization of the industrial relations and the severe erosion of moral values with increased public corruption. Following a series of poorly focused set of stabilization attempts through the decade, the government initiated a comprehensive disinflation program in July 1998 under the guidance of IMF (Yeldan; 2001). However, the 1998 disinflation program did not last very long, due to the Russian crisis in 1998, the domestic general elections in April 1999 and the devastating earthquake in August 1999.

Finally, in December 1999, the government adopted another disinflation program aided by IMF, aiming at decreasing the inflation rate to a single digit by the end of 2002. Yet, just eleven months after launching the disinflation program, Turkey experienced a severe financial crisis in November 2000. The government requested to access the Supplementary Reserve Facility from the IMF. The request was granted with 7.5 billions USD of additional support in December 22, and the technical limits of the monetary program have been revised. Only then the program could have been secured as the markets seemed to have calmed down. However, shortly after this rearrangement with the IMF, the public disclosure of a political dispute between the Prime Minister and the President of the Republic on February 19, 2001 badly hit the uneasy markets. The government could not endure the pressures of the markets any further, and let the exchange rates to free float after a significant devaluation of the Turkish Lira (Yeldan; 2001). This devaluation of the TL and subsequent economic

contraction became major determinants of price developments throughout the year 2001. Eventually both GDP and GNP grew at a rate of 7.8 percent in 2002 compared to the previous year. The economic contraction contributed a sharp rise in unemployment in 2001. The overall unemployment increased to 8.5 percent in 2001. Despite the growth performance in 2002, the unemployment deepened to a rate of 10.7 percent. External debt stock increased from 113.9 billion USD in 2001 to 131.6 billion US Dollar in 2002. But its share in GNP dropped from 91.4 percent to 78.6 percent thanks to economic growth rate and real appreciation of the TL against dollar. In 2002, Treasury received 12.9 billion USD credit from the IMF Stand-By agreement. By the end of 2003, Turkey has a total external debt of nearly 148 million USD.²⁵

4.3 Science and technology policy of Turkey

So far, I have tried to give a general view of changing conditions and priorities of Turkey. In the previous section, ever lasting economic problems of the country had been presented. The economic conditions mentioned above are seen as the most important factor influencing the policymakers' decisions. Technological decisions made by the policymakers and their impacts on society are also influenced unavoidably. In this section, I am going to focus on how science and technology policy has been influenced and changed towards more "profitable" technologies.

The attempts of establishing a national policy in science and technology in Turkey date back to the planned economy period. The first institution that will have an active role in coordination and organization of research in basic and applied science was also established in

²⁵ URL <http://www.treasury.gov.tr/english/kaf/3-7alen.htm>

the same period (1963)²⁶. The purposes of the institution were mentioned in the “The First Five Year Development Plan” (1963-1967)²⁷ such as:

Scientific and Technical Research Council” (TUBITAK) will be established for the purpose of organizing, coordinating and promoting basic and applied research. Scientific and Technical Research Council will help in directing the research activities to the targets of the plan and setting the research priorities accordingly.

The concept of ‘technology policy’ has been taken into account for the first time in ‘The Forth Five Year Development Plan (1979-1983) and hence investment policies and enhancing the technological abilities of certain industrial sectors have also been highlighted. In the beginning of 1980s “Turkish Science Policy: 1983-2003” was prepared with the contribution of 300 scientists and experts. This was the first time that a detailed science and technology policy document had been tried to be prepared. In this document priority areas of technology had been put forward and a new institution was established. “The Supreme Council for Science and Technology (BTYK)” was responsible of designing science and technology policies of the country with the participation of ministers, high-level bureaucrats and representatives of non- governmental organizations that take an important role in the management of economy (www.tubitak.org.tr). However the policy could not have been implemented due to political climate of the time and the first meeting of the Council that had been established in 1983 could only be held in October 9th, 1989. In the second meeting of the Council that had been held in February 3rd, 1993, “Turkish Science and Technology Policy: 1993-2003” was approved.

²⁶ URL www.tubitak.org.tr

²⁷ In Turkey, general policies affecting all governmental and private sector projects and investments are set forth in the Five Year Development Plans prepared by the “State Planning Organization”.

There was a significant difference between the policies that were adapted in 1960s and 1990s. From the establishment of the “Turkish Republic” in 1923 to the 1990s, the purpose of the policy was gaining capability in the fields of applied sciences such as mathematics, physics and engineering as well as agricultural and medical sciences²⁸. It was considered that “gaining capability in science” was the first and foremost factor for “gaining capability in technology”. With the changing climate in the whole world where economic competitiveness and productivity gained more importance, the science policy of Turkey has inevitably changed in ‘90s. Technology, and science as source of technology, has become a productive power and they gained a strategic importance in social welfare and economic development of countries. As a result “science policies” of countries have become “science and technology policies” and Turkey was not an exception.

The change of the Turkish science policy towards a science and technology policy with more “economy related” purposes can be recognized in the document approved by “The Supreme Council for Science and Technology” in 1993. The adapted policy in 1993 was highlighting the determinant role of science and technology in

- sustaining economic growth,
- surviving the vitality of national economy,
- upgrading the living standards, and
- international competitive advantage. (www.tubitak.org.tr)

In order to attain the economic and social goals of the nation, it was also suggesting some regulatory measures to be taken in the fields of S&T. These measures were;

- enhancing the intellectual capacity of the country,

²⁸ URL (www.tubitak.org.tr)

- upgrading the “Research and Development” ability of the country in the new pervasive generic technologies,
- focusing this ability on the fields of economic priority,
- encouraging the activities aiming at the transformation of scientific and technological findings into economic and/or social benefit immediately,
- accelerating the diffusion of new generic technologies in all fields of economic activity,
- financing the technology-intensive mega projects that will raise the technological ability of the country and create vividness in the economy.

(www.tubitak.gov.tr)

The reasons of the changes in the policy have been mentioned in the “National Science and Technology Policy and Agenda” that took its final form in August 25th, 1997.

In this document, it is mentioned that countries having superiority in technology and science are progressing towards an absolute domination in industry and in all other economic activities. Superiority in science and technology is the determinant factor in the reallocation of world’s resources and in increasing the welfare of society. Therefore, countries having superiority in science and technology are progressing towards dominating the information age and the future world. It is further discussed that Turkey does not have an active role in maintaining the technological progress but is directly affected by the consequences of the progress made by technologically dominating countries. Turkey, in respect of the global processes, has to cope with many problems. Among them, the most vital one is to catch up with technological changes of the age to maintain economic and social progress. (TUBITAK, 1997)

4.4 Environmental policy of Turkey

The environmental policy of Turkey has been governed by the Five-Year Development Plans and the Environmental Law that became effective in 1983. The Environmental Law (coded 2872) starts from the principle of the "polluter pays" and handles the environmental issue on a very broad scope. The aim of the law, which considers the environment as a whole is not only to prevent and eliminate pollution, but also to consider the future generations. However, the measures to be taken and the arrangements to be made should be compatible with the economic and development targets.²⁹

Turkey has made some progress in the last fifteen years in the area of the environment, notably in the adoption of legislation and the launching of conservation schemes. For instance, the "Environmental Impact Assessment Regulation" (EIAR) was put into force in 1993 to regulate the administrative and technical principles that will be obeyed by all public and private organizations, institutions and agencies whose proposed activities may cause environmental problems. However, in terms of implementing legislation, there still remains a lot to be done. In addition, with regard to the integration of environmental considerations into other policies, no progress can be reported.³⁰

²⁹ Ministry of Environment and Forestry

³⁰ November 2003 Evaluation Report of Turkey, European Union.

5 THE BERGAMA MOVEMENT AND THE CYANIDE CONTROVERSY

Because ordinary people are excluded from much of the debate about technological decision making and environmental problems, the agenda tends to be dominated by “specialists and experts”. Ordinary people lose both the voice in making their views known and the courage for improving things in their country. Many people lack the confidence and the sense of their own power in changing this agenda (Taylor et al; 1992).

The peasants living in the Aegean region of Turkey, however, have managed to create a special case in the technological history of their country. The way their government tolerated a foreign investment with a “dirty” technology for economic reasons was intolerable for them. Their resistance to the company had caught a lot of attention both inside and outside the country and was known as the “Bergama Movement”.

Before starting to analyze the movement, it will be helpful to give a rough background information about the town that will be the subject of our discussion. Bergama is a historical town with a population of 50.000 and it is located near the north west coast of Turkey in the Aegean region. It is inside the border of Izmir (Smyrna) district and approximately eighty kilometers north of Izmir, the third biggest city of Turkey.



The town is one of the oldest historical cities of the country and lies over the remains of the ancient Roman city “Pergamon” of which there are extensive ruins remaining. Bergama has inherited the name of the ancient city together with the remains of Acropolis, the temples of Zeus and Athena, the steep amphitheater and the health center of Asclepion. Ironically, Asclepion was named after Aesculapius; “the God of Health” and patients used to be healed there by the sound of water and music in ancient times.

With all its historical treasures, Bergama has a considerable economic gain from tourism. However the main economic activity of the region is agriculture. The local people are overwhelmingly dependent on small scale agriculture and they grow cotton, tobacco, olives and a wide range of fruits and vegetables. The olives of the region are considered to be the best in the country due to the mild climatic conditions. The prime agricultural land in the alluvia filled Bakircay valley also produces some of the world’s best cotton, pine nuts, citrus fruits, grains and tobacco. There is also animal husbandry and honeybee production in the region.

Due to the complex geology of the Aegean region, there is a diversity of mineral deposits (Mobbs;1996). With the changing financial policies mentioned in the previous chapter and the adoption of liberal and flexible foreign investment policies, international companies were invited to the region for mineral exploration by the Turkish government. In October 1989, an Australian/Canadian/French multinational company named ‘Eurogold Mining Limited’ was given permission to explore for gold in the region for a period of 30 months. Having found enough gold for production near Bergama (a total of 24 tons), the company got the “license of production” for 10 years from the Ministry of Energy and Natural Resources in 1992 together with a permission from Ministry of the Environment. The company chose the location for construction of the ‘Ovacik Gold Mine’, which is located adjacent to Ovacik village with a population of 350 people and close to Camkoy and Narlica

villages (total population 1000). Bergama is located about 9 km. east from the mine and 14 other villages with a total population of 6000 are located within a 10 km. radius of the mine.³¹

The local people were very glad when gold was explored in their region:

“We got very excited at first. We thought we were going to be rich. We thought that the mine was going to provide our children new jobs.”

said one of the local people to a Greek newspaper.³²

After learning the company would be using “cyanide” for leaching gold from the ore, the perception of the local people started to change:

Scientists from Turkey and other countries came to our region. They started to lecture us about gold. They showed us films about the working conditions of other gold mines in the world.

They took us to Lefke in Cyprus to visit a gold mine that used cyanide. We were shocked with the view. There was no sign of life around...

said one of the locals who would be the leader of the Bergama movement soon.³³ (See picture1)

Peasants of Bergama had a meeting with their Major and held a news conference to announce their findings. This was the first time they resisted the company. They announced that they did not want the gold mine on their hills.

Eurogold officials replied that the cyanide would be kept in strong clay pools and that it would evaporate under the sun into largely harmless substances such as carbon dioxide and nitrate³⁴. Therefore it would not be a thread to the environment.

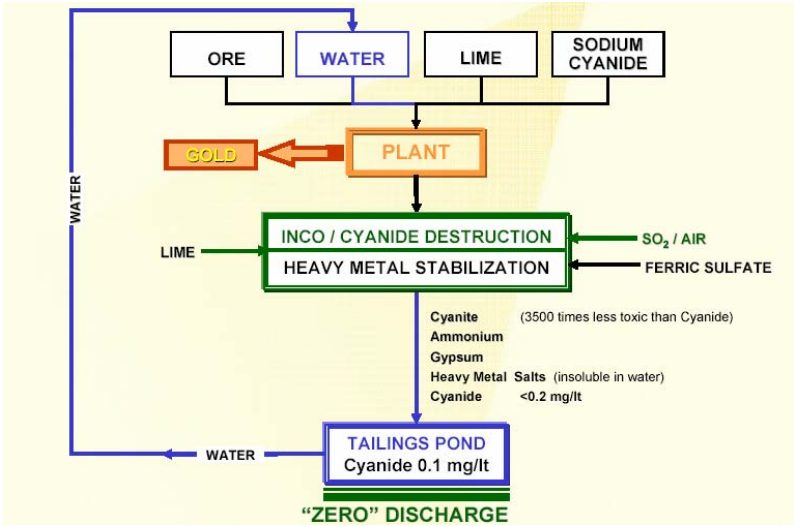
³¹ URL (www.ovacik-altin.com)

³² (Paratritis Daily; 25.06.2003)

³³ my translation; Paratritis Daily; 25.06.2003

The method Eurogold will be using to extract gold is called “heap leaching”. This is a widely used technology in gold mines since 1960s. Cyanide is the most popular chemical used by mining corporations to extract gold from ore, despite the fact that leaks or spills of this chemical are extremely toxic to fish, plant life and human beings. Cyanide leaching involves spraying a sodium cyanide solution (a colorless solid with a slide odor of bitter almonds) on ground ore or on old waste rock, known as tailings. The gold forms a water-soluble chemical compound with the cyanide which is then run over activated carbon to extract gold. The cyanide waste that is left over is supposed to be stored in lined and covered ponds to prevent contact with local animals and birds. (Drillbits&Tailings; 2000, Volume 5, Number 3)³⁵

Operational Features of Ovacik Gold Mine



Although the cyanide solution eventually breaks down in the presence of sunlight and air as the mining companies say, it will not do so when it seeps underground, under cloudy or rainy conditions or during winter in cold countries. Most importantly, not all of cyanide

³⁴ see (www.ovacik-altin.com)

³⁵ Available at URL http://www.moles.org/ProjectUnderground/drillbits/5_03/vs.html

breaks down quickly into largely harmless substances. Many of the breakdown compounds are still toxic to aquatic organisms and may persist in the environment for a significant amount of time. In addition, toxic heavy metals such as lead, cadmium and mercury commonly present in the ore can be mobilized during leaching process (Korte and Coulston; 1997).

There are a significant amount of accidents in the gold mines around the world that caught the attention of the local people in Bergama. In 1992, for example the cyanide and heavy metal leaks from ‘Summitville’ gold mine in U.S.A had killed all aquatic life along a 27 kilometers radius. Again in U.S.A, by a similar cyanide spill from ‘Brewer’ gold mine, over 11000 fish were killed.³⁶

Having been informed by the scientists about cyanide and its effects, the now organized peasants started the judicial struggle in 1994. A group of 794 Bergama villagers brought the case to court. As it was the Ministry of the Environment which, in response to Eurogold’s demand for a “license of production”, issued an act according to which there were no health and environmental drawbacks to constructing and operating the mine, they petitioned against the ministerial act in the Administrative Court of Izmir³⁷

Eurogold, however, did not wait for the ruling. In 1996, they cut 2500 pines and 800 olive trees and began constructing a mine surrounded with barbed wire and watch towers. As a reaction to this, nearly 10000 villagers surrounded the mine that was in construction and protested the company (See picture 3). In January 1997, the people of Bergama held a referendum and 100% had voted against the mine. In April 1997, 5000 peasants from 17 villages occupied the mine, and forced the regional governor to close it for a month. Despite all the reaction, the construction of the mine was completed in the same year.

³⁶ See ‘Drillbits&Tailings; 2000, Volume 5, Number 3 in URL http://www.moles.org/ProjectUnderground/drillbits/5_03/vs.html for more information.

³⁷ File numbers 1994/501 and 1994/643.

At the end of the 3-year long judicial process, in May 1997, the final ruling emphasized that the ministerial act was in violation of the principles stipulated in Constitutional Article 17 that reads “everyone has the right to life and the right to develop his/her material and spiritual entity”, and Article 56 which reads “everyone has the right to live in a healthy, decent environment. It is the duty of the state and citizens to improve the natural environment and to prevent environmental pollution”³⁸ (Coban; 2002). The final ruling declared Eurogold’s licenses invalid and said the mine should be closed. Under the Constitution, the country’s law enforcement agencies had to comply with the court decision. The peasants of Bergama celebrated their victory by dancing in circles with their local music of pipes and drums.

But the mine remained. In October 1998, Eurogold had applied to the Ministry of Health in order to start its production since all the additional precautions were taken. The firm claimed that the mine had become one of the safest gold mines in the world (even the safest) due to additional technologically advanced pollution-control systems. One of the officials I interviewed told that an INCO³⁹ unit (see picture 2) was installed during this period to destroy cyanide before tailings are released into a fully-lined, impermeable dam which is designed to withstand a major seismic event (0.6g⁴⁰). He also claimed that this combination of cyanide destruction and lined containment of tailings is the first of its kind in the world.⁴¹

Scientific and Technical Research Council of Turkey (TUBITAK) was made to prepare a report to examine the new claims of the firm to decide whether the risks mentioned in the decision file of the Council of State were still existent or in tolerable levels. The report was prepared by 11 scientists from different academic fields. It was issued after an 8 month work and concluded that:

³⁸ the decision of the Council of State, file no. 1996/5477, decision no. 1997/2312, dated 13/5/1997)

³⁹ INCO – a propriety cyanide destruction unit

⁴⁰ g - Newton’s gravitational acceleration constant

⁴¹ for more information see ‘Case Study on Tailings Management, International Councils on Metals and the Environment (ICME)’ and United National Environment Programme (UNEP), November 1998).

The use of cyanide does not constitute an environmental problem in Ovacık gold mine and the risks claimed to threaten human and environmental health in the Higher Administrative Court ruling (which resulted in the withdrawal of approval for the mine) have either been totally eliminated or reduced far below the acceptable maximum limits. (Translation of the Assessment Report by TUBITAK; October 1999)

This report, however, had been criticized by some NGOs (such as TMMOB⁴², TTB⁴³, Greenpeace) and professors from various universities. They argued that the report was not independent, had some strict conclusions that the mine would not pose any danger to public health even though there were no scientists or experts of public health issues or any doctors in the commission that prepared the report. They also criticized that although some experts in the commission had mentioned some negative sides of the issue in their independent field reports, these findings were not mentioned in the conclusion part. The risks of an accident and a catastrophic earthquake since the area is a first degree earthquake zone (see map1) were underestimated.⁴⁴ Moreover the probability of an accident while the cyanide was being transferred from Italy in containers via ships and trucks had never been mentioned, although the risk of a traffic accident is considerably high in Turkish roads.

Another concern that was shared both by the locals and the experts that were against the gold mine was that due to economic conditions of the time and the profit oriented policies of the government, not only the mine would be permitted to go on its production but also new mines using the same technique would be opened in other regions of Turkey since the total

⁴² Turkish Engineers and Architects Chamber Association

⁴³ Association of Turkish Doctors

⁴⁴ see 'Critique of the Assessment Report of TUBITAK by Turkish Engineers and Architects Chamber Association(TMMOB)

reserves of gold in Turkey had been estimated as 6500 tons with a total profit of 800 billion USD if refined, 80 billion USD otherwise.⁴⁵

As discussed in the previous chapter, the Turkish Parliament passed some arbitration laws in 1999 in a climate where Turkey was suffering from an economic crisis and a catastrophic earthquake. During the discussions on arbitration and the parliamentary sittings about the gold mine in 1999, it was suggested that arbitration laws would make it possible for Eurogold to bring the case to an international arbitration tribunal and as a result it could put the mine into operation⁴⁶. It was also reported in Milliyet daily⁴⁷ that Eurogold had the right to file a claim for compensation of US\$ 300 million in case of a refusal of the company's application.

The concern of the locals who were against the mine seemed to be realized when the Cabinet of the time had agreed on a principal decision that Eurogold Mining Company could operate its mine since the experts concluded in the highly discussed and criticized TUBITAK report that Eurogold had taken every kind of precaution to prevent any possible damage that can be caused by cyanide. The locals brought the decision of the Cabinet to the court once more since they found it undemocratic and contrary to the final decision of the Council of State.

Meanwhile, Eurogold was having some changes in its organization. They admitted making some mistakes in communicating with the locals in the past due to limited knowledge of the sensitivities and customs of their Turkish hosts although they met all the international standards.⁴⁸ For this reason they had employed a new team of experienced and senior Turkish mining professionals. As a result, the French and Canadian partners of Eurogold sold their

⁴⁵ Milliyet daily; 5.6.1999

⁴⁶ Cumhuriyet daily, 25/7/1999; 16/8/1999

⁴⁷ 6/1/2001

⁴⁸ See the company brochure 'Now and Beyond 2000

shares to the Australian Normandy Mining Limited and the company changed its name as Normandy.

Normandy tried harder to convince the local people before starting their production. They told that they would employ more than 230 people, 82% of whom would be from the nearby villages. They committed that they would provide extensive training to all of the workers and periodic free health checks for the workers and their families. Fifty new houses would be constructed for the Ovacik villagers whose lands were bought by the mine and whose houses could be damaged due to production.

They also committed about the production that sodium cyanide would be transported to the site in small amounts as required in specially designed containers that would meet the highest safety standards. Sodium cyanide would be stored within a secure, enclosed area on-site. The storage area would be fireproof and be locked at all times. They claimed that the possibility of seepage of cyanide or heavy metals into underground water was extremely low and the quality of groundwater would be monitored at six boreholes located near the tailings facility. Even in a worst-case-scenario, the quality of underground drinking water would be at no risk of impact from seepage.⁴⁹ Dust generated during blasting, excavation and transportation at Ovacik mine would be minimized. Crushing and screening will occur within a closed circuit. The air inside would be extracted through a wet scrubber system that would wet dust and prevent it becoming airborne⁵⁰. Open pit mining would occur only during the first three years of operation. Thereafter, production would continue from underground, and dust from operations would reduce even further.

The impact of noise and vibration would be minimized. Monitoring devices would ensure variances in noise and vibration would not exceed regulatory limits. To minimize effects of blasting, local residents would be informed prior to blasting.

⁴⁹ An Assessment Report by TUBITAK-YDABÇAG Commission on Eurogold Ovacik Gold Mine, October 1999.

⁵⁰ see the company brochure 'Now and Beyond 2000'

The closed circuit nature of the processing plant at Ovacik mine would prevent any reagents from coming into contact with the outside environment. The system would automatically shut down in case of a malfunction, minimizing any risk of impact outside the plant.

Soil taken from the open pit would be reused in rehabilitation. About 900m³ of make-up water per day would be required for the operation. Reuse of water would be maximized to ensure that local water resources were not affected.

In an event of a catastrophic earthquake (ie. greater than 0.6g) that would damage the tailings storage facility and release tailings into the environment, the impact would still be negligible, if any, because of the prior destruction of sodium cyanide in the tailings.

At the end of mining operations, the entire mine site would be rehabilitated. The underground workings would be sealed. Infrastructure would be removed and the area rehabilitated. The tailings facility would be dewatered and rehabilitated by using a multi-layer cover. A 0.5m layer of topsoil suitable for growing crops or grazing would be placed back on the surface. Details of the rehabilitation project would be finalized after consultation with the local people.⁵¹

In May 2001, production started by using 657 kilograms of cyanide a day to obtain 10 kilograms of gold and silver⁵² in spite of the local resistance and the binding court decision ruling that the mining activity would be harmful to human health and harmful to nature.

From 19/5/2001 to 31/4/2004, 12.4 tons of gold and 13.5 tons of silver were extracted. As of June 2004, 439 people were employed in the mine with a salary range above Turkish standards. The workers I have interviewed mentioned about the undergoing projects of the mine in which young local girls are being educated in foreign language, computer and office

⁵¹ see the company brochure 'Now and Beyond 2000'

⁵² Hürriyet daily, 28/5/2001; Zaman daily, 28/5/2001; Milliyet daily, 12/6/2001

management so that they can find qualified jobs. They are also providing grants to students and financial support to local schools. They repaired the local mosque and built a library. The Community Relations officer of the mine said that the reaction towards the mine has been minimized in the last years. The mine has been in production for 3 years and the villagers are convinced that nothing had happened. They have learned from their neighbours or family members who are working in the mine that it is really safe. An animal sanctuary has been constructed in the mine where ducks and other animals are living. It proves that no harm is given to the natural life. The mine is said to be audited monthly or semi-monthly by İzmir Governorship - Monitoring & Auditing Committee which is an independent state commission. In addition, the mine is also audited by the Ministry of Health- İzmir Health Directorate, Ministry of Environment General Directorate of Preventing & Controlling Environmental Pollution, General Directorate of Mineral Works together with an annual international audit of EUROMINES European Miners Association. Regarding the tests done, all the commitments are said to be met and far below the limits as of the time I have visited the mine. (See the charts 1,2,3,4,5,6)

Two months after I visited and left Bergama to complete this thesis, something interesting has happened. First the controversy that seemed to be quietened down reemerged with a verdict handed down by the Council of State in July 2004. The Cabinet decision that let the mine operate was reversed by this verdict. The locals seemed to win the second victory against the mine via another court decision. Two weeks later, Normandy Mining Ltd. announced that the company could not be productive as anticipated due to the public reaction and the long lasting courts that are going on. In the first week of August 2004, Ovacik Gold Mine was sold to the Canadian Frontier Pacific Ltd. for \$45 million that is one third of the total investment done by Normandy Mining Ltd. The manager of Normandy had told that the owner of the gold mine had changed, but the production process would go on without any

change.⁵³ The executives of the mine also announced that the verdict would not put a halt to operations in Ovacik but merely prevented proceeding according to the Cabinet decision.

“The Prime Ministry has the right to object to this verdict” said an executive board member.⁵⁴

The attorney of the villagers also admitted that possibility. He commented on the verdict and said that another secret decree within 30 days could be encountered, or the Prime Ministry could still object to the verdict. But under normal conditions, Council of State decisions should be implemented.⁵⁵

And the decision was implemented. The mine was closed in August 18th until a new decision. This leaves an open door for the mine and it is believed that the mine will find another way to operate again since the country is still fighting with economic problems.

⁵³ Milliyet Daily, 6.8.2004

⁵⁴ Turkish Daily News, 17.7.2004

⁵⁵ Turkish Daily News, 17.7.2004

“The lesson we have learned from our project is that regardless of our advanced technology and excellent safety management, it is how well we communicate with the local community that really counts .”

(From the brochure of the Normandy gold mine in Bergama, July 2004)

6 DIVERGING RATIONALITIES

In this chapter, I am going to clarify how the debate in Bergama started and turned into an unresolved conflict since the decision about the siting of the mine had been made without the locals’ approval. My main purpose will be to analyse the debate in the light of my theoretical approach that was discussed in the second chapter.

Throughout this thesis, I have argued that public risk perceptions are not only dependent on an objectively existent physical risk. As Wynn puts forward, the perceptions and responses to risks are also rationally based in judgements of the behaviour and trustworthiness of expert institutions who are supposed to control and direct the risky process involved (Wynn; 1996a, 57). Since the final decision of these institutions about the modern technologies directly affect the lives and futures of people on a mass scale, control and direction of these technologies have become a matter of much greater complexity and scope than it has ever been (Wartofsky; 1992, 16). At present, owners of power and knowledge have been the final decision makers. As Marx Wartofsky points out; power rests with elites of government (or military in some cases) and the technical knowledge required for policy decisions rests with the experts and scientific and technical personnel who are either part of such elites or are consultant to them. Generally, the public is poorly represented (Wartofsky; 1992, 17). What naturally follows are the conflicts and public reactions especially to risk bearing issues.

The cyanide controversy of Bergama is a good example of such conflicts. Having the economic, politic and social problems of a developing country that were discussed in the previous chapters, policymakers and the governors are under an enormous pressure to rely on economic activity that offers quick returns. These activities mostly ignore environmental protection and companies with risky technologies are often tolerated. The siting of such a company has been the subject of a long lasting conflict in Turkey for about 15 years.

The physical threat of the cyanide has always been in the center of the debate in Bergama after the locals have been informed by some scientists and professors about the possible risks concerning the use of cyanide by the gold company. Before this scientific inquiry, the locals were happy that gold was found in their fields. The villagers I have interviewed told that they thought they would possibly be rich and some of their unemployed children would be able to find jobs in the mine after it was opened. The mine did not seem as a threat to them in the beginning. The siting of the mine adjacent to their village did not seem as a problem. However they had some concerns about their fields since most of them were peasants. They were more personal concerns since at first they were unaware of the technology that would be used in the mine. They were living on small scale agriculture and animal growing. They were worried about what would happen after the mine would close. However, they thought that they would earn good money either by selling their fields to the mine or by working there. Therefore, in the beginning their concerns were not too much to oppose the mine.

This situation changed short after they learned that the technology to be used in the mine could cause environmental pollution. Some local scientists and professors were compelled to the arena since their previous studies about cyanide and its impacts on environment showed controversial results than the mine officials provided. They gave some factual evidence from other gold mines in the world and probabilities of what could happen in

case of a cyanide spill. The locals' concerns about their safety grew with this scientific inquiry from some local experts who are also against the mine.

In my point of view, this was the beginning of the risk debate in Bergama. The perceptions of the locals about the possible risk started to change after this point. While in the beginning they were perceiving the mine as a possible risk to their personal future as farmers which could be compensated and ignored if the mine would provide some resources to them, such as money or employment.

One of the villagers I have interviewed told that:

“...after finding out the possible consequences of cyanide usage to the environment and the health of people, we felt as if we were cheated. I do not trust the decision makers. Why should I? Weren't they the ones who drank contaminated tea after Chernobyl? Wasn't that tea contain radiation? If not, why lots of people died of cancer afterwards?”

The locals were also angry with the government. They were not informed about the physical risks at first and they felt cheated after learning the possible outcomes. Since they didn't have a say in the decision process, they decided to react the decision making process that undermined them although the issue was directly related to their health and environment. Their perception of the mine as a risk to their environment became a collective one. They started to mobilize their resources to attract the attention and gain sympathy of the public in general. They tried to learn more about the issue by the help of NGOs that entered the arena, they brought the issue to court in order to stop the construction of the mine, they protested the mine by surrounding the mine that was in construction, they held a referendum and 100% had voted against the mine.

Meanwhile, the second leading actor of the stage, namely the gold mining company, also started to mobilize its resources. Their means to influence and convince the locals was

money at first. They had undergone some projects to repair the local mosque and built a library, they gave courses to educate young local girls in foreign language, computer and office management so that they could find qualified jobs, they built new houses for the locals whose fields were bought by the mine. One of the executives of the mine that I interviewed said that he also personally went to the village to convince the locals, to listen to their complaints and to understand why they were against to the mine. He also said that he could understand their worries. However, since the perceptions were different between these actors, they could not come to a common ground despite the mine's positive attempts. As the executive told in the interview, the main risk in their perception would be not operating the mine. Because it would be very profitable for the whole country, it would make a lot of money that is desperately needed in this economic environment of Turkey and it would provide lots of jobs to the locals.

The officials of the mine also gave evidences to persuade the society, they published their audit reports and their test results. An animal sanctuary had been constructed in the mine where ducks and other animals were living to prove that no harm was given to the natural life. They claimed that all their commitments were met and far below limits after they started the production. Normally this evidence would help to resolve the conflict and eliminate the risk perceived by the locals if it had emerged due to lack of knowledge. However, the reason why they perceived the mine as a risk was the contradictory evidence and events that made locals more suspicious.

The most important thing that decreased the trust of the locals further and increased their perception of risk was the "court result" that they were waiting for. The Administrative Court had declared Eurogold's licenses invalid and said the mine should be closed. This was a victory for the locals, but not the end of the debate. This result meant that there might be something wrong with the mine. The test results and the evidence provided by the mine to

convince the locals might not be dependable. If everything was normal, the court would let the mine operate.

The third leading actor of the debate, namely the Turkish government of the time, had entered to the arena in this point. Due to the economic conditions of the time⁵⁶ and the pressure of IMF, the government decided to reevaluate the issue. A state research organization (TUBITAK) prepared a report for the government that concludes the risks mentioned in the final court ruling were not existing anymore due to the new equipment installed. This report was highly criticized by many scientists, professors and NGOs⁵⁷ for not being independent and dependable. However, these criticisms were undermined by the government. By using its “power”, the government opened the mine with a special approval.

The controversy between the experts about the above mentioned report is worth mentioning. Experts had become a part of the conflict since their opinions about the issue differed. This was a proof that even the experts were not realistic in their perceptions. They had their own values and they were acting accordingly. The professors in universities and the experts working in private organizations were believed to be more independent than the experts working in the state owned research institution. It was discussed that the dependency of the experts who prepared the TUBITAK report caused a deterioration of locals’ trust towards the policy makers.

The scientific uncertainty about the issue was an important factor that made the conflict stay unresolved. As Wynne also discusses, although the scientific uncertainties about what happens chemically, physically and biologically in a landfill site are huge, the opportunities for examining and reducing them are extremely limited. Thus the effects of putting a waste into a site can only be approximately known and these effects depend on how the site is operated and managed (Wynne; 1992b). Therefore, uncertainty underlying

⁵⁶ see the 4th Chapter.

⁵⁷ See the 5th Chapter

decisions is a social risk because of the institutionalized mistrust that pervades Turkish system.

Together with the further deterioration of trust and credibility, the cyanide conflict had been deepened by the government's decision about reopening of the mine. The government used its political power in the decision making without convincing the locals first. Therefore a successful solution to the conflict that would end the reaction against the mine was very difficult to achieve.

Although it has been said by the mine officials in my interviews that the reaction to the mine has been minimized in the last years and the debate seems to be resolved, all of the villagers I had interviewed were still against the mine. They were not trusting that the evidence given by the mine was correct. They thought that they were being manipulated. They were also uncomfortable by the dynamites blasted in the mine. They told that it felt as if it was an earthquake. Some of their houses were destructed due to these blasts. The mine gave them money for their loss but it was not enough. They were not compensated as they should be. Moreover, they thought that their underground water could be contaminated by arsenic. Some reporters from media came to the region very recently to find out about it but they were stopped by the miners. This increased the villagers' suspicion. The officials of the mine answered this claim that after they learned this complaint, they had tested the water in the wells, but everything was normal.

When I asked the villagers why they stopped reacting together to the mine, they answered:

“What had changed when we reacted, they are still operating despite the court. As long as we have “a US lover” government, nothing would change. They would do whatever IMF wanted.”

They also admitted that the mine is paying well and no one working in the mine wants to lose his job. Naturally, the villagers who are employed by the mine are not reacting anymore.

However, according to my interviews with the villagers, I have realized that the most of the villagers still see the mine as a threat to their way of living and their farming activities. The villages are also separated into two as the ones who are against the mine and the ones who are not. This also creates a tension in their social life. However the politicians and the executive officers of the mine still see the threat in not operating the mine. They see it as a door to more profit. They hope more mines will be opened. Therefore, the debate in Bergama seems that it may never be resolved successfully. In my perception, it is a third level of debate about different social values, cultural life styles, and their impacts on risk perception. In this case, neither technical expertise nor institutional openness are adequate conditions for public approval. Although trustable knowledge about the physical threat may help, it seems improbable. The contradictory evidence provided by the local and state experts brings the conflict to a more complicated position. The negative past experience of the people in environmental, political and economical issues also deepens the conflict. The best way to avoid the conflict in the beginning was to let the local people participate in the decision making. However public participation is not likely in many countries, and Turkey is not an exception. The parties of the Bergama debate tried to negotiate, some positive steps had been taken, lots of locals started to work in the mine. However a successful resolution has never been achieved. Moreover the future of the conflict does not seem promising as long as the locals are compensated in a way or convinced that the mine is totally safe.

7 CONCLUSION

Throughout this thesis I have presented how a physical environmental risk is perceived differently by the various actors of a social arena. In this last chapter, I am going to summarize the main points of this thesis and give concluding remarks.

As I have discussed in the previous chapters of this thesis, the perceptions of individuals concerning a risky technology are affected by a number of factors. “How decisions about risky technologies are made and the way these decisions affect the perceptions of individuals” are among the most important questions in risk debates. Since societies have become more critical about the technologies with adverse effects to their environment, the decisions concerning these technologies have gained more importance. If social groups are not integrated in the decisions concerning their interests, conflicts arise inevitably. Individuals who are uncomfortable with the decisions or policies made on their behalf, are attracted to the arena where the conflict has aroused. They try to maximize their opportunity to influence the outcome of the decision process by mobilizing their social resources. These resources can be money, power, social influence, value commitment and evidence and they may be used to gain attention and support of the general public, to influence the arena rules, and to become superior to other actors. The more resources a group can mobilize in an arena, the more likely it is that it dominates the conflict resolution process and gets its point of view incorporated in the final decision.

In the case of developing countries, the final decision is mostly taken by the actor who has the political power. With enormous economic and political pressures, the policymakers in the developing countries are often in conflict with the increasing demands to satisfy basic human needs like clean air, water, education, employment and satisfactory environmental quality. The supremacy of economics over all aspects, including the development of science

and technology mostly causes irreparable damage to the environment. This situation increases the perceived risks and diminishes the trust given to decision makers.

If lack of credibility and trust is the case, the solution to the conflict aroused by different perceptions of risk, can hardly be achieved. In this case, conflicts can be avoided before they have aroused by participating the public to the decisions made. Decision making here requires a fundamental consensus on the issues underlying the risk debate. If this is not the case, the public will not possibly be satisfied with the outcome. The conflict will stay unresolved and provoke new conflicts.

Another important factor affecting the perceptions of individuals is the “safety” issue. If the individuals do not feel themselves “safe” near an industrial plant with a risky technology, there will most probably arise a conflict. This feeling of “safeness” also depends on some factors such as trust and credibility to the institutions and experts. If the individuals lack the trust to the institutions due to past experience, they probably will not believe any evidence proving that the technologies are safe. Furthermore if there is contradicting evidence provided by different experts, or conflicts between them, the experts lose their credibility and the individuals feel more insecure. This feeling of insecurity increases whatever risks they perceive and deepens the conflict to a level where it is more difficult to find a resolution.

There is still a way of finding a common solution to a conflict regarding a risky technology. If the individuals who are affected by the adverse consequences of a technology are compensated, they may be willing to tolerate the risks attached to above mentioned technologies. These compensations may be anything, such as money or employment, that serve to the individuals’ needs and interests. Since the interests of the majority are served, it may be considered that the conflict is successfully resolved. However, the new technologies of modern states are mostly difficult to control and the nuclear, chemical, ecological and biotechnological risks they produce are considered as impossible to compensate.

To sum up, this study of cyanide controversy shows how perceptions of actors differ regarding a technology with adverse environmental effects. The different perceptions and the interests of the relevant actors caused a debate about the issue. This debate turned into a conflict due to three factors. First the final decision about the issue is made by the government without integration of the locals to the decision making due to some external pressures and poor economic conditions. Second, because of past experience and scientific uncertainties, the individuals were lacking the trust towards the policy makers and the experts. The controversy between the experts about the issue also made the individuals feel more insecure and worried about their future and therefore loose their trust further. Finally, since the individuals were not compensated enough to meet their interests, their resistance to the mine continued. Although the resistance seems to be minimized in the last few years, the conflict has still not been resolved satisfactorily. And it most probably will reemerge until the three factors mentioned above are met.

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- The company brochure: “ Now and Beyond 2000”

APPENDIX

FIGURES

Figure 1: Foreign direct investments of Turkey

(Data taken from Undersecretariat of the Prime Ministry for Foreign Trade)

FDI INFLOWS TO TURKEY			
YEARS	AUTHORIZED FDI (MILLION \$)	NO. OF FOREIGN CAPITAL COMPANIES	REALIZATIONS (MILLION \$)
1980	97	78	35
1981	338	109	141
1982	167	147	103
1983	103	166	87
1984	271	235	113
1985	234	408	99
1986	364	619	125
1987	655	836	115
1988	821	1.172	354
1989	1.512	1.525	663
1990	1.861	1.856	684
1991	1.967	2.123	907
1992	1.820	2.330	911
1993	2.063	2.554	746
1994	1.478	2.830	636
1995	2.938	3.161	934
1996	3.836	3.582	914
1997	1.678	4.068	852
1998	1.646	4.533	953
1999	1.700	4.950	813
2000	3.477	5.328	1.707
2001	2.725	5.841	3.288
2002	2.243	6.280	1.042
2003(*)	1.208	6.511	150
TOTAL	35.203	---	16.372
As of June 30,2003			

Figure 2: Total debt to World Bank

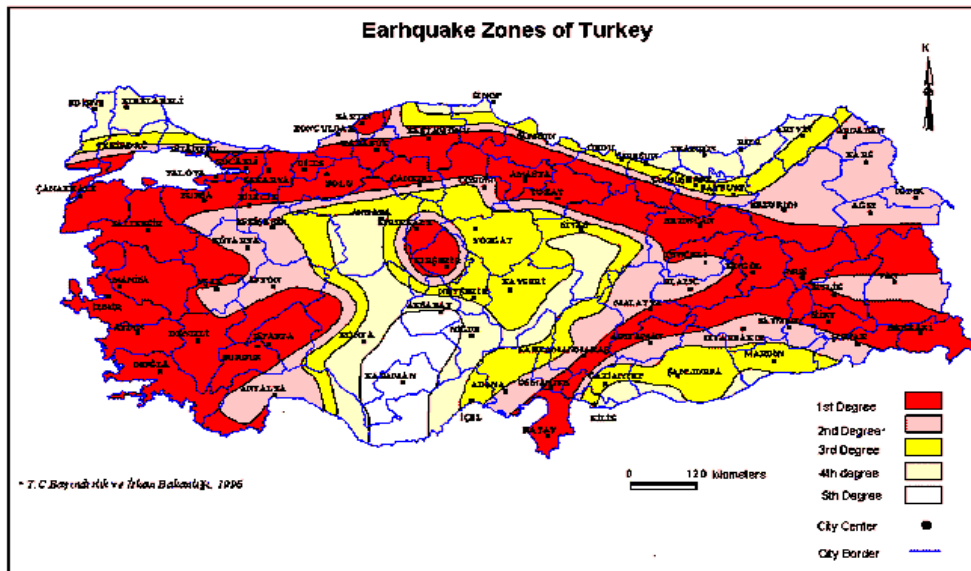
(Data taken from www.worldbank.org)

In millionUS\$	1995	1996	1997	1998	1999	2000	2001	2002	2003
Commitments	3,333	3,021	2,763	2,434	2,632	3,801	4,344	5,890	4,820
Disbursements	288	611	329	259	264	957	820	1,679	759

Figure 3: Total debt to IMF
 (Data taken from www.imf.org)

Credit Outstanding, Turkey Date	(in USD) Totals
31.08.2004	10.180.347.315
31.12.2003	11.040.901.478
31.12.2002	11.063.294.460
31.12.2001	7.649.577.660
31.12.2000	2.182.809.300
31.12.1999	441.863.445
31.12.1998	187.828.312
31.12.1997	299.937.937
31.12.1996	313.600.500
31.12.1995	313.600.500
31.12.1994	160.375.500
31.12.1989	24.686.250
31.12.1988	151.203.281
31.12.1987	369.761.718
31.12.1986	604.177.775
31.12.1985	822.316.758
31.12.1984	990.878.959

MAP: Earthquake zones in Turkey



CHARTS:

Chart1) Cyanide in process water

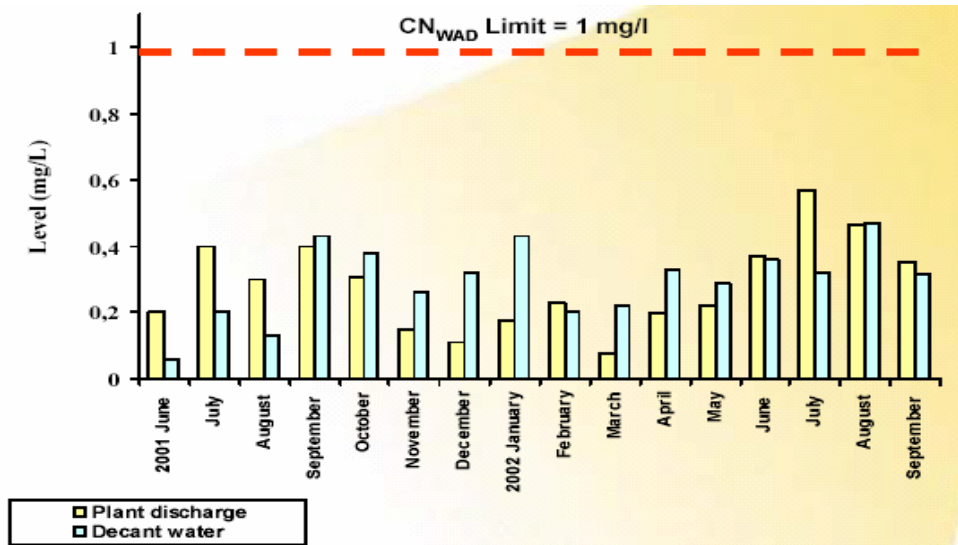


Chart 2) Heavy metals in process water in 2001-2002

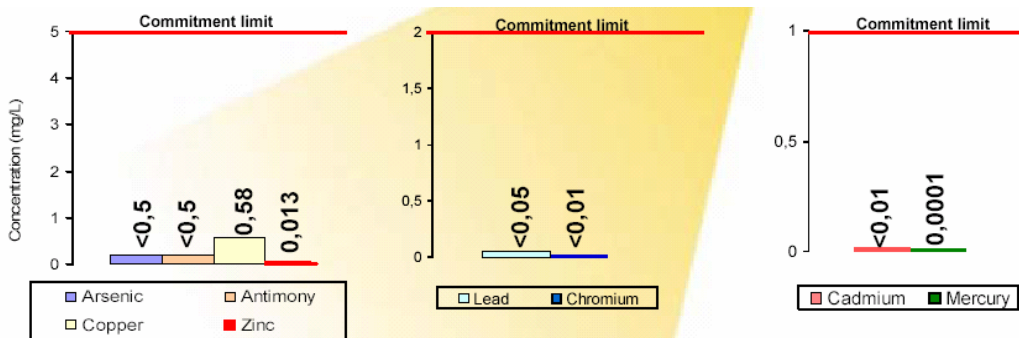


Chart 3) Noise

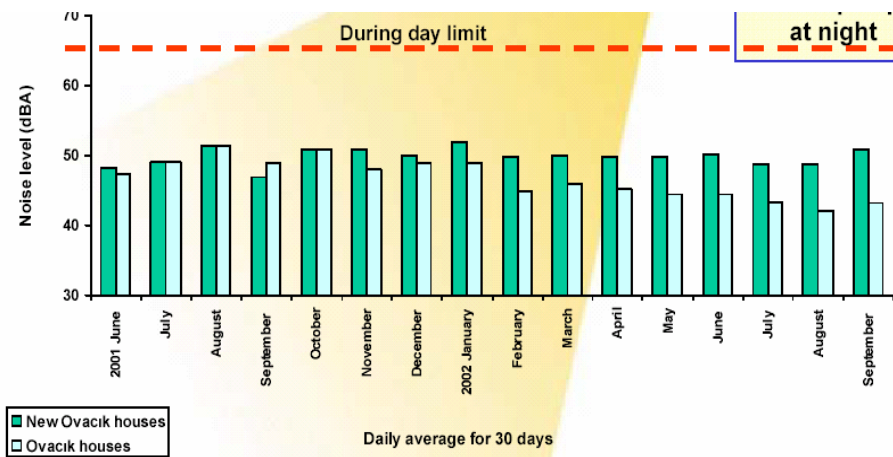


Chart 4) Blasting

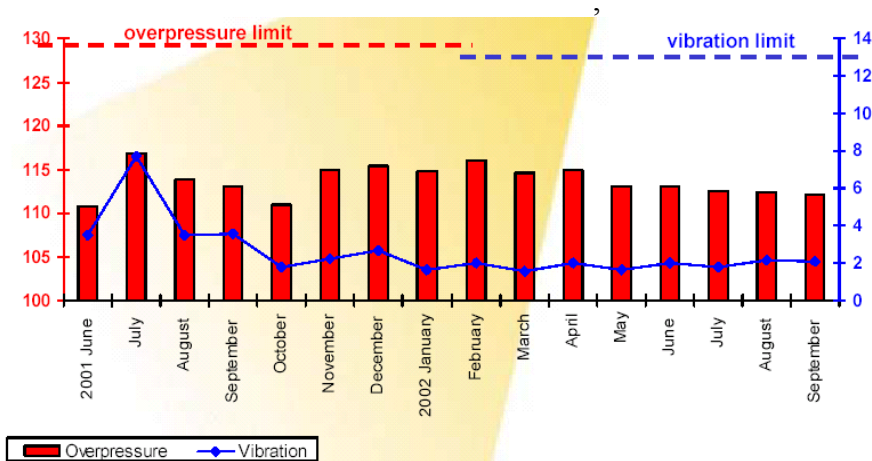


Chart 5) Particulate dust

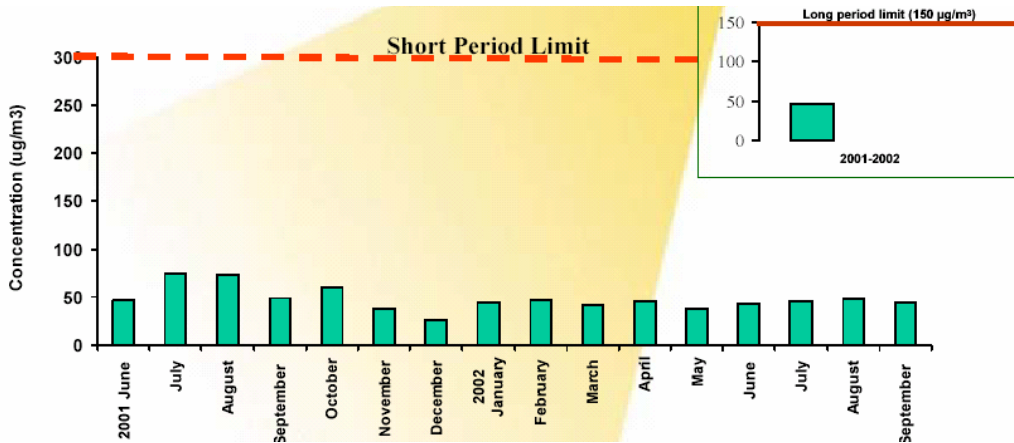
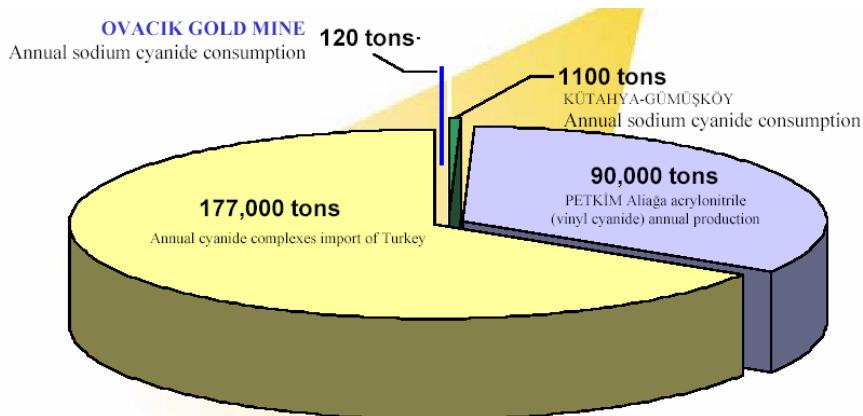


Chart 6) Cyanide reality in Turkey



PICTURES:

Picture1) Cyanide pollution in Lefke, Cyprus.



Picture2) The INCO circuit that destroys free and weak acid dissociable cyanide.



Picture 3) Reaction of the local people



OTHER PICTURES OF THE MINE:

The picture of the mine taken from an airplane, by Volkan Yuksel, 01.05.2004

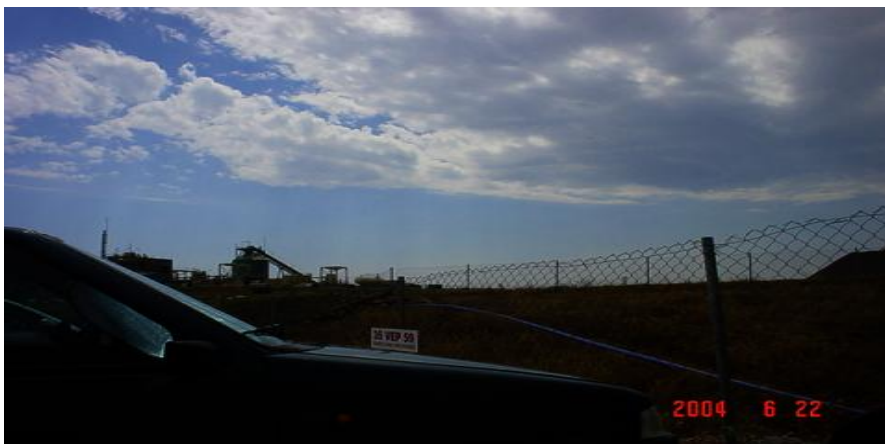


Pictures I have taken inside and outside of the Ovacik Gold Mine:

The Ovacik Village adjacent to the mine (mine can be seen in the background)



The view of the mine from the parking lot



Seminar room and the education center of the mine



The outside view of the mine



The open pit of the mine



The tailings storage facility

