THE CZECH REPUBLIC'S TRANSITION: THE ENVIRONMENT AND HUMAN RIGHTS

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This exploratory case study considers the Czech Republic from 1993 thru 2002 by examining two links: first, between transition and the environment.; second, between the environment and human rights. The study examines data from the Czech Ministry of Environment, the European Union, the World Bank, and Freedom House.

The purpose of this study is to better understand the Czech Republic and to generate hypotheses that might be used in future cross-national studies. Chapter III provides the underlying theory linking the environment and human rights. Chapters IV, V, and VI discuss the data and the two links and suggest hypotheses for future research. Chapter VII draws conclusions about states in transition, the environment, and human rights and encourages future integrative research.

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CHAPTER I

INTRODUCTION

Central Eastern Europe (CEE)[1] is a region that has endured tremendous conflict, the ebb and flow of leaders, and tumultuous changes throughout the 20th century. The fall of communism and subsequent transition has produced significant changes in the region's environment, economy, and political institutions. The evolving landscape of CEE has numerous aspects to investigate; however this study has narrowed its scope by focusing on the more neglected aspects: the relationship between economic and political transition and the environment. More specifically, attention is devoted to the relationship between the environment and human rights, thus helping to illuminate CEE's transition and furthering our understanding of the region. Moreover, these emerging states are important to understand because of their role in the European Union expansion; their growing market economies; their geopolitical situation; and their ability to provide perspectives on future regional transitions.

This exploratory study examines one case, that of the Czech Republic (CR) from 1993 thru 2002, while seeking to generate hypotheses for future research. In order to better understand the case and suggest useful hypotheses, two conceptual links are explored: first, between transition and the environment with an analysis of compiled economic and political data from Freedom House, Inc. (Freedom House) and the European Union (EU). The environmental data, consisting of air and water quality measurements, is from the World Bank's *World Development Indicators* (2001) and the Czech Ministry of Environment (MoE) (2001). By comparing the different perspectives from these selected organizations a clearer understanding of the Czech transition and its environment is created. The second link, between the

environment and human rights, also draws on environmental data from the World Bank and MoE. While the human rights aspect of the second link is indicated by physical quality of life data (life expectancy and infant mortality), this study does discuss different aspects of human rights and creates clear delineations between human rights, subsistence rights, and environmental rights which are provided below. The physical quality of life data is drawn from the Word Bank's *World Development Indicators* (2001). Exploring these links carefully through the data from domestic and international organizations will offer a clear and rich understanding of the case that will generate hypotheses for future cross-national research.

In the following chapters I explore two questions: How does economic and political transition affect the Czech Republic's environment? How does the quality of the environment and environmental initiatives affect human rights? Chapter II discusses the case selection and research approach, the conceptual framework, and underlying theory, and reviews relevant literature. Chapter III will discuss the relationship between the environment and human rights, while arguing the importance of a human rights definition that more effectively considers environmental components. Chapter IV explores the two links using information from the Czech Ministry of Environment (MoE), the European Union, Freedom House, the World Bank, and Czech public opinion polls. This chapter also presents hypotheses for future cross-national studies, and considers other variables that might affect human rights. Chapter V offers conclusions relating to states in transition, the environment, and human rights.

CHAPTER II

CONCEPTUAL FRAMEWORK AND THEORY

The Czech Republic (CR) with 10.23 million people is situated in the center of Europe bordering Germany to the west, Austria and Slovakia to the south and Poland to the northeast. Since the 1989 Velvet Revolution, and the 1993 Velvet Divorce,[2] the CR has been a well-documented case of a state in transition. Transition, economic and political, is the passage from one system to another, specifically from a planned economic and authoritarian system to a free market and democratic system. In this chapter, I explicate the case study approach, define terms, detail background information, and conclude with a discussion of the relevant literature.

Case Selection and Approach

The case study approach has a long tradition in the social sciences and is an implicit part of the comparative method and can contribute to theory building (Lijphart 1971). It approach provides rich detail often lost in large cross-national studies, moreover this study is a combination of the interpretive case study and the hypothesis-generating approaches. The first approach is based on particular interest in the case of the Czech Republic and its general success with transition. Though research has been conducted on the Czech Republic, certain aspects such as the changing environment have been omitted, thus it is necessary to explore these neglected aspects to provide a more comprehensive interpretation or picture of the case. The second approach is employed to formulate hypotheses that potentially will contribute to future cross-national research. The link between the environment and human rights has been largely neglected by research. Theory and hypotheses generated by this study are necessary for future research projects concerned with

explaining states in transition. Both of these approaches are accepted applied science approaches, suitable to the case of the Czech Republic. Lijphart (1971) considers these approaches useful instruments of scientific political inquiry.

The Czech Republic is a desirable case to research for several reasons. First, it is similar to other Central Eastern European (CEE) states that are anticipating European Union (EU) accession (Karatnycky et al., 2001). As all potential CEE entrants, the Czech Republic must comply with environmental, economic, and political criteria of the European Union, to gain EU membership (European Union 2000). By focusing on a single case, certain aspects of transition are illuminated, which could help explain transition in other states. Data accessibility and the 1998 Freedom of Information Act (Karatnycky et al., 2001, p. 164) have encouraged considerable research on the Czech Republic. Along with accessibility comes the availability of data and transparency of the Czech system; making it an optimal choice.

Background: Concepts and Definitions

Central Eastern Europe's economic and political transitions during the 1990s proffered numerous opportunities as well as setbacks. Economic transition, for example, meant consumers had more choices of Western goods and services. Privatization meant selling off state owned businesses to financial institutions or distributing stakeholder shares to the citizenry (Brown 2001, p. 66). Restitution to families of previously seized property was generally successful and businesses generally flourished under the market system (Karatnycky et al., 2001, p. 168). One result of decentralization and privatization was that very few citizens and numerous corrupt institutions purchased shares (Brown, p. 66). While the transition created a

more competitive market, corruption and deficiencies caused serious problems, as in the financial crisis of 1997 (Brown, p. 66). Relative economic prosperity in CEE led to a dramatic increase in automobile transportation and a decrease in public transportation; this produced high levels of carbon dioxide and other harmful greenhouse gases (Pavlinek and Pickles, 1999).

The swiftness of the political transition allowed the *nomenklatura*, leadership of the old communist regime, to seize assets early on (Jancar-Webster, 1998). The communists did not change their name or their complexion and the *nomenklatura*, or "the old comrade network" carried over from the communist era (Brown, 2001, p. 98). In any case, the CR became a democratic state (p. 117), though struggling in many areas, such as new legislation to limit smaller parties' political involvement and a move to reduce the power of local government (Karatnycky et al., 2001, p. 161, 164-165).

The political transition led to the creation of new ministries including the Ministry of Environment which came into existence on January 1, 1990. In the early and mid-1990s, the Czech Ministry of Environment (MoE) was weak politically and proponents of environmental clean-up lost support; some members of the government believe that further economic transformation will lead to the resolution of the environmental crisis (Pavlinek and Pickles, p. 355). Throughout the political transition in the 1990s, environmental Non-Governmental Organizations (NGOs) were demonized as unpatriotic and proponents of terrorism, and funding for environmental groups were slashed (Pavlinek and Pickles, p. 358). Current budget constraints limit support staff for lawmakers; these constraints hinder legislative proposals, and limit most legislation to initiatives prepared by ministries (Karatnycky et al., 2001, p. 164). The demonizing of environmental groups; the initial weakness

of the MoE; legislative budget constraints; and the low priority of the environment have been problematic in the ongoing transition.

This study uses water and air quality data from the World Bank and MoE sources to measure changes in the environment. Environmental degradation in the form of water and air pollution in CEE is pandemic (Schnoor 1993), however these environmental issues did not emerge in 1989 with the Velvet Revolution. Soviet style environmental management, with the rape and pillage mentality and emphasis on heavy industrial production, greatly damaged the environment throughout CEE (Baker and Jehlicka 1998, p 3). Placing total blame on these old regimes for the present state of the environment would be erroneous. Environmental legislation was passed as early as in the 1980s. Since then, CEE governments have responded to environmental crises with newer legislation, yet pollution from the old regimes remains (Fagin and Jehlicka, 113-115). Overall, the Czech Republic has experienced dramatic declines in environmental pollution since 1993, largely because of new environmental policies and a reduction of industrial output (Pavlinek and Pickles 363-364). It continues to ratify and enforce new environmental legislation, provide environmental education to the citizenry, and is cleaning-up existing pollution, as it moves toward European Union accession in 2004 (MoE, *State Environmental Policy*, 2001).

The last concept, human rights, is both broad and complex and requires careful consideration. Human rights are the innate rights one possesses for being simply human. This is a commonly accepted definition in the literature that follows both Shue (1996) and Donnelly (1998), two leading writers in this area. The broadness of the scope of human rights requires a narrowing of the scope of inquiry, such that researchers, in most cases, investigate certain aspects of human rights. This study will

investigate subsistence rights, a crucial aspect of human rights, and will use this more specific term for the purposes of clarity. Subsistence rights are the rights to unpolluted air, unpolluted water, adequate food, adequate clothing, adequate shelter, and minimal preventive health care (Shue p. 23). For the purposes of this study, subsistence rights are best measured by physical quality of life indicators, namely life expectancy and infant mortality.

Literature Review

While this study is largely exploratory, it does build on existing literature that deals with transition and the environment. Specifically, I will review research that was conducted in the late 1990s on Central Eastern European states. The shared regional experience with communism and the subsequent transition have made these states remarkably similar, so I will consider studies of states throughout the CEE. First I will review economic and political literature as it relates to the environment and conclude with a critical review of the human rights literature.

According to Millard (1998), Poland is more interested in saving its economy than the environment despite the progress it has made to clean up the environment in the early years of transition. Investigating the activities of NGOs and Poland's environmental policy, he argues that it will be difficult to create a sustainable environment, as a result of the government giving greater attention to economics and EU accession (p. 147). Similarly, Fagin and Jehlicka (1998) in their study of the Czech Republic's Environmental Impact Assessment (EIA) and environmental investment figures provided by the Czech government, argue that it has shortsighted environmental strategies and is misusing environmental monies. As the government tackles one problem area, it creates a new problem area (p. 114); and more

environmental funds are spent on research than on cleanup; for example, it reduces sulfur dioxide gas but ignores carbon dioxide emissions (p. 118). Another problem is the overwhelming lack of public participation in the Environmental Impact Assessment (EIA), a guide for environmental policy makers (p. 120). The lack of public involvement stems from the government's unwillingness to collect environmental information at a community level and the diminished numbers of environmental groups (p. 113, p. 120). Millard (1998) along with Fagin and Jehlicka (1998), make strong cases based on the best data available at the time. Their findings and arguments might have been stronger if they investigated a longer time-series, establishing clearer trends and producing a higher level of generalizability. Additionally, states concerned with EU accession must comply with environmental guidelines; these guidelines seem to be a catalyst for environmental reform.

In Romania, the population has adopted a "survival mentality", and non-economic areas, like the environment, receive little attention. Though Romania is polluted, the people no longer care about the environment in their country (Dragomiresc, et al 1998). This case study of Romania in the 1990s illuminates the people's aversion to a rapid transition and their emphasis on basic needs, such as staying warm (p. 163).

According to O'Toole and Hanf's (1998) case study, Hungarian environmental problems are also resulting from the priority of economic policy. They point to the weakness of institutions and public inaction as a hindrance for Hungary's environment, but argue that Hungary's environment is better off than other CEE states (p. 93). Bulgaria's situation is desperate indeed; as its hardships are comparable to those of Romania. These growing pains distract attention from Bulgaria's escalating environmental problems (Baker and Baumgartl 1998). Baker and Baumgartl argue

that the privatization that accompanies economic transition results in selling off state owned industry often to those who do not have the tools or the capital to maintain the industry, and so pollution escalates and the environmental problems are exacerbated (p. 184). Their research does not consider the reverse scenario, wherein a state maintains control of industry. With privatization comes all the laws that rule a market economy and in the long term, this could be better for the environment; for example privatization leading to increases in domestic capital might lead to increases in funding for environmental NGOs. Most importantly, Baker and Baumgartl find a strong correlation between increasing levels of industrial pollution and the decreasing standard of living in the case of Bulgaria (p. 187). Economic transition may lead to more pollution and a redirecting of policy makers' focus away from environmental issues; however declining life expectancy might be the result of other compromising health issues: poor nutrition, cigarette smoking, or alcoholism. Alternatively, political transition towards a democracy provides opportunity for public involvement and increases the government's accountability for environmental decisions making.

Recognizing the wide scope of human rights, I will review only the most pertinent literature. Shue (1996) argues that subsistence rights are minimal economic security, unpolluted air, clean water, adequate food, adequate clothing, and adequate shelter; these rights are basic rights for everyone. People everywhere are entitled to these rights as a result of their being human. Shue provides the best point of departure for this human rights component; henceforth I will use his more specific term, subsistence rights, in place of human rights. Whereas Shue discusses subsistence rights and includes environmental aspects in his definition, he fails to adequately link the environment and human rights.

Johnston (1995) and Brulle (2000) make weak connections between human rights and the environment. Johnston defines the right to adequate food, shelter, water, etc. as environmental rights. Johnston's term environmental rights, like Shue's subsistence rights, focus on basic rights that are essential for an adequate life and existence. Subsistence rights in Shue's case or environmental rights in Johnston's prove to be the lowest common denominator when discussing human rights. A greater understanding of these rights is one purpose of this study. Brulle argues that there is a theoretical link between health and the environment, but his research focuses more on sustainable development and environmental pollution, than on human rights. Cropper, et al (1997), in a World Bank report on Delhi, India, make the empirical link between pollution and human health; as pollution increases then physical quality of life decreases. This link is also supported by the World Health Organization's (WHO) 2000 fact sheet and Ostro's (1994) study of Santiago, Chile. These studies do not use traditional human rights language like Shue (1996), however they do provide empirical data linking pollution to physical quality of life.

Shue's conceptualization is similar to Johnston's, though they are approaching human rights from different perspectives and fields of study. Brulle in the environmental literature links health and the environment, similar to the quantitative works of Cropper, et al, Ostro, and the WHO. These latter studies do not use the human rights language of Shue; however the idea that researchers in different fields have built a nascent link between human rights and the environment necessitates further exploration and research.

CHAPTER III

HUMAN RIGHTS AND THE ENVIRONMENT

Numerous bodies of research investigate different aspects of human rights: their causes, violations, and enforcement. Scholarly research of specific areas of human rights, for example personal integrity rights, as in Poe and Tate 1994; 1999, include the security of one's own person, the freedom from wrongful imprisonment, and the freedom from torture as outlined in United Nations (UN) covenants. These human rights violations are more easily documented than ambiguous or subtle violations for several reasons: they have been traditionally observed by international organization like the UN Human Rights Commission; there is the personal integrity scale that quantifies reports on human rights and is widely available to researchers [3]; these violations are a central focus of high profile NGOs like Amnesty International. Additionally, current human rights declarations, instruments, and research lag behind contemporary international attitudes (Maggio and Lynch, 1997). Therefore it is necessary to further investigate human rights with specific consideration of other aspects, such as the environment, deemed important by the contemporary international community. This chapter will consider several United Nations charters and covenants that enumerate specific human rights. Additionally, Shue's conceptualization of subsistence rights will be explored and the importance of linking the environment and subsistence rights will be argued.

Until recently, international human rights instruments have typically accorded minimal attention to the environment [4]. There are numerous studies dealing with

economic, political, and civil rights. Economic rights, as stated in the International Covenant on Economic, Social, and Cultural Rights (United Nations, 1966), include equal pay for equal work (ICESC, Article 7 (a) (i)), the ability to organize trade unions (ICESC, Article 8.1 (b)), and the right to strike (ICESC, Article 8.1 (d)). The International Covenant on Civil and Political Rights (United Nations, 1966) advances: liberty and security of person, (ICCPR, Article 9.1), self-determination (ICCPR, Article 1), freedom from wrongful imprisonment (ICCPR, Article 11), peaceful assembly (ICCPR, Article 21), and equal protection of the law (ICCPR, Article 26). These international covenants and the rights they enumerate identify the human rights most often researched.

Shue (1996) argues that subsistence rights, the rights to subsist, are as justifiable as physical integrity rights. Subsistence rights include security from unpolluted air and water, adequate clothing and shelter, and basic health care. He argues, "No one can fully, if at all, enjoy any right that is supposedly protected by society if he or she lacks the essentials for a reasonably healthy and active life. Deficiencies in the means of subsistence can be just as fatal, incapacitating, or painful as violations of physical security" (Shue 1996).

Environmental and Subsistence Rights: The Foundation

Similar to Shue's (1996) subsistence rights definition is Johnston's environmental rights definition. The right to a clean environment (Johnston 1995), is crucial for the realization of international human rights. These rights are important to understand because the environment is the foundation to which all things derive life. A greater realization of these rights is to better realize the foundation of other human rights. International human rights: personal integrity, physical security, economic,

political, and civil rights depend on subsistence rights (Shue 1996), just as subsistence rights depend on environmental rights.

Barbara Johnston (1995) links the environment and human rights in the following way:

> The right to health, a decent existence, work, and occupational safety and health; the right to an adequate standard of living, freedom from hunger, an adequate and wholesome diet, and decent housing; the right to education, culture, equality and nondiscrimination, dignity, and harmonious development of personality; the rights to peace; and the right to development are all rights established by existing United Nations covenants…basic life requirements that all humans are entitled to. All these rights depend on a healthy environment (p. 113).

Just as a structure depends on its foundational integrity, international human rights depend on a healthy environment.

Other instruments have made the connection between the environment and human rights. The Stockholm Declaration of 1972 is the most widely accepted international environmental norm (Maggio and Lynch 1997). It asserts:

> Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears solemn responsibility to protect and improve the environment, for present and future generations (Stockholm Declaration 1972).

Principle 1 of the Stockholm Declaration establishes a foundation for linking human rights and environmental protection, declaring that man has a fundamental right to

freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being (Shelton 2002).

United Nations covenants support the link as well. Article 25 of The Universal Declaration of Human rights (UDHR) states "Everyone has the right to a standard of living adequate for the health and wellness of himself and his family…" (United Nations, 1948). All other human rights presuppose an adequate physical quality of life and an adequate level of health. These rights are often ignored or violated even though other human rights are realized. If an individual's physical quality of life and health is put at risk because of environmental pollutions, then his/her environmental rights are violated.

If environmental rights are necessary for the realization of other human rights, it is then important to understand violations of environmental rights. Societies, corporations, and individuals exploit these rights in a variety of ways. For example: the clear cutting of forests to fuel a national economy results in the destruction of indigenous peoples' ability to meet their basic needs of food and shelter; a direct violation of Article 25 of the UDHR (United Nations). A developed state, streamlining agricultural output by employing chemical fertilizers and pesticides might undermine local drinking water supplies. These violations are so pervasive that some might argue that such violations are necessary. Without security of environmental rights, i.e. through environmental protection legislation, environmental education recycling programs, industrial regulations, etc., all others rights are affected.

Without security of environmental rights such as clean air, clean water, and clean land, one cannot realize the rights of speech or freedom from wrongful imprisonment. These latter rights depend on security of environmental rights. It is

difficult to imagine that environmental degradation causes human rights violations; it is more logical to understand the link between the environment and physical quality of life. In theory, a clean environment means a healthy quality of life; conversely, high levels of pollutants mean a poor quality of life. Finally, security of environmental rights does not cause civil, political, social, economic, and cultural rights; environmental rights are necessary but not sufficient for the realization of other human rights.

The environmental component of the subsistence rights definition is central to this study for several reasons. First, the environment, as argued above, is critical for the realization of human rights. Understanding the environment as necessary to all human rights encourages policy makers to consider the larger ramifications of environmental legislation, development, and inaction. Second, focusing on the environmental component of subsistence rights and this study's intent to generate hypotheses should encourage researchers to expand on the traditional human rights research and move beyond personal integrity, economic, and political rights research. Third, the exploration of health, environmental quality, and physical quality of life, needs inclusion in political and policy studies on regional, state, and sub-state levels because the effects of the environment are pervasive and permanent. Lastly, the changes in the environment that occur as a result of economic and political transition must be considered to properly measure the costs and benefits of transition.

CHAPTER IV

TRANSITION AND THE ENVIRONMENT

This chapter intends to highlight certain aspects of the Czech Republic (CR) and illustrate the link between transition and the environment by looking at several data sources including Freedom House, Inc. (Freedom House) the government of the Czech Republic[5], the World Bank, and European Union. Investigation of this link will subsequently generate hypotheses for possible employment in future research. Freedom House's *Nations in Transit* (Karatnycky et al., 2001) identifies the Czech Republic as a state in economic and political transition. Comparing the Czech Republic to other former communist states using Freedom House democratization and economic liberalization indicators is useful in explaining this study's first component: transition. The democratization score is the average political process; civil society; independent media; and governance and public administration ratings. The scores are based on a 1 to 7 scale; 1 represents the highest level and 7 represents the lowest level of democratic development. Using the same 1 to 7 scale, the economic liberalization score is based on the average of privatization; macroeconomic policy; and microeconomic policy. These scores reflect the time period from July, 1 1999 through October 31, 2000 (Hughes and Lovei 2001 p. 25).

Out of twenty-seven states currently in transition, the Czech Republic ranks as one of the most advanced states (p. 37). In 2001, the CR received a democracy ranking of 1.81 and an economy ranking of 2.00 (Figure.1). Poland ranks higher than the CR, with a democracy score of 1.44 and an economic score of 1.67. Alternatively,

Hungary has a lower democracy ranking of 1.94, but a higher economic score at 1.92 than the CR. In comparison with other Central Eastern European (CEE) states in transition, such as Yugoslavia and Romania, the Czech scores are significantly better. Poland, Hungary, and the Czech Republic rank closely together in economic and political scores and all three are preparing for the first wave of European Union (EU) expansion in 2004. By comparing other aspects of the CR to similar states, like Poland and Hungary, a clearer picture of the link between transition and the environment can be created.

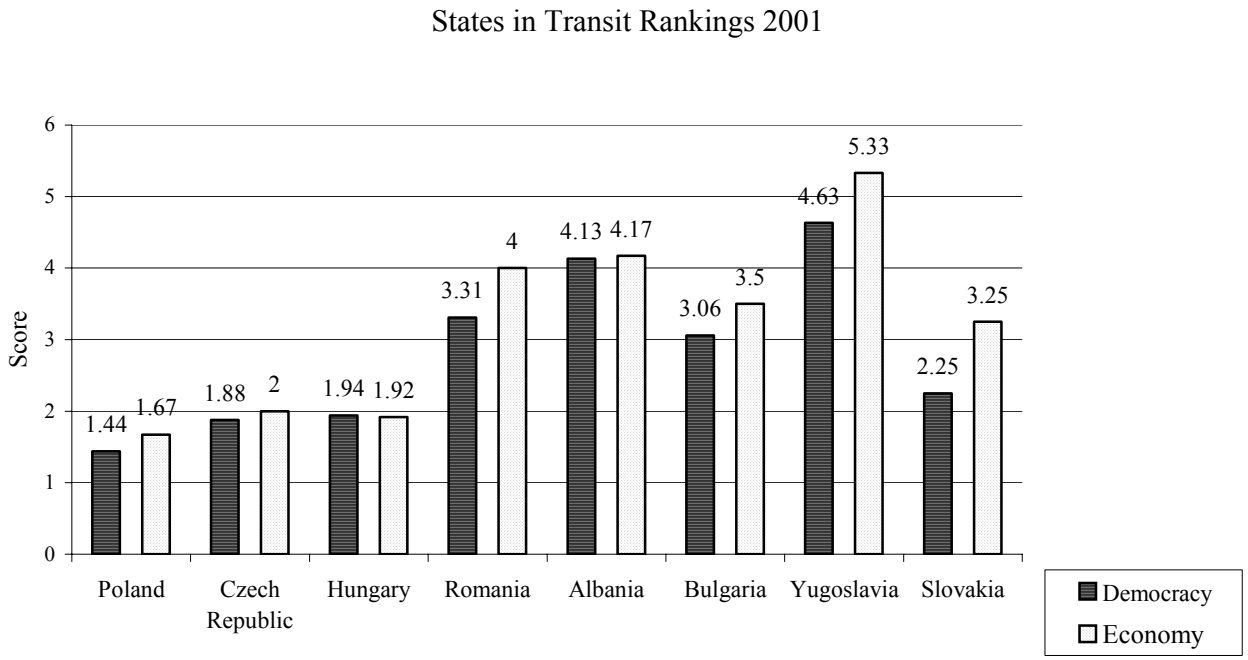

Fig. 1. States in Transit Rankings 2001. Source: Karatnycky et al., Freedom House, Inc., *Nations in Transit*, 2001. (The lower the score the more democratic the state. The lower the score the more liberal the economy.)

One aspect, the quest for EU membership accounts for a major part of the CR's economic and political transition (Karatnycky et al., 2001). EU expansion is important as it shares and supports liberal values and provides stability throughout the region; but for

candidate states, it provides a strong economic partnership and future security. The EU concluded in 1997 that the Czech Republic fulfilled its political criteria with regards to democracy, rule of law, human rights, and protection of minorities (EU Strategy Paper 2001 p.36). Additionally, the EU considers the Czech Republic a functioning market economy with its completed privatization and bank restructuring (p.36).

The EU provides a yearly evaluation of the Czech Republic's economy, political institutions, environment, etc. in preparation for EU accession in the early part of 2004. Before accession, a state must adopt and implement a set of EU's admission guidelines referred to as the *acquis*. Through assessments and reports the EU details the progress of each candidate state's compliance with the *acquis*. The EU Commission on the Czech Republic's *2002 Regular Report Progress Towards Accession* is useful to this study because it provides a current and external perspective of the CR and specifically considers environmental issues as they relate to accession. The *2000*; 2001; and *2002 Regular Report* assesses its progress from 1999 through September 2002.

The environmental section states that the Czech Republic has made progress towards the EU *acquis*. Chapter 22 of the Regular *Report Progress Towards Accession* recommends securing additional investments to ensure the implementation of the environmental components of the EU *acquis* (EU 2001 p 85; EU 2002 p.109). Observing several consecutive years of declining environmental investment from 2.5% of GDP in 1997 to 1.4% of GDP in 2000 (Figure 2), the EU recommends an increase of investments. The EU considers its institutions and legislative progress in aligning with the *acquis* as "good" (p. 83) with the ratification of the Environmental Impact Assessment in early 2002; the ratification of the Kyoto Protocol in late 2001; and the adoption of a national

sustainable development strategy in mid 2001 (EU 2002, p. 104). In addition to the CR's progress with air and water quality improvements during the 1990s, the EU notes that the increase in the number Ministry of Environment (MoE) employees, *The Act on Air Protection* (2002), *The Act on Waste* (2002), and *The Act on Packaging Waste* (2002) have all been beneficial to the environment and EU accession.

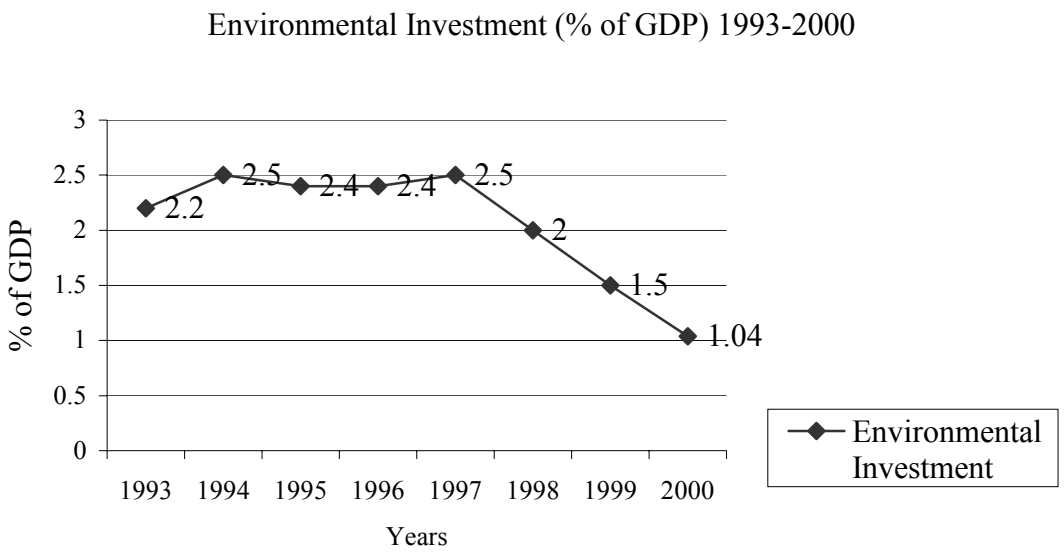

Fig. 2. Environmental Investment as percentage of GDP. Source: Czech Republic's Ministry of Environment data (2001).

The Czech government is committed to transition and EU accession, and understands the necessity of continued environmental reform;

> Agenda 2000 ranks environmental issues among the main challenges of expansion. Only member countries with fully implemented environmental regulations will be able to be a full-fledged part of an integrated Europe and to actively participate in the further development of the environmental policy of the European Union (Czech MoE, 2000).

Since the mid 1990s the MoE has been strengthening and playing an increasingly important role in the accession process. The importance of compliance with the EU *acquis* helped to more clearly define MoE objectives, which subsequently strengthened the ministry's position in government. The increase in the number and quality of environmental policy, initiatives and reports, is one result of the strengthening MoE. *The State Environmental Policy* (MoE, 2001) reports on environmental conditions and deals with environmental protection from 2001 to 2005 and outlines progress and direction of its environmental reform. The MoE identifies greenhouse gas emission, air pollution resulting from transportation and factories, toxic chemicals in the ground water, poor environmental legislation, and a lack of public environmental education and participation as major problem areas (MoE, p.13-14). "The environment thus reflects – and will continue to reflect- both favorable and unfavorable aspects of the transition of the Czech economy and society to free market circumstances" (MoE 2001, p. 7). Even though certain air pollution levels have been declining, automobile emissions are high as more people abandon public transportation and purchase personal automobiles. Consumer waste from excess packaging continues to be problematic. Remaining problems notwithstanding, there have been significant reductions in air pollution indicated by declining levels of particulate, sulfur dioxide, nitrogen oxide, and carbon dioxide (Figure 3).

During the 1990s, environmental investments increased, and in turn, environmental pollution decreased during the same period (Figure 12). The continued decline of pollution levels after investment, which also declined, is most likely the result of medium-term solutions like smokestack scrubbers, natural gas heat conversions, and

milder winters. Currently, the MoE is recommending that 3% of its GDP be invested in the environment (MoE, *State Environmental Policy*, 2001 p. 48), in addition to the amount needed for EU accession. The MoE strongly believes that this additional funding would ensure favorable changes that will lead to sustainable living, sustainable economic development, and a better quality of life (p. 6). The EU states that the investments in the 1990s have produced notable environmental improvements, however it suggests a greater investment is still required (EU *2002 Regular Report*, p. 108-109). These improvements might be somewhat dubious; if environmental investment declines, perhaps air and water quality will worsen and the improvement during the first decade of the Czech transition will have been only temporary.

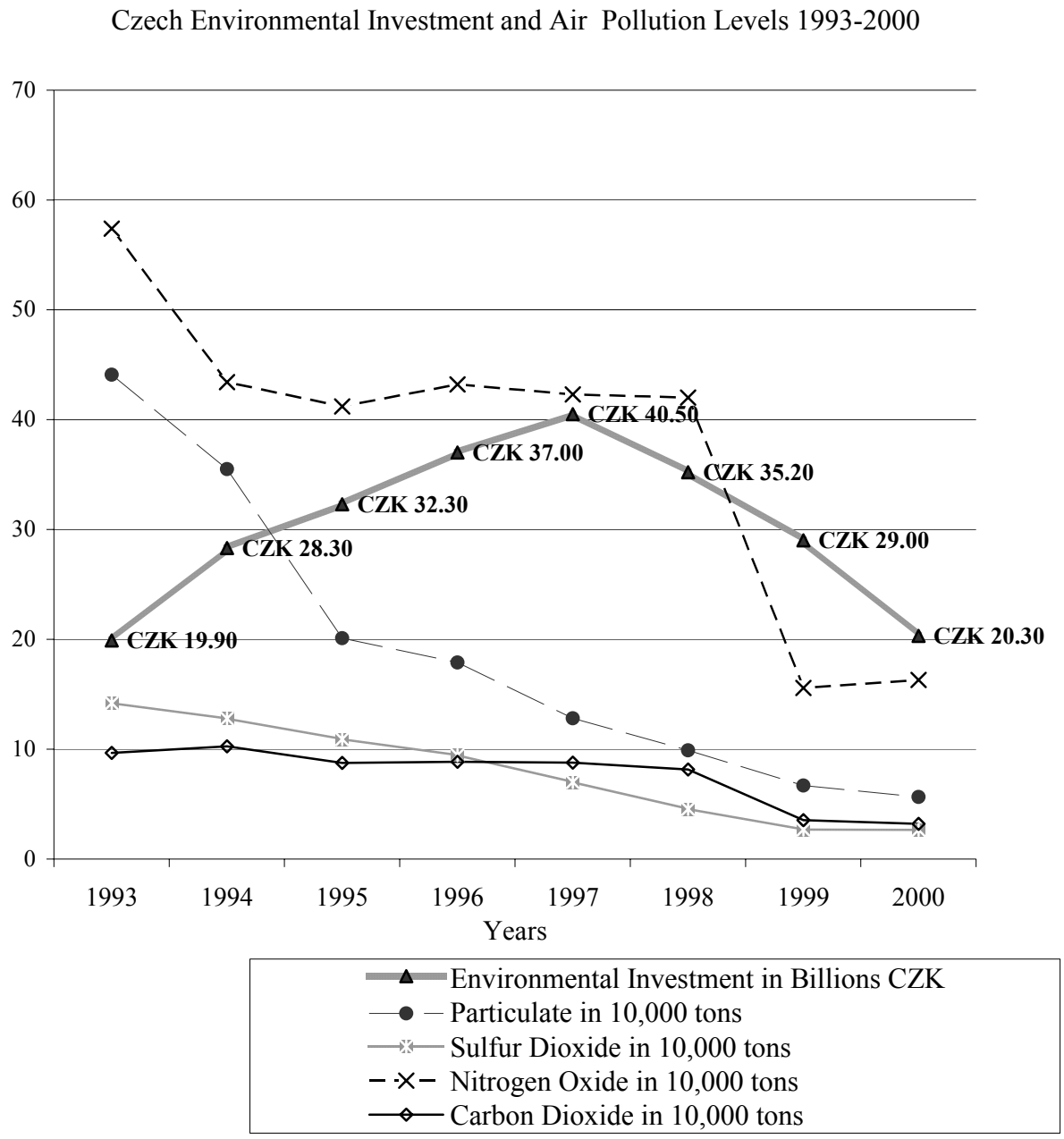

Fig. 3. Czech Environmental Investment and Air Pollution Levels 1993-2000. Source: Czech Republic's Ministry of Environment 2001 data and Pavlinek and Pickles 1999.

In the late 1990s, air pollution declines were significant and at the end of the decade the CR's levels compare favorably to the EU and OECD averages (Figure 3 and

4). It is useful to compare the CR's levels with the EU's to better understand the amount of environmental reform that remains to be done and where it might stand after accession.

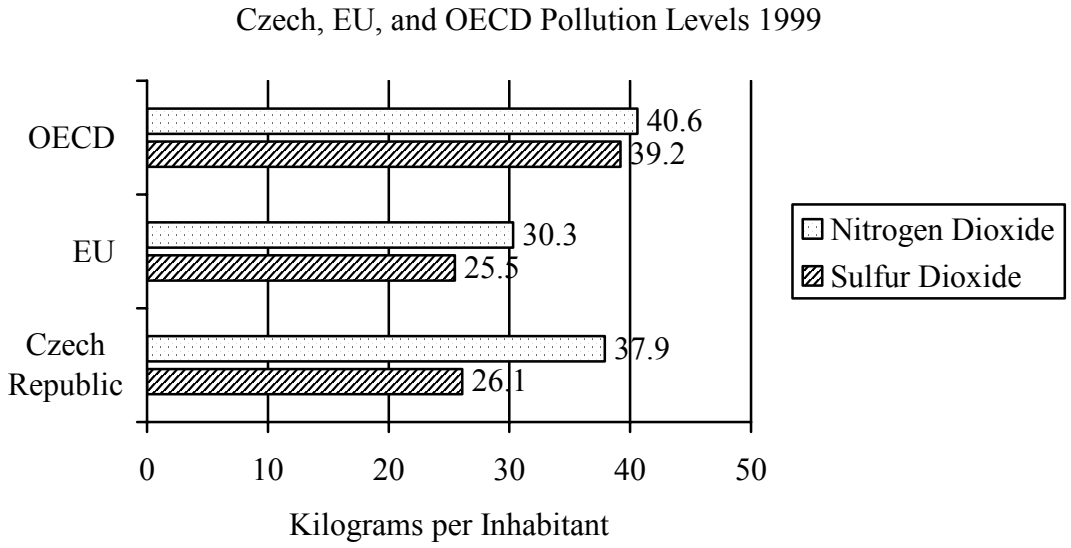

Fig. 4. Czech, EU, and OECD Pollution levels 1999. Source: Czech Republic's Ministry of Environment data (2001).

The CR's nitrogen dioxide levels are 7.6 kg more per inhabitant than the EU's, however the levels are relatively close. Even better, its sulfur dioxide level is only .6 kg more per inhabitant than the EU. The CR's levels of nitrogen and sulfur dioxide are lower than the OECD average by 2.7 kg per inhabitant and 13.1 kg per inhabitant, respectively. Overall, these levels of pollution in the CR are positive when compared to the average levels of OECD states, and its low level of sulfur dioxide in comparison with the EU is promising. The declining air pollution levels exemplify the Czech Republic's quest to comply with the EU *acquis* and eagerness to reduce harmful greenhouse gases. Additionally its identification of environmental problems, focus on reform, and push to increase spending translates into the CR moving closer to EU accession.

Understanding local attitudes on the environment is extremely important because the MoE is pushing to give more responsibility to regional and local environmental authorities (p. 10). The attitudes of citizens within this new democracy can guide policy makers responsible to their constituencies on local, regional, and national levels. The ability to openly express opinions and participate in democratic elections represent another aspect of transition, as the Czechs now have the potential to influence governmental decisions. The opinions of the Czechs surveyed suggest a desire for a better level of environmental quality, and how EU membership might affect the environment. The Ministry of Interior's (MoI) public opinion poll (2000) is one barometer of local environmental attitudes. The majority (55.1%) of the Czechs surveyed rate their environment on a whole as being "bad". Few local instruments address environmental concerns and public involvement and participation in decision-making is very low (Fagin and Jehlicka and 1998; MoE 2001). A bad perception of the environment, coupled with this low level of involvement, makes a fragile situation.

The MoE is slowly moving to create a more optimum situation at the local levels and increase public involvement. In 1999, there were 265 regular clubs with about 3,905 participants at environmental education centers throughout the country (MoE 2000). Less than 0.04% of the Czech population is participating in regular clubs at environmental education centers (calculated by author). This number is far too low to have any significant affect on engaging the population on environmental issues. Clubs are one solution that address environmental education and support environmental reform. The MoE understands the importance of reform and is eagerly implementing the EU *acquis*, but a portion of the Czechs surveyed feel that the EU is not the solution to environmental

reform: 50.8% of those surveyed feel that joining the EU means no change or a worsening of their environment. Moreover, the MoE identifies a general preference for a consumer life style and low public awareness of environmental issues (MoE 2001, p. 10). However, the vast majority of Czechs surveyed sort household glass, paper, and plastic for recycling purposes (MoI 2000). The Czechs might be aware of their environmental problems, but require increased levels of involvement and public participation with clubs and educational programs to address future environmental issues and continue the momentum of pollution reduction.

How does transition affect the environment? The above data suggests that certain aspects of transition have been beneficial for the environment; this is consistent with research suggesting that economic transition, away from a command economy, has been beneficial for the environment (Hughes and Lovei 2000). Some researchers argue that the reduction in levels of air pollutions can be attributed to the economic slowdown and subsequent decline in industrial output (Hughes and Lovei, 2000; Pavlinek and Pickles 1999). The Czech government attributes the decline of some air pollution to policy decisions and the closing down of obsolete industrial operations in the early 1990s (MoE, State Environmental Policy 2001, p 9). The MoE also reports improvements in some areas of water quality; these improvements are results from 330 new wastewater treatment facilities and an overall reduction of industrial fertilizers and pesticides. However, one third of water (water covers 2% of CR'S total area) is classified as either "very highly" or "highly" polluted (p. 9). Pesticides have been reduced by 44% and fertilizers containing NPK (nitrogen, phosphorous, and potassium) have been reduced by 33%. (p. 9).

While the Czechs are concerned about their environment, the transitioning economy has increased levels of consumer waste and automobile traffic. However, the overall decline in air pollution might suggest that environmental initiatives since 1993 are working, i.e. installing smoke stack scrubbers and converting coal-fueled heat to natural gas. Additionally, the MoE has implemented environmental education programs for communities like the Environmental Education, Enlightenment, and Public Awareness (EEEA) (MoE 2001 p. 42), and devised a national "eco-labeling" program that awards environmentally sound products and companies (MoE 2000).

The case of the Czech Republic suggests that a link between transition and the environment might exist, however the strength and the significance of the relationship will require testing in a larger quantitative study. The EU's recommendation to expedite environmental reform, one aspect of transition, seems to have encouraged favorable actions within the Czech government. New environmental initiatives and environmental funding increased during the same period that environmental improvements occurred. The development of environmental education and clubs, though currently on a small scale, indicate that progress towards environmental reform continues. Additionally, the increased transparency of the Czech government, resulting from the political transition, and the publics growing concern over the environment are indicative of transition and occur contemporaneously with declines in pollution levels. Declining pollution levels, might have been caused by an economic slow-down, but an economic slow down is still considered another aspect of economic transition. Perhaps the improvements in environmental quality are only temporary or will not be significant in the latter years of

transition. It is clear, however, that environmental improvements have been made during a period of significant economic and political change in the Czech Republic.

CHAPTER V

THE ENVIRONMENT AND SUBSISTENCE RIGHTS

As discussed above, the right to a clean environment is crucial for the realization of other human rights. This chapter explores the second link of this study: the relationship between the environment and subsistence rights. For purposes of this study the environment is indicated by air and water quality data. Physical quality of life data (life expectancy and infant mortality) indicates subsistence rights.

The World Bank argues that environmental improvements in Central Eastern Europe (CEE) that encourage real health benefits for those living in polluted areas have been "relatively slow" (Hughes and Lovei 2000). Improvements in the Czech Republic's environment, illustrated in the figures above, have been significant. The World Bank considers the Czech Republic (CR) to be on a path towards environmental reform (Hughes and Lovei 2000). Several studies link environmental conditions and physical quality of life with a detailed analysis of air, water, and land pollutions' affect on human health (Ostro 1994; Cropper, et al., 1997; World Health Organization, 2000). The Czech Republic illustrates the link with its declining pollution levels and increasing life expectancy, the first component of physical quality of life (Figure 6). The link is also illustrated by its decline in pollution and subsequent declining infant mortality, the second component of physical quality of life (Figure 7).

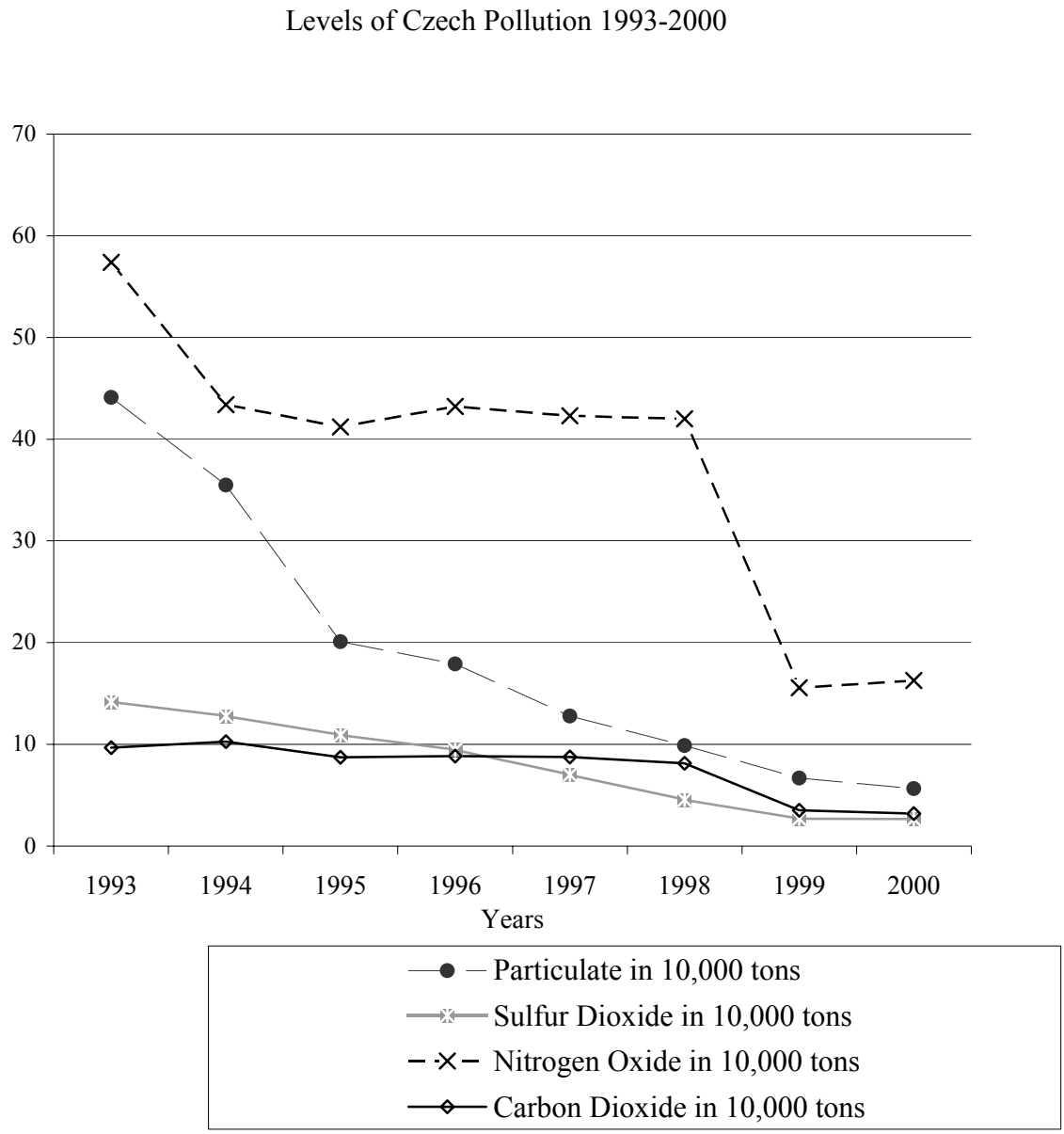

Fig. 5. Czech Environmental Investment and Air Pollution Levels 1993-2000. Source: Czech Republic's Ministry of Environment 2001 data and Pavlinek and Pickles 1999.

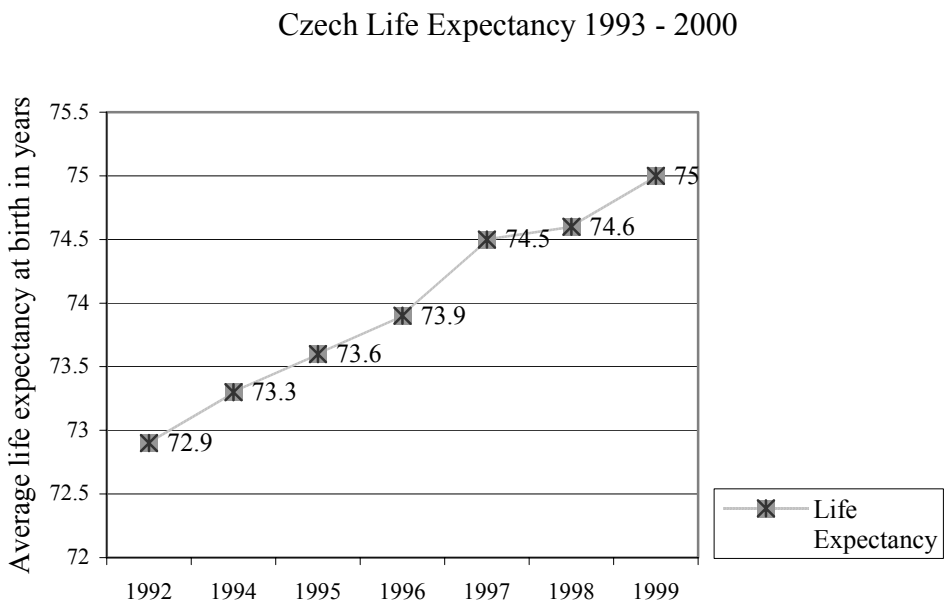

Fig. 6. Czech Life Expectancy 1993-2000. Source: World Bank Human Development Network. HNP Stats 2001.

As pollution declines the environment improves. The improvements in the environment correspond to improvements in physical quality of life. The two graphs suggest that a relationship between the pollution levels and quality of life indicators exists in the case of the Czech Republic. Air pollution declines during the same period that life expectancy rises. During the same period, infant mortality (children under the age of five) also declines (Figure 7). The data concerning the case of the CR is consistent with the findings from the World Bank's and World Health Organization (WHO) research. Another study that looks at declining physical quality of life resulting from increased levels of pollution further strengthens the relationship.

In many towns and cities, exposure to air pollution is the main environmental threat to human health. Winter smog, made up of soot, dust, and sulfur dioxide, has long been associated with temporary spikes in the number of deaths. Long-

term exposure…also contributes to a wide range of chronic respiratory disease and exacerbates heart disease and other conditions (World Bank, World Development Indicators, Air Pollution 3.13, 2001).

The improvements in the Czech environment are clearly identifiable during the same period of improvements in life expectancy and infant mortality. The data on the Czech Republic since 1993 is consistent with previous studies concerning transition, the environment and physical quality of life (Ostro 1994; Cropper, et al 1997; Hughes and Lovei 2000; World Bank 2001).

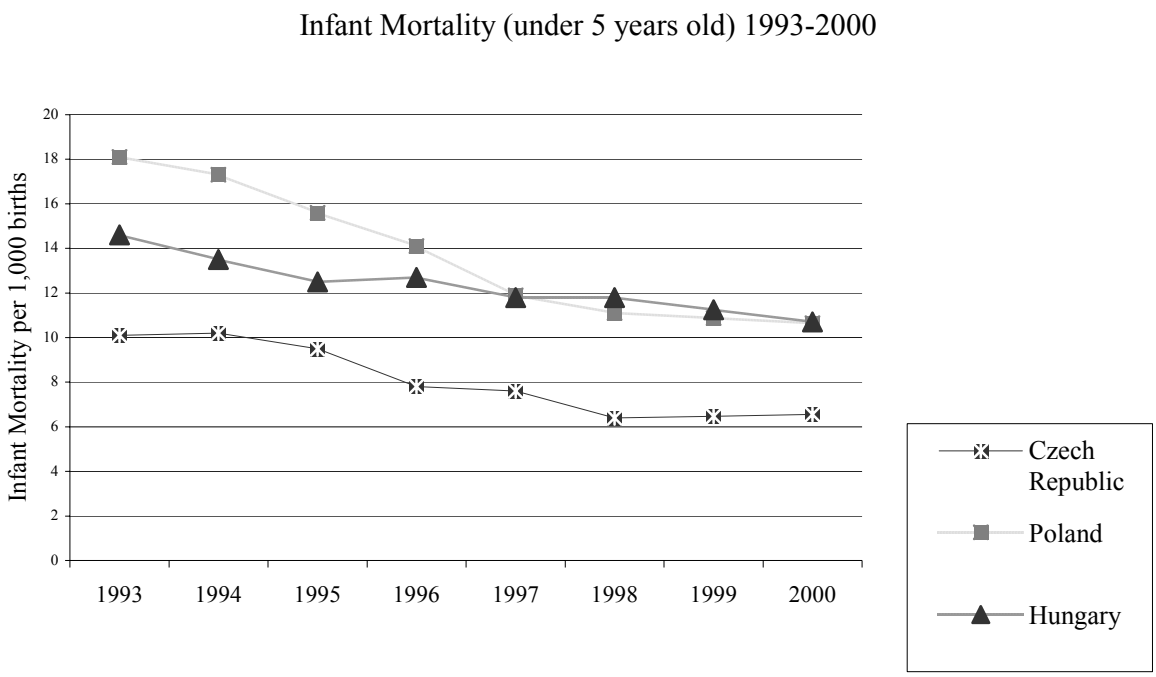

Fig. 7. Infant Mortality (under 5 years old). Source: World Bank Human development Network. HNP Stats 2001.

The Czech Republic is outperforming several states in the region, such as Poland and Hungary, in life expectancy and infant mortality (Figure 8). However, Poland and

Hungary have significantly lower sulfur dioxide, nitrogen dioxide, and carbon dioxide levels. According to the World Bank's World Development Indicators (2001), nitrogen dioxide and carbon dioxide are detrimental to the environment, but sulfur dioxide causes more immediate death in human beings (p.174). Figure 8 shows the CR with higher levels of pollution and a better physical quality of life. If one focuses on the sulfur dioxide levels, than the link between environmental quality and physical quality of life is clearer.

The CR has the lowest sulfur dioxide level at 26.1 kg per inhabitant, whereas Poland and Hungary have 49.1 kg and 58.4, respectively. Hungary with the highest level of sulfur dioxide has the lowest life expectancy (71.25 years) and the highest infant mortality (10.7 infants per 1,000 births). Sulfur dioxide is the dominant environmental pollution that appears to be relating negatively to physical quality of life in Figure 8.

CEE Pollution Levels and Physical Quality of Life 1999

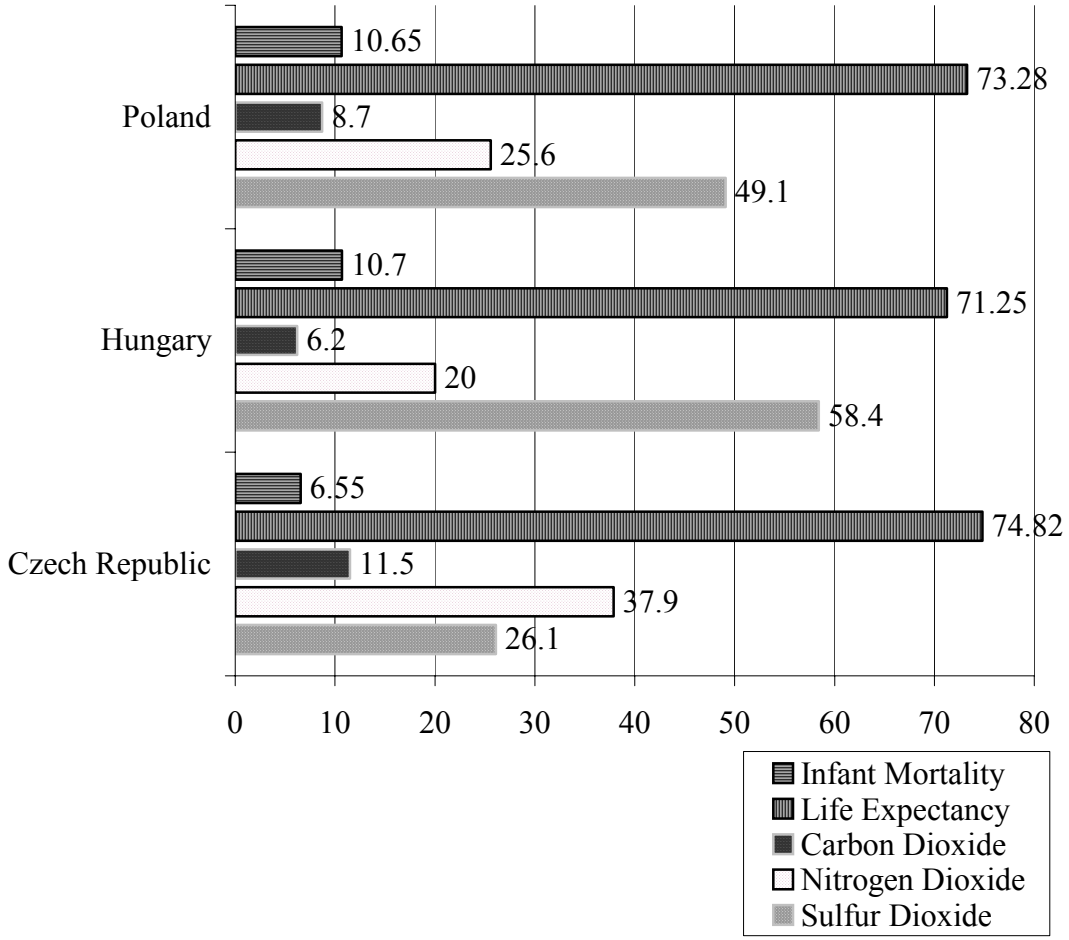

Fig. 8. CEE Pollution Levels and Physical Quality of Life. Source: Czech Republic's Ministry of Environment (2001) for pollution data; the pollution is measured in KG per inhabitant. World Bank Human Development Network. HNP Stats (2001) for life expectancy measured in years from birth and infant mortality data measured in mortality (children under 5 per) 1,000 births.

The World Bank reports that air pollution is responsible for at least 500,000 deaths and 4-5 million new cases of chronic bronchitis each year, worldwide (World Bank, 1992). Compared to Western European cities with similarly sized populations, Prague's air pollution measured in total suspended particulate is higher. Its pollution is higher than Berlin, a city with a population almost three times Prague's size. However, Prague at 59 micrograms per cubic meter is cleaner than Budapest at 63 micrograms per cubic meter. The World Health Organization's maximum recommended air pollution levels are 90 micrograms per cubic meter. Although the states (Figure 9) are below the WHO limit, the comparison between Western Europe and Central Eastern Europe is still useful.

City and State	City Population 2000	Total Suspended Particulate (micrograms per cubic meter) 1995
Prague, Czech Republic	1.2 million	59
Vienna, Austria	2.0 million	47
Berlin, Germany	3.3 million	50
Budapest, Hungary	1.8 million	63

Fig. 9. Source: World Bank, World Development Indicators, Environment, Air Pollution 3.13. 2001.

While Prague has lower levels of suspended particulate than Budapest, the Czech Republic, as a whole, is cleaner than the average Organization of Economic Cooperation and Development (OECD) state. Alternatively, Hungary and Poland's sulfur dioxide levels are significantly higher either the CR or OECD average (Figure 10). The CR's sulfur dioxide levels are similar to the EU's and are continuing to improve. While Hungary and Poland have nitrogen dioxide levels better than the EU and OECD averages,

the CR's level is significantly worse. The trend since 1993 shows reductions of pollution levels in the CR; it is likely that declines in pollution will continue as they move closer to EU accession in 2004.

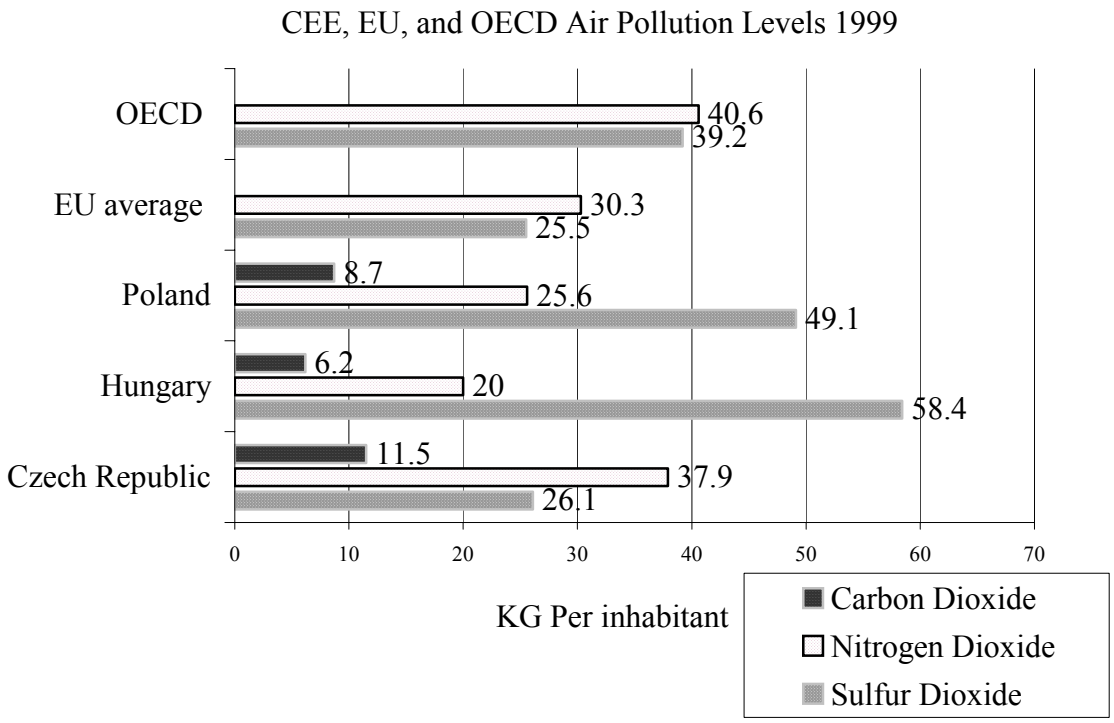

Fig. 10. CEE, EU, and OECD Air Pollution Levels 1999. Source: Czech Ministry of Environment (2001).

Polluted water, just as polluted air, can have negative effects on human health (World Bank, World Development Indicators, 2001). A World Bank study suggests a strong correlation between water pollution and physical quality of life. A major source of water pollution is industrial waste coming from organic pollutants, which leads to environmental degradation. Measuring organic pollution from industrial outputs is the most common indicator of water pollution (World Bank 2001 p.149). The Czech Republic's level of water pollution has declined along with its air pollution. Compared to

other states its water pollution levels measured in 1993 and in 1998 have declined more than Poland and Hungary (Figure 11). Although the data shows that the Czech Republic emits more organic water pollution per day than either Poland or Hungary, emits fewer kilograms of pollution per day per worker. This suggests that the level of efficiency in the Czech Republic, inspired by privatization and environmental initiatives, might be higher than in other states. The CR's reductions also suggest that the newly established water treatment plants are operating successfully.

State	Emissions of Organic Water Pollutant (Kilograms per day) 1993	Emissions of Organic Water Pollutant (Kilograms per day) 1998	Emissions of Organic Water Pollutant (Kilograms per day per worker) 1998
Czech Republic	162,615	158,462	0.14
Hungary	136,767	139,769	0.17
Poland	343,910	435,511	0.16

Fig. 11. Emissions of organic water waste measured in biochemical oxygen demand (BOD) [6]. Source: World Bank, World Development Indicators, Environment, Water Pollution 3.6. 2001; World Bank Human Development Network. HNP Stats 2001.

The water pollution levels in the Czech Republic have improved along with its air quality levels. Declines in its air and water pollution coincide with improvements in physical quality of life (life expectancy and infant mortality). The relationship between environmental improvements and physical quality of life improvements seem consistent with the previous research. With this supporting data and past research, the link between the environment and subsistence rights is more clearly understood. The Czech Republic's

environmental improvements, indicated by air and water quality data, have helped increase the level of subsistence rights which are measured by physical quality of life data. The case of the Czech Republic suggests this link: environmental improvements happen concurrently with improvements in subsistence rights. However, further research is still necessary to test and better explain this link.

CHAPTER VI

ANALYSIS AND SUGGESTED HYPOTHESES

The analysis of the two links; the first between transition and the environment; the second between the environment and subsistence rights, helps explain the relationships in the case of the Czech Republic (CR), and will hopefully generate hypotheses for future research. Transition and the environment appear to be linked. The Czech political transition, including its environmental initiatives and education, environmental clubs and events, and its recently implemented Freedom of Information Act have been mostly beneficial for the environment. Among other developments, such actions further engaged the citizenry by providing accurate environmental information. Increased environmental spending has ensured environmental reform which has led to measurable environmental improvements. Privatization closed obsolete factories with outdated technology, and moved to a more service-oriented economy. It reduced wastefulness and eliminated government subsidies, again translating into increased levels of efficiency and overall reductions in levels of pollution (Figure 11). New macro-economic policies created economic linkages with the European Union (EU). The EU's influence led to the adoption of other European regulations, environmental initiatives, and EU financial and technical assistance, all of which have helped to improve environmental quality.

The European Union has significantly affected the transition of the Czech Republic by setting guidelines and goals in the form of the EU acquis and prompting the CR to increase environmental investments. The goal of EU membership requires environmental compliances with air and water quality and waste disposal standards. Returning property to families gave people a more pronounced stake in their country, and increased economic opportunities that were unimaginable under the communist regime. These aspects of transition have all led to the substantial reductions in levels of air and water pollution.

The second link, between the environment and subsistence rights, is far more complex. Past research has identified a link between the environment and physical quality of life, and the CR further exemplifies this link. Lower levels of pollution do appear to be better for human health and livelihood. Reductions in air pollution measured in sulfur dioxide, suspended particulate, carbon dioxide, or nitrogen oxide occurred at the same time as improvements in physical quality of life, measured by life expectancy and infant mortality. Thus, this is consistent with studies that argue that there is a link between pollution and physical quality of life, and therefore subsistence rights.

Of course, there are valid arguments suggesting that other variables might be influencing the improvements in physical quality of life. Other variables might be causing the apparent relationship between the environment and subsistence rights. Perhaps other variables are causing these physical quality of life improvements, For example, improvements is subsistence rights might be explained by improved health care or increased Gross Demosttic Product (GDP). Consider then, the health sector of the Czech Republic: during the communist regime, the Czech Republic maintained an

adequate level of health care; however since then there have been few changes in the health care sector. First, health care is no longer paid for by the state exclusively, this means that availability of health care has changed as privatization continues (Goldstein, et al 1996). In the case of the Czech Republic, evidence of the health care reform is difficult to asses because of a lack of available data, but the data does suggest that there has been a slight decline since 1997 in the number of physicians and hospital beds in governmental health establishments, while the non-governmental medical establishments have seen a similarly small increase in the number of physicians and a reduction in the number of hospital beds (Figure 12). The charts suggest that change in the health sector has been minimal. Consequently, it would be difficult to argue that a decrease in beds and physicians would improve its physical quality of life indicators.

Governmental Health Establishments

	1997	1998	1999	2000
Beds	82,107	79,958	78,799	77,781
Physicians	14,468	14,120	14,182	14,313

Non-governmental Health Establishments

	1997	1998	1999	2000
Beds	38,890	38,840	38,478	38,113
Physicians	22,207	22,566	22,672	22,877

Fig. 12. Czech Governmental and Non-governmental Health Establishments. Source: World Bank Human Development Network. HNP Stats (2001)

Another possible explanation in the physical quality of life improvements is increased GDP. The argument that life improves with growth has been generally accepted by many in the studies of development (Easterly 1999). Easterly's cross-national study finds that the relationship between income and physical quality of life is statistically significant and positive, but rather uneven. Of particular interest to this study, one conclusion Easterly makes is that in many cases pollution gets worse with transition. Most importantly, he concludes that increases in GDP take decades to actually effect physical quality of life. He argues that the relationship of growth and life expectancy appears strong across states but not across time. In the case of the Czech Republic, the growth, GDP, has not yet had its effect on physical quality of life; it is unclear if it ever will.

Alternatively, globally-shared improvements could explain changes in the Czech Republic's physical quality of life. Technological advancements in medical procedures could explain the decreased infant mortality and increased life expectancy. The improvement in life expectancy worldwide seems to reflect technical breakthroughs in antibiotics associated with world economic growth (Easterly 1999). However these arguments do not account for the unequal advancements in physical quality of life in Central Eastern Europe (CEE). Hungary and Poland are examples of states that have the same access to current medical technology and new antibiotics, as the Czech Republic; however they are not experiencing the same improvements in levels of physical quality of life. This supports the argument that the Czechs are doing something else that effects physical quality of life. Perhaps it is environmental reform leading to a healthier environment that improves physical quality of life.

After consideration of these other possible variables, it becomes clearer that the CR's environmental improvements might have led to a greater realization of subsistence rights. These subsistence rights, measured as physical quality of life, allegedly improve because of cleaner water and cleaner air. A large cross-national study would be able to accurately test the link between the environment and subsistence rights.

The hypothesis-generating approach in this study was selected to produce testable hypotheses for future cross national studies. These suggested hypotheses should help guide future research and encourage further exploration, just as they should not limit more in-depth research and consideration of other variables, hypotheses and concepts. Consider these hypotheses concerning the link between transition and the environment as it might relate to future studies.

The first suggested hypothesis (H1) is applicable to a larger cross-national time series study and is derived from the case of the Czech Republic. Since 1993 pollution levels have declined; however at a certain point pollution may stop declining.

> H1. In the early years of political and economic transition, a state experiences a reduction in environmental pollution; *x* years later, reduction in pollution stagnates or reverses.

Employing this hypothesis across states could help explain economic and political trends that effect the environment. As some researchers suggest, declines in economic output reduce pollution levels (Pavlinek and Pickles 363-364). One side-effect of transition might be a decline in economic output, as the state changes its economic landscape, it struggles financially, production slows, and antiquated factories are unable to compete and consequently close. Alternatively, a new government resulting from a political

transition will likely tackle different problems or the same problems differently than did the old regime. In the case of CEE states, environmental issues, often vocalized by the Greens, were a catalyst for change in the late 1980s and early 1990s (Baker and Jehlicka 1998).

The significant influence of the European Union on the Czech Republic necessitates further exploration of regional and global organizations' effect on a state's environment. The second hypothesis (H2) is suggested by this study and with its implementation in future cross-national research will hopefully explain differences in pollution levels among EU candidate states versus transitioning states not currently seeking near-term EU accession.

> H2. States in transition not seeking EU membership have higher levels of pollution and lower physical quality of life than states seeking membership.

The states not slated for membership are non-compliant with the EU *acquis*; a state's slow implementation of the environmental components of the EU *acquis* could lead to increased pollution levels and a decreased physical quality of life. By expanding a study to include Russia and other Newly Independent States (NIS) in testing H2, the influence of the European Union could be further understood. This would facilitate comparison of the states' compliance with the EU *acquis* and enable conclusions as to the EU's indirect effect on the environment.

The Czech Republic's implementation of numerous environmental laws and initiatives seem to have encouraged environmental improvements. The outcomes of the legislation and initiatives implemented by the Ministry of Environment (MoE) are

explained in this study as results of political transition. The third hypothesis (H3) suggests that a relationship between transition and environmental legislation may exist.

> H3. If a state in transition enacts and enforces environmental laws, it will have a greater reduction of pollution levels.

Consideration of environmental legislation, either by measuring outcomes or counting the number of laws, will not provide an entire picture, but when considered as one hypothesis in a larger study it could explain trends across states. It could also provide a clearer understanding of the effects of environmental legislation. Alternatively, political transition (environmental legislation) might not effect the environment; it could be that (economic transition) economic growth effects the environment.

Testing the relationship between economic growth and the environment will be important to any cross-national study. The fourth hypothesis (H4) illustrates this relationship.

> H4. Increased economic growth, measured by GDP, will have a positive relationship with environmental improvements.

Scholarly literature has debated this relationship significantly: the cycle of rejecting and failing to reject the null hypothesis seems to have occurred with each new study. Exclusion of H4 from a future study would be erroneous, and its inclusion will add greater depth to the research.

The second link between the environment and subsistence rights as it relates to states in transition should be included in future research. The case of the Czech Republic clearly illustrates this link and should encourage the implementation of the hypotheses generated by this study.

The fifth hypothesis (H5) could be tested in a cross national study and better explain the link between the environment and subsistence rights. It is suggested that the environment be measured with air and water quality data and that subsistence rights be measured with physical quality of life data (life expectancy and infant mortality).

H5. If environmental quality improves then subsistence rights improve.

The second link and H5 make the connection between political science's research of human rights and environmental science's research of pollution and its effect on humans. Further exploration and the inclusion of different scholarly perspectives will undoubtedly be beneficial for various fields of research.

The sixth hypothesis (H6) suggests a positive relationship between environmental spending and physical quality of life and is derived from the case of the Czech Republic.

H6. As environmental investment increases then physical quality of life improves.

This study suggests that increases in environmental spending occurred along with reductions in pollution and improvements in physical quality of life. In order to see if environmental improvements affect subsistence rights, it is important to explore the impetus of the improvements: environmental investment. Moreover the EU and the MoE believe that these environmental investments are important and useful in effecting real change in the Czech Republic. A similar link probably exists in other transitioning states.

These suggested hypotheses, generated by the case of the Czech Republic, might be applied to future quantitative research projects on states in transition. By using the two links presented in this study, quantitative research could yield stimulating results. Using levels of water, air, and soil pollution data from the World Bank, state government

sources, or Non-Governmental Organizations, could operationalize environmental degradation. Economic and political transition across time is available, however the consistency of the Freedom House, Inc. data is recommended because of its availability and scope. The subsistence rights component could be operationalized using physical quality of life measured in terms of life expectancy and infant mortality. Physical quality of life could be divided into ethnic or socioeconomic categories. A deeper analysis and operationalization of subsistence rights is desirable, or other sets of human rights could be explored depending on the interests of the researcher (Quinn 1997).

CHAPTER VII

CONCLUSION

The case of the Czech Republic (CR) from 1993 thru 2002 explores the two links considered in this study. The first link is between transition and the environment. As a transitioning state's economic and political structure changes, so does the quality of its environment. If the economy allows for inefficient industry with high levels of energy consumption and low levels of output then the quality of the environment decline. If the political structure ignores environmental legislations or its constituency's environmental concerns, then the quality of the environment further declines. The second link is between the environment and subsistence rights. The environment is the basis for all that is living, and subsistence rights require a certain level of environmental quality and protection. This study alleges that a polluted environment means poor subsistence rights; if rights are indicated by physical quality of life (life expectancy and infant mortality) and the environment is polluted, then a state will have a low physical quality of life.

The political and economic transition has been beneficial for the Czech environment. Its initiatives, encouraged by the European Union (EU), have helped protect the environment and subsequently advanced subsistence rights. The Czech Republic's recent life expectancy and infant mortality improvements indicate a greater realization of subsistence rights. Such rights are realized more fully in a cleaner environment.

Until a more complete study involving numerous cases is carried out, it is

possible, though unlikely, that the relationship between the environment and subsistence rights is spurious. Clearly, the physical quality of life indicators capture the meaning of the subsistence rights definition. Additionally, there is significant data from various studies linking the environment and physical quality of life. Global prosperity, improved medical technology, or increased Gross Domestic Product (GDP) might also improve physical quality of life, however in the case of the Czech Republic it is unlikely that these variables are significantly linked with subsistence rights. It is important to consider these aspects as well as the study's more significant contribution to future research

This study contributes several testable hypotheses to be incorporated in future cross-national studies. The first hypothesis suggests that reductions in pollution in a transitioning state are only temporary. Second, external organizations and institutions, such as the EU, might have a significant effect on a state's environment. Third, a state enacting and enforcing a greater number of environmental laws will have a greater reduction in pollution levels. The fourth hypothesis suggests that a state with increased growth will have more environmental improvements. The fifth hypothesis suggests that environmental improvements lead to improved subsistence rights. The sixth hypothesis suggests that states with more environmental investments will lead to physical quality of life improvements.

This study is only part of a greater understanding of the relationship between the environment and subsistence rights, therefore it is hoped that a connection between the environment and subsistence rights is understood. When we see environmental degradation, we must see this as a human rights violation. When we see environmental legislation, we must understand this is a path toward greater human rights realization. All

Human rights must be viewed through an environmental lens; this is why exploring subsistence rights is so important. The two concepts are closely linked: environmental legislation allows for a clean environment that protects environmental rights, and supports subsistence rights. Human rights, political and civil, enable people to participate in environmental decision-making. Without satisfying basic subsistence rights, clean air and clean water, then physical quality of life declines and other rights are difficult to realize.

Additionally, this study has drawn on data and ideas from a variety of fields such as geography, health, environmental science, and political science. All of these fields explore human rights, transition, and the environment in their unique way; however by integrating these approaches, a more complete understanding of the Czech Republic and the related topics is achieved. A combination of ideas and concepts from different fields into one study should help encourage similar integrative research.

Testing the suggested hypotheses is the next step. While this study offered great detail about the transition in the Czech Republic, it had several limitations. First, the single case approach lacked some of the strengths of a cross-national study. More cases would have allowed for statistical analysis and for stronger generalizations to have been drawn. The timeframe might have been expanded to include the pre-transition period; however most environmental data before 1989 is difficult to ascertain and is often unreliable. More variables could have been explored to better explain the case at hand and transition in Central Eastern Europe.

NOTES

1. Central Eastern Europe (CEE) is today the most commonly used name for the region. (Pavlinek and Pickles 1999). The CEE includes Czech Republic, Slovakia, Hungary, Poland, Romania, Albania, Bulgaria, and Yugoslavia.

2. On January 1st, 1993 Czechoslovakia divided peacefully into two independent states the Czech Republic and the Slovak Republic. Their separation is commonly referred to as the "Velvet Divorce".

3. The Personal Integrity Scale, created by Michael Stohl, provides a scale to measure violations of personal integrity (Michael Stohl, David Carleton and Steven Johnson. 1984. "Human Rights and U.S. Foreign Assistance from Nixon to Carter." Journal of Peace Research 21:125-26.) This scale codes Amnesty International and US State Department country reports, and has become a common tool used by human rights researchers. The accessibility of this scale and the availability of country reports across time are the contributing factors as to why personal integrity rights are thoroughly researched.

4. The International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, and the Universal Declaration of Human Rights, three primary international human rights instruments, barely mention the relationship between protection of the environment and human rights.

5. The data provided by the Czech government is the most comprehensive data available. Its reliability might be questioned; however the environmental data is used in reporting to the European Union and the United Nations, and is considered reliable by other researchers (Pavlinek and Pickles 1999). It is standard practice to use governmental data as opposed to organizational data, as the latter tends to be limited in scope and years, a result of limited funding and the general acceptance and usage of governmental data.

6. Biochemical oxygen demand (BOD) refers to the amount of oxygen that bacteria in the water will consume in breaking down waste. Sewage overload means exhausting oxygen in the water in the breaking down process; conversely sewage treatment reduces BOD (World Bank, World Development Indicators, 2001).

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