Selected Papers of the 1st International Conference on Sustainability

2018
Selected Papers of the 1st International Conference on Sustainability at Budapest Business School

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Budapest Business School, 2020
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Foreword

Sustainable development is one of the core strategic goals of Budapest Business School, and as a socially responsible university, we strive to addressing the major challenges of the 21st century and making a positive difference to the economic, social, and environmental well-being of our communities. We pursue change through our teaching, research, public events, community engagements and activities.

As the main function of a university is to provide high-level education, it can also be a tool to raise awareness amongst students and promote our passion for sustainability. The main goal of our first sustainability conference “Environmental Ethics and Human Values across Cultures” held on 23rd April 2018 organised and hosted by the Faculty of International Management and Business was to engage all undergraduate, graduate, and postgraduate students in research activities at their level and incite them to participate. Our aim was to introduce up-to-date knowledge about the dimensions of sustainability, to bring this vital field of thought closer to them and to heighten their enthusiasm for sustainability. Students were involved in an enjoyable experience-based learning environment and interacted with different cultures resulting in a very successful international conference. We believe that through our educational efforts we make our students understand the importance of sustainability and responsibility and we can educate responsible citizens, employees, and leaders.

The three plenary talks and the 37 presentation topics conveyed the same message. The presentations were organised in sections: Human rights and migration, Sustainable Agriculture and The environmental pillar of sustainability. The Scientific Board selected 12 papers for publication which give an overview of the presented topics to the reader. Among these topics you can find e-governance, the environmental impact of a war, questions related to migration, agriculture in dry areas, water scarcity, misconceptions of hunting, financial incentives, sustainable competitive advantage of German automobiles, nuclear waste, smoking habits of BBS students.

Finally, we would like to acknowledge the work of the academic staff and the students of BBS who made The Environmental Ethics and Human Values across Cultures conference a success.

Judit Beke and Éva Erdélyi
Members of Sustainability Network of BBS
23 April 2018 – Monday

Environmental Ethics & Human Values across Cultures

International Scientific Conference on Sustainability

Budapest Business School, Faculty of International Management and Business


Registration from 12.30 in the Central Building of BBS FIMB, Budapest, Diósy L. u. 22-24

Plenary session in Room: EI 09

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Environmental Ethics & Human Values across Cultures

International Scientific Conference on Sustainability

Panel 1. Human rights and migration

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**Environmental Ethics & Human Values across Cultures**

**International Scientific Conference on Sustainability**

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Sustainable Competitive Advantage of German Automobiles

Ikenna Ajaegbu, Budapest Business School, Hungary

Abstract

It is becoming paramount for firms to understand how to strategize to maintain sustainable competitiveness in automotive industry. The aim of this paper is to understand what firms in German automobile industry must do to remain in business or even ahead in its domestic and international business arena over time. In doing so, Michael Porter’s model of competitive advantage was used to analyse home-built competitive advantage of the German automotive industry and its links to global competitiveness. The results point to the fact that there are links between the German automotive industry’s domestic and global competitiveness.

Keywords: competitiveness, decentralization, strategic position, automotive industry, sustainability

Introduction

Competitive advantage is a term that has become central in the discussions on the critical reasons why firms both in the domestic and global market remain ahead of competitors. As simple as the term may look, it encompasses many variables which one must consider to be able to grasp how to sustain competitive advantage. The classical trade theories point to operational effectiveness as key for business success. But since the advent of globalisation, the market is no longer isolated (as barriers to national boundaries are falling apart). The consumer has many product options to choose from, the number of competitors is on the increase, innovation is at a faster rate, values are changing, and national business conditions are changing to meet the main modern trends. The question that readily comes to mind is: how can a firm sustain competitive advantage? Although many firms in the industry where rapid change is driving the market have adopted some measures such as outsourcing, gig economy and sharing economy in the bide to ensure survival, the following question cannot be ignored: Is achieving

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1 This research paper was published in Prosperitas, 2018. 5(4) p. 7-15. Budapest, Budapest Business School
operation effectiveness at home the only factor that will guarantee the sustainability of competitive advantage abroad?

Operational effectiveness although important, cannot be the only factor a firm considers sustaining its presence in the playing field (especially in an industry where rapid change in technology is predominant). The ability of the firm to adapt to these changes result in innovation which is key to remaining in the consumer shopping list. Understanding and even anticipating the drivers of consumer choices such as values, personality, and environmental awareness ensures that whatever product is directed to the consumer, it expresses the values and personality of the consumer. Therefore, it is highly significant that a firm considers its strategic position. In order to understand how a firm can sustain competitive advantage, this paper objectively examines the German automotive industry, primarily through the review of existing literature and scientific research reports using Michael Porter’s diamond model as framework.

**Literature Review**

**Relevant Economic Theories**

One will not review economic and trade theories without being drawn to arguments posed by early economists. The first is mercantilism, a trade theory which holds that a government can improve the exports and stifle imports to accumulate wealth in the form of precious metals (Rugman–Collinson, 2012). The world has advanced beyond this theory as it does not explain the kind of trade that is prevalent in the world today. It is then valuable to recognise the work of Adam Smith, who concluded that a country has full advantages if it can specialise in the production of goods with which it has full advantages, which in turn will result in a positive export turnover. On the other hand, the country should import goods with which it has absolute disadvantage as this measure will result in gaining prosperity and enhancing the supply of goods (Mtgwe, 2006). Similarly, David Ricardo threw more light to the theory of absolute advantage by introducing the theory of comparative advantage, which recognises that market forces will allocate a nation’s resources to those industries where it is relatively most productive (Costinot–Donaldson, 2012). These theories underscore the importance of cost advantages. As a result, one can agree that it is still essential in describing international firms. But these theories failed in their underlying assumptions which cannot be used to explain in its entirety the trade patterns in modern times.
Relevant Management Theories

It is still not astonishing today to see managers who still nurse the idea that their job is to pilot the affairs of a firm in such a manner as to be the best among the firms, produce the best products, and employ the best professionals. The question that comes to mind is, whether this is the right strategy in the face of the current economic and business reality? If Henri Fayol’s conclusion that the functions of management were common to all businesses (Robbins–Coulter, 2012) hold water, can such a firm survive in the modern business world? In this context, Weber’s bureaucracy which is the model picture of an ideal organisation, can be recalled (Robbins–Coulter, 2012). But the reality today entails an organisation which is more flexible and allows more creativity at all levels of management. If one agrees that creativity is an integral part of modern-day organisations and management, then one will lean towards the behavioural approach in general. In this vein human resource becomes the most critical asset of the organisation, and invariably, should be appropriately managed to create the necessary sensitivity to the changing reality in modern times, which needs a rapid response (Robbins–Coulter, 2012).

Methodology

The theory of competitive advantage by Michael Porter linked all the above mentioned economic, management and consumer behaviour theories based on strategic management, international economics and innovation to develop national and international competitiveness and its sustenance. It links the four factors of the diamond and the two external factors of a firm shown in Porter’ well-known illustration. Porter presented a coherent and concise framework for understanding the relationship between the elements. Also, Porter concluded that all factors of the diamond include all assets and skills vital for an industry’s competitive advantage and information which create the opportunities and answers how available assets and abilities are managed (Porter, 1990). The next section will look at this factor and its determining variables.

Porter identified factors that have an impact on the competitive advantage of a nation under the so-called diamond figure. The factor condition, demand condition, the firm’s strategy, structure and rivalry, and related supplier industries remain very close to the firms and internal operations. On the other hand, government and luck are external to the firms (Rugman–Collinson, 2012). The competitiveness of the industry depends on the level of interaction between these. At this juncture, it is important to look at each of the above factors in more details and see how it relates to the German automobile industry.
Result / Result Analysis

Factor Conditions

Human resources: The dual education system in Germany has enhanced the quality of labour force available to the automotive industry. The system combines classroom and training approach to produce highly trained personnel that meets industrial requirements (GTAI 2016/2017). In 2015, the German automotive industry employed over 792,500 personnel, 100,000 of them were engaged in R&D (GTAI, 2016/2017). The number of skilled labour force has increased over time. 84 percent of the population has university entrance qualification, 30 percent of the graduates have basic knowledge in natural science or engineering, and an increasing number of students are applying for courses which are directly related to mechatronics and automobile engineering (GTAI, 2016/2017) (GTAI, 2014). These and labour-related incentives such as training supports, recruitment support, and wage subsidies are the key variable that create home operation effectiveness and sustain the competitive advantage of the German automotive industry through strategic positioning.

Material/physical resources: Germany is a key country in Europe regarding automotive industry. Germany has the largest concentration of OEM (original equipment manufacturer) plants in Europe and modern research and development facilities. It is estimated that Germany has over 41 OEM plants and 21 of the world automotive OEM suppliers are in Germany (GTAI 2014). This high concentration of automotive related R&D design, supply, manufacturing, and assembly facilities are vital to sustain competitive advantage as it is important in collaboration for research activities with leading automotive research institutions for the development of new technology and processes (GTAI 2016/2017). Also, the German roads, airports, railroads, seaports, communication and energy infrastructure have been rated world class (GTAI, 2014).

Demand Condition

The German home market has been known to be one of the world’s most complex markets. The nature of the consumers in the home market becomes a key factor that drives the firms to meet some specific requirements to compete favourably in the home market (Porter 1990). But for a rapidly changing business reality and environment, a firm’s strategy and ability to respond to this change are paramount if the firm wants to remain competitive. Understanding the consumption pattern of consumer and market realities of the home country, and aligning management, industry, and business strategy are keys that result into successful cost advantage. Therefore, the firms in the German automotive industry are conducting constant research to
understand how consumers purchase, use, and dispose off products, services, ideas or experiences in the process of satisfying their needs (which is known as consumer behaviour) (Solomon, 2011). One of the reasons the German automotive industry has grown over the past century is the nature of its home demand. The German home market is more of a free market with less government intervention over the years. It implies that traditionally the survival of a firm depends on the ability of the firm to identify the absolute, comparative, and cost advantages, as this will enhance innovation to meet the market demand of high quality, reliable, durable, efficient and safe products (Porter, 1990). The players in this industry anticipate the future and innovate to remain the pillar of the nation’s industry. It is of importance to gain competitive advantage at home and globally (Porter, 1990). No wonder the German car is in high demand all over the world. This high demand can be attributed to the home market’s developed product attribute such as quality, reliability, durability, efficiency, design, innovations and safety (GTAI, 2016/2017). The increasing environmental awareness and sustainability issues are now part of the above attributes. The consumer is becoming more ethical. The consumer can use their purchasing power to support the firms who are acting in a way that agrees with the consumer’s value. Therefore, the market demand for made in Germany vehicle with optimised environment friendly features has increased worldwide.

The industry has achieved a high advantage in respect to the attributes (efficiency, durability, reliability, quality, safety, and innovation) that meet the market need to move towards more clean products that are sustainable based on the value attached to the environment by both the domestic and international consumers. This clearly point to understanding industry positioning and strategic business position (Porter, 1990).

**Related and Supporting Industry**

Related and supporting industry is one of the main advantages at the disposal of the German automotive industry. There are successful firms linked vertically (to create high quality) and horizontally connected firms (to create competitive firms that develop values which support the automotive industry and remain competitive). Decentralization of the automotive industry encouraged the springing up of small, medium and large-scale auto-related R&D, design, supply, manufacturing and assembling firms in Germany (GTAI, 2016/2017). Building a local supplier base, creates an enhanced supply network and boost capacity. It is necessary because the innovations will need the value that suppliers bring to the German automotive industry. The supplier input has become key to value added to products in technical advancement in the German automotive industry. Firms can develop most aspects of their businesses such as
working capital, research and development, specific purpose and personnel, using financial incentives provided by both private and government financial institutions. Grants, loans, guarantees, equity capital and Mezzanine capital are geared towards meeting the needs of diverse economic activities of firms in Germany at different stages of their investment process (GTAI 2016/2017).

**Firm Strategy, Structure and Rivalry**

The firms in the German automotive industry compete with differentiation strategy which is founded on high quality and reliability, high performance and fast delivery. They mostly compete in the premium brand and as such get the premium price compared to their competitors internationally (GTAI 2014). German OEMs international focus is evident in the number of the exported vehicle from the German home production and foreign profit. And the massive domestic and international investment in R&D is a proof of the ability of German OEMs to compete more on performance and not price, which is a more important priority of the home consumers.

**The Role of Chance/Government**

Germany has remained economically and politically stable over some decades. There have not been any significant economic or political setbacks that had impacted on the business environment adversely. The legal system in Germany is also world class; as a democratic nation, contractual agreement and patents are ensured. The German government has continually improved the tax system and has put in place a reliable infrastructure such as road network, seaports, rail lines, communication and energy facilities which are key to the favourable business environment.

**Conclusions**

Although Germany is rich with basic and advanced factors of a production, the competitive advantage of the automotive industry comes from the advanced and specialised nature of these resources. The anticipation of changes in the key drivers of consumer values, personality, and environmental awareness kept the German automakers on edge and enhanced their high investment in research and development resulting in a high level of innovation. It is the key driver of sustained competitive advantage.

Secondly, the German market in principle is a market where entry and exit are free. This results in the decentralisation of the automotive industry creating room for small, medium and large-
scale firms to compete. Again, solid economic, political, and business environment have ensured sustained strategy and growth in the industry. Sustainability of competitiveness has not been achieved in isolation by the German automotive industry. German firms have remained sustainable and has considered both the internal and external environments. They are ready to adapt to changes as soon as possible.

References


Water Scarcity and Its Economic Effect in Cape Town in the 21st Century

Milán Bak; Budapest Business School, Hungary

Abstract

The main purpose of my research is to investigate the most common problem, which is water scarcity in the 21st century in Cape Town and its economic effect. My research question is: How is the decreasing amount of water affecting inhabitants’ life and the economy of Cape Town? The broad problem area is that water supply is not sufficient. Water is provided based on the amount of rainwater through dams. In my research I want to give the main reasons of lack of water. I will highlight both the importance of a bucket of water, and also possibilities how water can be supplied later. I will research the possible projects which are intended to be introduced as water scarcity is said to be the biggest crisis in Cape Town’s history seeing that everybody is afraid of day 0, which means taps will be closed. Unfortunately, this cannot be avoided as calculations show. Shops ran out of water no matter how much a bottle of water cost over the last weeks. The introduction of giving water per capita would happen for the first time. According to predictions this will be the first city without water, but not the last. My acquaintances help me with distributing the questionnaire to the inhabitants of Cape Town.

Keywords: biggest crisis, day 0, reasons for lack of water, water scarcity

Introduction to Cape Town’s Situation

Cape Town belongs to the most developed cities of the African continent and it was able to organize the Football World Championship in 2010, however the inhabitants suffer from the lack of one of the basic necessities which is drinkable water. This is the problem area of my research because water supply is not as efficient as expected.

The objective of my research is to introduce the everyday life of Capetonians while describing the main reasons which led to this situation, and what could be a possible solution to this problem. Recently I have read a lot of newspapers and online articles on Cape Town’s water scarcity, and I have become more and more interested in this topic, that is why I made a decision to take part in the conference organized by my university. If people keep on using more water
than they are allowed to consume, Cape Town will be the first city where giving water per capita would be introduced.

Unfortunately, this is a relevant topic, in the following chapters I will also mention other cities which might be threatened by water scarcity in the future. Everybody has to be aware of the fact that living without water is impossible, and we have to save it together.

My research proposal is to investigate the causes which have led to these serious consequences.

**Research Methods Used**

During my research I prepared a questionnaire which was distributed directly among Capetonians. Concerning the analysis of the questionnaire, I was satisfied with the results of my questions. 56, 3% of the respondents were female, while men composed 43, 8%. As this research was prepared for a scientific conference related to sustainability, everybody knew the meaning of the word “sustainability” thus it proved me the reliability of the questionnaire. For me it was a bit surprising that only 25% were aware of the fact that the drinkable amount of water on the earth is only 1%. Going to my next question which dealt with the methods of saving water: 87, 5% answered that they reused the water and only 8% closed the tap when water was not needed. 25% said that they preferred having a bath and fortunately no one chose the last option which was paying no attention to water saving. This was a multiple-choice question because there are people who pay more attention to water saving. It proved that by April more people had realized the importance of water saving. It was a surprising result that despite the fact that the city is suffering from water scarcity 56, 3% of the respondents would not move away from the city even if they had the possibility to do so. 75 % are aware of the fact that even European cities are threatened to run out of water, and in connection with this 62,5 % of my respondents say that in the future water will be worth more than gold.

On Facebook I could find a Hungarian woman who allowed me to use her observation as a secondary source, describing the everyday life as an eyewitness. She emphasized that since 2013 she had been going to the same well every day to get water for cooking and cleaning purposes. Of course, I had to go to the library and use the internet to get primary and secondary literatures sources. Besides these I could even find online and printed versions of scientific papers and other primary sources like dissertation and conference proceedings. As secondary sources I browsed the website of Cape Town and EBSCO database.
Reasons for the Lack of Water

As water belongs to the most important resources, we have to be aware of the fact that 3% of the water resource is fresh water, and only 1% is good for human consumption (Módos, 2016). By the notion of sustainable water management, we mean the provision of adequate amount of drinkable water. Water scarcity is a phenomenon, when citizens cannot satisfy their needs of drinking, washing, cleaning with clean water. The supply of water is under pressure because the quality and amount of surface water is not adequate.

City of Cape Town is part of the Western Cape Water Supply System, which is supplied by water of rainfall stored in dams (Department of Water and Sanitation, 2018). The city has been facing a serious drought for many years, so water scarcity and “Day 0” are not just a sudden happening but the peak of a long process. In Cape Town, the National Department of Water and Sanitation is responsible for the 3 largest dams and for managing the adequate water supply for the Capetonians. According to Piotr Wolski of the Climate System Analysis Group, the probability of such drought happening is only every 300 years (Cape Town, 2018). It is clear for everybody the supply and demand are not in equilibrium. If it starts to rain, everybody puts their buckets outside, and they start hoping to have enough water. As far as the causes are concerned, it has to be mentioned that Cape Town has 4 million inhabitants and it is also a preferred tourist destination (Lee, Every Day is world water day for South Africa's Cape Town, 2018). Not to mention that global warming has a serious effect on the city’s rainfall as well. In 2016 trade-wind El Nino made the drought worse (Moeslim, 2018).

All these factors have contributed to today’s problems. As it can be seen in Figure 1 during the last 4 years the level of water in the main dams has significantly decreased. The overall capacity of the dams is below 900 million m$^3$ (Department of Water and Sanitation, 2018).

Figure 1: Level of dams between 2014 and 2018 in Cape Town in %

Source: City of Cape Town, 2018
Figure 1 shows how the major dams were affected during the drought, which is said to be one of the reasons. Theewaterskloof is the major reservoir, and the level of water is about to achieve the 13.5% critical limit.

“Day 0” that Makes Everybody Worried

“Day 0 refers to the day when taps will be closed and residents of the city will have to travel to one of 200 city-wide collection points to get the allocated 25 litres per person per day, under the watchful eye of an armed guard”(Harris-Zhao-Visser, 2018). From this data it can be calculated that every collection point has to serve 20,000 Capetonians every day (Said-Moorhouse & Gianluca, 2018).

Researches are carried out by the University of Cape Town to raise the inhabitants’ awareness that is why a kind of water map was elaborated to compare the consumption of Capetonians and the winner is awarded by a certificate. It is clear that the city of Cape Town and its 3.4 million permanent residents are facing difficult circumstances (Harris, Zhao, & Visser, 2018).

According to the predictions, the level of water keeps decreasing in a rapid way, thus taps will be closed sooner in spite of the fact that the weekly trend shows a 0.5% decrease.

Mayor Patricia de Lille states: “It is quite unbelievable that a majority of people do not seem to care and are sending all of us headlong towards Day Zero” (Lee, Every Day is world water day for South Africa's Cape Town, 2018). The only unanswered question is when exactly it will happen. Although we can draw the consequence that people consume more than they should, the weekly trend shows a 7.6% decrease (City of Cape Town, 2018). It has to be mentioned that although the number of bottled water to be bought by one person was limited, all the shops had run out of bottled water, and selling them at a much higher price began.

Introduction of Restrictions in Cape Town

The crisis led to the introduction of “6B water restrictions” on 01 February 2018 and daily consumption of water was limited to 50 litres per person (City of Cape Town, 2018). It included measuring the used borehole water, forbidding the use of portable play pools, and the use of drinkable water for irrigation purposes is also forbidden. If somebody does not keep these rules, he/she will be obliged to pay a fine. Only an estimated 55% of the city's residents pay attention to the rules (Said-Moorhouse & Gianluca, 2018).
Everywhere in the city and even at the airport people are warned to save water. Lee (Lee, Every Day is world water day for South Africa’s Cape Town, 2018) points out that taps will be closed if the level of water reaches 13.5% of the total.

**What Can Be a Possible Solution in the City?**

The city started to work on upgrades concerning the water system in 2018. But of course they have to hurry because it should have already been done years ago. The projects include desalination, aquifer and water-recycling projects. EU’s environmental agency made a research based on the current consumption rates, and according to their calculations Spain, Cyprus, Bulgaria and Malta are threatened by drought (Morris, 2018).

We must not forget that water is irreplaceable. Everybody has to close the tap during cleaning the teeth it is even more environmentally friendly to have a shower than having a bath.

You do not have to be expert to realize that Cape Town will run out of water, but the only question is when it will happen exactly. Amartya Sen, an economist states: “It is not droughts that causes cities to run out of water, but bad policy” (Cape Town, 2018).

Figure 2. shows the required daily yield of water comparing the different solutions in the future. Desalination would be the most expensive solution. Comparing the cost of wastewater used to desalination, it can be said both the operation of wastewater use would be much cheaper and energy prices would also be lower. Ground water would be cheaper than wastewater reuse and also the operating costs are much lower. Surface water would be the cheapest solution.

*Figure 2: Possible projects to supply water in the future in Millions of Litre Per Day*

<table>
<thead>
<tr>
<th>Source</th>
<th>Target yield MLD</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>100</td>
<td>More could be abstracted from ground water sources in dry years.</td>
</tr>
<tr>
<td>Re-use</td>
<td>70</td>
<td>One large re-use reclamation plant (economies of scale)</td>
</tr>
<tr>
<td>Desalination</td>
<td>120</td>
<td>Optimal scale for desalination is 120-150 MLD</td>
</tr>
<tr>
<td>Surface water</td>
<td>60</td>
<td>Lower Berg River Voelklei Augmentation scheme</td>
</tr>
<tr>
<td>Total (diverse sources)</td>
<td>350</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Department of Water and Sanitation, 2018*

The authorities started to work on projects, but it is said to be late because the construction takes a long time and a lot of money is needed to get the targeted yield of water.
During my research I had to cope with the distance between Budapest and Cape Town. Fortunately, I could overcome this hindrance quite easily. It was easy to find up-to-date sources because the peak of water scarcity is happening even these days. The decreasing amount of water causes stress among the inhabitants, and difficulties in the economy. It has a serious effect on the agriculture because of irrigation problems, that is why they need to import more.

To recap what has been said so far, it can be stated that not only Capetonians but also every individual has to save water because we only have a definite amount of it.

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Environmental Impact of the War. Case Study: Kosovo Conflict of 1999

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Abstract

Technological advancements have enabled humans to transform the world and adapt it to their needs. Unfortunately, the large number of conflicts in the previous century showed that those modifications are not always to the benefit of the people. NATO intervention in Serbia in 1999 was waged to the detriment of the environment and health of local population. NATO air strikes hit industrial plants resulting in soil, water and air pollution, furthermore, their military arsenal contained Depleted Uranium (DU), a heavy metal used for military purposes that has low radioactivity levels. It is assumed that DU causes chronic diseases and contaminates nature.

Keywords: environment, conflict, depleted uranium, Yugoslavia, NATO intervention

Introduction

Human race has an inalienable right to progress in a care-free environment. This depends largely on the way humans are using the resources available to them and how this impacts the environment around them. The first principle of the Declaration of Stockholm states that man has the sole responsibility to preserve the natural environment for the future generations and eliminates any action directed at inhibiting this duty (United Nations, 1972). Most conflict research has focused on the loss of human life and the destruction of infrastructure however, the outcome of the war and its impact on the environment received less attention (Hupy, 2008). Open armed conflicts are not the only source of environmental degradation. Indirect effects, like forced migration, pollution and trade disputes can also cause international tensions that in turn lead to severe damages to the immediate natural surroundings. Thus, it is important to dedicate a complete field of research to this area and incorporate it in the body of international law. For decades, practitioners and environmental policy makers have tried to construct an international legal framework to regulate dynamics of environment and establish clear rules on how to treat it. Treaties and regulations flowing from this work were built on many international

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ad hoc forums and rounds. However, there are still significant gaps. Globally speaking, leaders are aware of the threats coming from the environmental degradation, climate change and man-induced modifications on the environment.

Technology and science progressed so swiftly that humans have the power to transform the environment on an unparalleled scale. The invention, production and use of weapons of mass-destruction is one example of how man-made inventions can destroy natural habitats and cause ecological disturbances. In recent history, the most famous cases of conflicts that left visible traces of environmental degradation are the two World Wars, the Vietnam war, the Gulf war, and the Kosovo conflict.

Today it is possible to leave a permanent mark on the nature not only by the use of nuclear weapons, chemical agents or biological organisms, but also by the abuse of conventional weapons. Consequences are visible on all living species on the planet. Human population may suffer from the increased risk of lethal diseases, while animals and plants risk becoming extinct due to the modification of their natural habitat. All these effects can alter the surface of the Earth and make it less liveable.

**Overview of the Conflict**

On the 24th of March 1999, NATO became involved in the Kosovo war, initiating a three-month long campaign against the Former Republic of Yugoslavia (which by that time comprised only Serbia and Montenegro) and their authoritarian leader Slobodan Milošević. There were several names given to this operation but for the Serbian public it is widely known as “Operation Merciful Angel”. Governments who joined this intervention under the umbrella of NATO were the USA, Belgium, Norway, Portugal, Spain, Turkey, Canada, The Netherlands, Denmark, Italy, Germany, France and the United Kingdom (Government of Republic of Serbia 2004).

The intervention had several unique characteristics. It was the first intervention to use force without the approval of the UN Security Council and the first one that aimed to halt the crimes against the humanity committed within the borders of a country.

The views on this operation are still divided to this day. On the one hand, academics, theoreticians and representatives of civilian movements saw it as justified because of the seriousness of the crimes committed against the civilians in Kosovo (Roberts, 1999). On the other hand, the means that NATO employed during the intervention did not seem appropriate and did not contribute immediately to cessation of violence in Kosovo. As well as moral and ethical doubts, there were also some legal challenges that appeared problematic during and after
the military operation. Namely, NATO broke several international agreements and conventions and also put into the question the validity of non-intervention principle indicated in the United Nations Charter. In addition to this, a number of environmental conventions were broken as the targets were not just military objects, but industrial complexes and civilian institutions, like schools, hospitals and a national broadcaster. A further key controversy was the use of depleted uranium (DU). The USA admitted to using it in limited amounts, but researchers and investigators found considerable amounts still residing in both Serbia and Kosovo, and believe that this had damaged the general health of the population. This will be discussed further in more details of how DU is causing division among the experts and military strategists.

A key question that has evolved concerning the intervention was why the international response came only when it did in 1999. War in Federal Socialist Republic of Yugoslavia had started in 1991 with the secession of Slovenia and it sharpened with the separation of Bosnia and Herzegovina. Some have suggested that having failed to prevent atrocities during that first phase of war, especially regarding genocidal acts in Bosnia, the international community felt obliged to act and prevent what could have become an ethnic cleansing of Kosovo Albanians (Roberts, 1999). However, others suggest that had the UN Security Council at least been consulted, then the intervention would have been seen as less controversial. In addition, conduct of the war seemed to have failed to comply with general rules of warfare and resulted in violation of the Geneva Conventions and Additional Protocols, especially regarding the choosing of targets and selection of weapons, such as cluster bombs and armoury covered with depleted uranium. It has been estimated that during the approximately ninety incidents numerous civilians were killed or injured and refugee convoys were hit (Human Rights Watch, 2001).

Human loss, devastating by its nature, was not the only result of this action. NATO used high number of air strikes to deter the enemy. As a result, they targeted all infrastructure that was believed to be aiding the military of the opponent. Unfortunately, numerous civilian targets were hit causing the disproportionate damage, not only to the urban environment, but also to the natural environment. After the conflict, international agencies that were investigating the consequences identified several “hot spots” in both Serbia and Kosovo where the damage had left a visible trace (The Balkans Task Force, 1999).
Use of Depleted Uranium

Depleted uranium arguably altered the way the war was waged. It became one of the tools used in modern warfare and its toxicity can be lethal for the environment and individuals that come into contact with it. Its effects on the environment have been studied extensively by different governmental institutions and NGOs and despite its negative effect, it would be possible to mitigate it with effective tools. However, this will require strong leadership, legal frameworks and sufficient funding dedicated to the environment and its preservation.

But what exactly is DU? DU represents a toxic substance with small radioactivity levels. This heavy metal is composed mainly of three uranium radioactive isotopes (Table 1) – 234U, 235U and 238U (Đurić–Popović, 2012). It is a result of the enrichment process of natural uranium. During this process, the radioactivity levels decrease for about 40% (WHO, 2001). Scientists estimate that while this by-product of uranium is recognized as a poisonous metal, its radiation is quite low (WHO, 2001). The first production of DU dates back to the beginnings of WWII in the United States, at the same time when nuclear programs were conceived. After that it has been used in different conflicts and there was a significant increase in its presence in militaries from the 1980s onwards. The most notable cases are the Gulf war and the Kosovo conflict that led to an array of research on the side-effects of DU being carried out.

Table 1. Natural uranium isotopes

<table>
<thead>
<tr>
<th>Isotopes</th>
<th>Relative Abundance by Weight</th>
<th>Half Life (Years)</th>
<th>Specific Activity (Bq mg⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>238U</td>
<td>99.28%</td>
<td>4 510 000 000</td>
<td>12.4</td>
</tr>
<tr>
<td>235U</td>
<td>0.72%</td>
<td>710 000 000</td>
<td>80</td>
</tr>
<tr>
<td>234U</td>
<td>0.0057%</td>
<td>247 000</td>
<td>231 000</td>
</tr>
</tbody>
</table>

Source: IAEA (2017)

Although this metal is known for its use in warfare, there are numerous ways in which DU can be used in peaceful times as well. It can be used in hospitals to shield the medical equipment used for radiation (e.g. X-rays) or as counterweights in planes and missiles (Craft et al., 2004). On the other hand, its military usage has been adopted because of the metal’s characteristics. DU is an extremely dense metal, thus armours, bullet shells and missiles are tipped with it. Non-DU munition cannot defend itself against these arms. It was found that DU weaponry can penetrate even bunkers, aside from other conventional weapons thanks to its kinetic energy. The main characteristic when used in military purposes is its pyrophoric nature. This means
that on impact it does not produce any explosion, but rather turns into small particles, of size between 0.5–5 microns, that can be inhaled if in the immediate surrounding areas. Only part of that is soluble, hence it can stay in lungs over longer period and cause respiratory problems (Mishima et al., 1985). Some part of insoluble particles the body naturally excretes in few days, but this largely depends on the composition and toxicity level of the inhaled material. Some of the notable diseases linked with DU are kidney failure and lung cancer. Research has shown that it is highly unlikely that it would result in causing leukaemia (Foley, 2001). Experts also say that DU poses low risks if it is outside of the organism and normally does not penetrate through skin cells (Đurić–Popović, 2012). These claims are still in the centre of ongoing debates and there are research centres that have published works on the negative effects of DU and pointed out the importance of not underestimating the chemical composition and toxicity of this metal (International Action Center, 1999). Considering its environmental impact, aerosol particles can stay in the air over long time and can easily be moved to other parts of the territory by wind streams. DU contained in water depends on its solubility, while once it is stored in soil it stays there and it does not extinguish until it is physically removed (U.S. Army Chemical School, 1995). It might be important to note that natural uranium is generally present in nature and small amounts of it are not posing any threat to animals nor people.

DU only attracted the attention of the global community after its extensive use in the Gulf war. Estimations collected from different resources and direct research data collected on the spot are that around 320 tons of DU were fired during that war (Bertell, 1999). Many are now linking the usage of it to the “Gulf war syndrome”. Thousands of Veterans have reported a series of chronic diseases after coming back from the Gulf bay. Nevertheless, the IAEA conducted research on the effects of DU on humans and the environment and concluded that whilst DU is potentially toxic and that exposure to it could cause long-term damaging effects on health, there is no conclusive link between cancers and DU (IAEA 2017).

**Military Action – Effects and Results**

The NATO intervention lasted in total for 78 days in the spring of 1999. Most of the combat was through aerial attacks, but some land attacks took place as well. During the 78-day period, there were more than 25,000 flights over the territory of former Yugoslavia and more than 17,000 attacks were executed (REC, 1999). The goal was to stop the atrocities and deter the Serbian army from engaging in combats in Kosovo. While on the paper the actions of NATO seemed legitimate, the reality told a different story. The intervention methods were
questionable, and their effects raised alarm across the globe. Images of toxic materials being released into the water and soil and thick clouds above oil refineries that were hit in Belgrade and Pančevo were devastating. While they were justified through the principle of proportionality and military necessity, it was clear that the “humanitarian” character of the intervention was not a priority. Other than visible immediate consequences for the population, the wider audience was concerned with the possible long-term environmental damage that could be felt in the region as well. NATO, however, claimed that it used highly sophisticated weapons and chose only targets that were evaluated as critical in assisting Serbian military (The Balkans Task Force, 1999).

International investigation teams that evaluated the impact of the bombing concluded that there was no significant contamination of the general soil, but they found several concentrated “hot spots” with a higher degree of DU on the territory of Serbia, Kosovo and Montenegro (UNEP, 2002). The effects are visible in soil, water and air and it also had an impact on biodiversity in Serbia. The most important results will be briefly presented here.

One of the major contamination areas was the city of Pančevo, which is approximately 15km from Belgrade. The city is host to the industrial complex composed of an Oil refinery (NIS Oil Refinery), a Petrochemical plant (HIP Petrohemija) and a Factory that is producing nitrogen fertilizers (HIP Azotara). It is needless to say that any damage can cause leakage of hazardous material on an unprecedented scale. It is worth mentioning that civilians live close to the industrial part of the city and they had to be evacuated during the conflict. Aerial attacks hit this industrial complex and a series of substances (Table 2) such as mercury, ammonia, vinyl chloride monomer (VCM) and 1,2-dichlorethane ended up in the soil and underground waters contaminating eventually the Danube river (REC 1999). All of these are lethal for the terrestrial and aquatic environment and can also affect humans by causing birth defects, genetic mutations and are seen as carcinogenic. The Danube river, on which Pančevo lies, was immediately contaminated and while there were efforts to prevent the spread of the toxic materials, it is not clear how effective the response was (REC, 1999). There were also findings of a high concentration of 1,2-dichlorethane in drinking water that significantly exceeded normal levels of 5μg per litre (Robson, 2002). Similar destiny had the oil refinery in Novi Sad, capital of the autonomous region of Vojvodina, which leaked petroleum products in the Danube (REC, 1999). Another issue is the release of pollutants caused by the explosions, like hydrochloric acid fumes, nitrogen and sulphur compounds (Robson, 2002). All these chemicals may cause acid rains in the future and further endanger the biodiversity in the area.
Kragujevac, a city in central Serbia, with a population of about 150,000 people was also attacked several times by NATO forces. This city is generally famous for the car factory “Zastava”. It is one of the main sources of income for many locals and aside from cars it also produces heating for one part of the city (UNEP, 2002). The factory was hit several times and most of the infrastructure was destroyed (i.e. the assembly line, power station, paint stationary), while the production was stopped (Robson, 2002). The strikes ended up causing pollutants from the factory, namely transformer oil – polychlorinated biphenyls (PCB), to reach the soil and water (The Balkans Task Force, 1999). PCB has carcinogenic characteristics and can be lethal for humans. Under the auspices of UNEP, The Balkan Task Force (1999) could confirm, after thorough examinations, that this factory is one of the post-conflict environmental concerns because of the levels of dioxins and PCB contained in the soil and water where the factory was hit.

Table 2. Summary of pollutants released in Pančevo during the bombing of 1999

<table>
<thead>
<tr>
<th>Substance</th>
<th>Location</th>
<th>Amount released (metric tons)</th>
<th>Emission route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia</td>
<td>HIP Azotara</td>
<td>250</td>
<td>Waste channel</td>
</tr>
<tr>
<td>Calcium ammonium nitrate,</td>
<td>HIP Azotara</td>
<td>250</td>
<td>Most burned, some into channel</td>
</tr>
<tr>
<td>phosphates, potassium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>chloride</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude oil</td>
<td>HIP Azotara</td>
<td>150</td>
<td>Most burned, some into channel</td>
</tr>
<tr>
<td>Vinyl chloride</td>
<td>HIP Petrohemija</td>
<td>460</td>
<td>Burned</td>
</tr>
<tr>
<td>1,2-dichloroethane</td>
<td>HIP Petrohemija</td>
<td>2 100</td>
<td>50% to channel, 50% to soil</td>
</tr>
<tr>
<td>Mercury</td>
<td>HIP Petrohemija</td>
<td>8</td>
<td>7.8 metric tons to soil, rest to water</td>
</tr>
<tr>
<td>Sodium hydroxyde</td>
<td>HIP Petrohemija</td>
<td>100</td>
<td>Soil and waste channel</td>
</tr>
<tr>
<td>Ethyl-, propylene</td>
<td>HIP Petrohemija</td>
<td>1 900</td>
<td>Intentionally burned</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>HIP Petrohemija</td>
<td>130</td>
<td>Soil and waste channel</td>
</tr>
<tr>
<td>Crude oil and derivatives</td>
<td>NIS Oil refinery</td>
<td>85 000</td>
<td>80 000 metric tons burned, rest spilled onto soil</td>
</tr>
</tbody>
</table>


The city of Bor, near the border with Bulgaria, contains a copper mine and an important oil depot. During the intervention, the mine was struck and damaged. This potentially could have released sulphur dioxide gas. The effects of this might spread to the neighbouring country depending on the wind streams. Hence, the plausible environmental problem becomes transnational.
All this identified damage was a consequence of using conventional weapons and by choosing strategic targets in order to disable the enemy. Aside from these, hundreds of smart bombs and missiles tipped with DU were launched. As mentioned beforehand, DU at the time of the hit turns into tiny dust particles and can be easily moved through air exposing to danger anyone who is close to the targeted area. UNEP (2002) found the presence of DU in all areas they identified as contaminated, but they claim that the radioactivity levels in air, water and soil are quite low and that they do not pose health or significant environmental threats. Hence, according to the research, bullets and armours tipped with DU used in NATO bombing in 1999 did not leave any significant traceable effect. Despite these results, different research showed that there has been a notable increase in the number of people with cancer since 1999 (Rowland, 2001). Starting from this year, Serbian government plans to conduct research that would possibly reveal the long-term effects of the NATO bombing as previously no such efforts were made.

Conclusion

The NATO operation Allied Force, though humanitarian in nature, was an extremely controversial move that went against international law and breached treaties regulating warfare. The strategic targeting of chemical and oil plants proved to be disastrous for the local population and the environment. The effects can still be seen in the cities that are industrial centres, especially regarding air pollution, and the contamination of drinking water and soil. The massive use of DU, despite showing low radioactivity levels shortly after the conflict, might still be present in Serbia and given the potential for a high level of malignant diseases, more conclusive researches should be conducted.

As for now, the Republic of Serbia has a long way to go in outlining and implementing plans that would work on ecological recovery and re-establishment of natural harmony. There is also a need to raise awareness on ecological needs of the country and reinforce institutional networks that would deal with issues concerning environment and challenges that come with it. These are all crucial in the development of human society because the environment is a common good that needs to be preserved in both times of peace and war.
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Migration Issue from and into Central and Eastern Europe

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Abstract

Migration from Central and Eastern Europe is seen as a threat to quality of life and general welfare by the western authorities. Central and Eastern European authorities thought the same about migrants into their countries and still do so even today (The Economist 2016). People think of it as a plague on their society. Western Europe has plenty of migrants form the East, and the East has plenty of migrants from post-soviet countries. People are just seeking better lives. More and more people are seeking asylum from war or for political reasons in East European countries, because it is cheaper to live there, The Telegraph stated that 4 out of 6 the cheapest cities to live in Europe are in the Central and Eastern Europe (The Telegraph 2018). The main reason of researching this topic is to understand the premises of the present the cycle of migration within the borders of European continent, a migration which is oriented by a vector from East to West. Why did 1.93 million Polish people migrated to Germany, but not vice versa (United Nations 2015)?

Keywords: migration, Central and Eastern Europe, labour shortage, general well being

Introduction

Migration is a topic which influences millions of people each year and is a prominent feature of the world. It increases ethnic and racial diversity throughout the world and facilitates the forming of a coherent and a cohesive society (Dion, 2009). Human migration is a geographical process, which involves the movement of people from one place to another (White, 2015). In Central and Eastern European countries, it represents a huge problem. The outflow of the people from these countries is much bigger than the inflow. From the 95.9 million citizens of CEE countries, 3.47 million are migrants who came into that region, but 12.53 million people emigrated from these countries (United Nations, 2016). The main reason for carrying out this research is to make the reader understand and to explain why people migrate, who migrates,

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what premises they need to migrate and where do people migrate to. Why? Who? What? Where? These are the main question my research is based on.

The importance of the research is to tackle the concept of migration and to show real impact of the movement of people through European. It is very hard to analyse the data as a whole, notwithstanding, each country has its own reasoning on migration and its own view regarding the concept, according to international standards we may conclude that the genesis of the problem are the same needs and reasons, which will be shown and described detailed further on in the research. It is important to know the reason why big masses of people move from one country to another, to understand why so many families get separated because of migration and why do some countries invite migration and use it for the purpose of development, whereas other countries seem to have a huge economic decline.

People migrate from their countries for a variety of reasons – including fleeing from war or persecution, better economic opportunities, political conflicts and labour surpluses (Jandt, 2012). Specifically, in CEE countries, we may conclude that people migrate mainly for better economic opportunities and labour surpluses. The main indicator of the wealth of a population, GDP per capita, can show the situation at the moment. Another key indicator is the rate of unemployment, as it shows the wellbeing of the population as a whole.

**Main Reasons and Consequences of Migration**

“Migration is as natural as breathing, eating, or sleeping. It is a part of life, a part of nature. So, we have to find a way of establishing a proper kind of scenario for modern migration to exist. And when I say ‘we’, I mean the world. We need to find ways of making that migration not forced” – Gael Garcia Bernal. Connecting to the topic of the research, migration is a normal movement of people to better conditions and better life, however, it does not always result in a better life. In many cases, people just flee away from war, genocide, political depression or anything that may put in danger their life.

We can categorize all the factors of people’s migration into two: Pull Factors and Push Factors. Push factors are internal factors of the country which motivate people to leave, whereas pull factors are external factors such as special facilities in the destination country. Push factors are poor infrastructure, lack of good medical care, high levels of unemployment, few educational opportunities and bad educational system, high crime rates and poor standards of living. Push factors are associated with the worst things the country has, whereas pull factors are the best things another country can offer. Pull factors such as better infrastructure, better healthcare,
better job and educational opportunities, higher standards of living, and mainly stability and general wellbeing attract people (Ramos 2017).

According to data of the International Migration Wallchart for 2015th year (United Nations 2015), the most beloved country by CEE migrants is Germany, so I will take that country as a single example, in order not to overload the research with numbers. Germany has 193,013 Polish citizens, 590,189 Romanian Citizens and 543,527 Czech citizens, what means that more than 2 million people in Germany are migrants from these three countries (United Nations, 2015). Germany has such a big stock of migrants due to general situation there. Germany is the biggest economy in Europe and has the lowest unemployment rate, which was 4.4% in January 2016, and was constantly decreasing (Eurostat, 2016), so people see great potential in heading to Germany be- cause they are sure that they are going to have a well-paid job and growing opportunities. People who leave CEE countries are young, well trained and two thirds of them are single. In Hungary alone, two thirds of people who left the country were under 40 years old, and that is a huge loss to the population because they are the people who are able to work, to enrich the country and who can have families and increase the demography of the country. The migration from CEE countries is a great loss in the demographical, economic and cultural sectors (Glorius, 2018).

Only one in five migrants return to their country of origin, and that is a terrible fact (Coles, 2006). People not returning to their home countries is a serious issue for the economy, because according to the previous statement, one of five people who is apt to work, who have necessary skills to provide high quality services or just who can pay taxes and increase the economy of his own country, does not come back and do not do it. As Max Frisch stated “We asked for workers. We got people instead”, and that is the reality, that the workers who long time ago came, became a part of the society and integrated so well that they do no need to go back home. Whereas, these four people who come back to their home countries are more productive, because they are used to that in the countries where they worked, are more time efficient and these two key qualities boost economy of their homeland. Nevertheless, people who return home have bigger expectancies about health care, social security and economy in general, a thing what boosts governmental structures to work better and to provide better lives to the citizens.

To see the reasons of migration in numbers, we can compare the source and destination countries just by two criteria, GDP per capita and Unemployment Rate.
GDP per capita is the best measurement of country’s wellbeing because it is the division of country’s gross domestic product by its total population, so we can see the real productivity of the country. GDP per capita in destination countries is usually much higher than in source country, for example in Germany, GDP per capita in 2016 was 41,936 USD, whereas in Hungary it was 12,664 USD, Poland – 12,372 USD and Romania – 9,474 USD. Therefore, the difference is huge between these indicators. Destination country has higher GDP per capita by three or even four times than the source country (World Bank 2018).

Unemployment rate is the measurement of the prevalence of unemployed people in a country. In source countries, general unemployment rate is relatively higher than in destination countries. In Hungary, the unemployment rate in January 2016 was 5.9%, Poland – 6.8%, Romania – 6.4%, whereas in Germany it was 4.4% and when you compare the number of population which was unemployed on that time in these state, there is a huge gap between them (Eurostat, 2018). Although general unemployment rate may seem not so high, we should focus more on youth unemployment rate, because the majority of migrants from and into CEE countries are young, but youths play an essential role in the society as taxpayers, developers of the society and promoters of progress. Romania had 16.8% of youth unemployed in January 2018, Poland – 14.1%, Hungary – 10.7%, whereas Germany had 6.6%, the difference can be seen without making calculations (Statista 2018). All in all youths if do not find a good opportunity to work in their home countries, they migrate without any constraints. Even if the unemployment rate is tending to lower in the last years, due to the emigration of high skilled labour, there are reported labour shortages in CEE countries.

In Baltic Countries (Estonia, Latvia and Lithuania), migrants are mainly from Russia. There are 143,677 Russian migrants in Estonia, 137,224 Russians in Latvia and 59,466 in Lithuania. Poland and Czech Republic are more popular for Ukrainian citizens. There are 206,518 Ukrainians in Poland and 95,474 Ukrainians in Czech Republic. Hungary is most preferred by Romanians, there are 204,603 Romanians in Hungary, whereas Romania is most preferred by Moldovans, there are 81,856 Moldovans who are currently residing in Romania. Slovakia is beloved by Czech Republic citizens; there are 89,304 Czechs in Slovakia. Croatia has 404,874 Bosnia and Herzegovina residents (International Organisation for Migration, 2015).

As you can see in the numbers above, nationals of poorer states migrate into Central and Eastern European Countries, whereas people from CEE countries migrate to richer countries such as Germany and United Kingdom. There is a semi cycle within the borders of European continent, that shows us that people from developing countries tend to migrate to more developed
countries, but people from more developed countries tend to migrate to the most developed countries, and this semi cycle is natural. Due to tries of governments to uniformize the wages and the well-being of the societies within the European Union, migration within those countries tends to be substituted by immigration from third countries. The rise of number of employees from outside the EU shows the attractiveness of European Union labour markets despite high unemployment in some countries and economic stagnation (Matuszczyk, 2004).

People migrate to or within CEE countries not only because of financial reasoning. People migrate due to historical reasons, if their ancestors are from that countries, or because of the language, if the language in their home country is similar to the language spoken in the destination country, they will migrate; people migrate as well if there is a powerful diaspora in the country. Generally, there is an assessment of the ability to integrate foreigners in CEE countries made by Central and Eastern European Development Institute (Matuszczyk, 2004). There are all the criteria about which people think when they migrate and the indices, which are based on.

The biggest consequence of the migration is the loss of people who potentially can increase the economy, demography and general state in the country. As previously was stated, mainly are leaving young, single and high skilled people, the people who should run the economy and build a future to the country. Another consequence with is connected to the previous one is the brain drain. Doctors, engineers, IT people are leaving country for getting a lower position but for more money and better life conditions. This loss of people creates labour shortages. Many corporations have difficulties with hiring people in a number of CEE countries. In Central and Eastern European countries, average proportion is 40%, whereas in some CEE countries it is much higher. 72% of companies in Romania have labour shortages, 62 % in Bulgaria, 57% in Hungary, 45% in Poland and 44% in Slovakia (Fruchter–Sielewicz, 2017).

**Conclusion**

This research has an informative contribution on a very popular and harmful issue through the CEE countries, migration. Migration has a high number of good effects for source countries such as new skills brought by retuning migrants, money sent home which are reinvested in the economy, whereas the number of bad effects is much higher and is much worse for source countries such as disproportionate numbers of females left behind, low progress of economy due to lack of labour force and brain drain.
By knowing all the patterns of migration included in this research people would think one more time about leaving or staying in their home country, they would even help more people to stay in their homeland and develop their country’s economy. Countries need their people, because people are the mechanism that runs a country’s economy, a mechanism what develops every structure of the country and finally a mechanism what should be at home and make his home better.

References


An Alternative Approach to Anti-Corruption Policies in the Republic of Moldova: The Case Study of Estonian E-Governance

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Abstract

In 2014, the disappearance of 2.9 billion dollars from the Moldovan banks emphasized the existence of a significant obstacle that has slowed down the development of the republic since 1991. Similar to an epidemic, corruption has affected the economy’s growth, causing unfavourable economic conditions for local and foreign investment. Nowadays in Moldova, corruption is considered a significant issue that affects numerous spheres of the Sustainable Development dimensions. The following research done in 2018 analyses the situation of corruption that has reached the phase of state capture. As a solution to this emerging issue, the paper suggests an e-governance system as a successful initiative to combat corruption on macro-administrative levels and to increase the level of trust in public administration. The case study of Estonia shows how a secure and modern e-governance system decreases the corruption rate due to its elevated level of transparency, the rising trust in governmental institutions and economic boom. The main question is if Moldova requires a new e-administration and if the present conditions would encourage its usage by society.

Keywords: corruption, e-administration, E-Governance system, E-Government

Introduction

The significant social, economic and cultural effects of corruption have determined many countries to find the best-suited tools to neutralize it. According to the SDGs of the United Nations, corruption is an essential impediment that causes economic stagnation and impedes the proper evolution of a country. In the case of the Republic of Moldova, a former Soviet state, the problem has its roots in the previous economic system and has already a profound effect on the overall economic performance. During the last decade, these emerging problems have emphasized the necessity of a change in the governmental system.

To begin with, this paper is centred on the current state of corruption within Moldova. Multiple events that include thefts and frauds led the author to search for a new approach to solving the
corruption phenomenon. In the following chapters, the author tries to demonstrate the necessity of the neutralization of this issue in the nearest future.

Currently, Moldova is confronting with state capture, as the politicians manipulate the process of the decision-making. Unfortunately, the present policies and digital platforms are ineffective. Subsequently, the author’s main aim is to find an “out of the box” approach to an anti-corruption policy. The main research question of this paper intends to answer is whether an e-governance system similar to the Estonian model can solve the corruption issue in Moldova.

**Research Methodology**

The research introduces the current state of corruption in Moldova and proposes a solution to it, using a case study - the Estonian E-Governance system. By comparing the parallel evolution of the two post-Soviet republics, the author emphasizes the effectiveness of the platform in an EU member state, i.e. Estonia. It highlights the current structure of the e-governance system and its main features. It also emphasizes the difference in e-governance systems and e-governments.

The next step consists of the study of the social conditions needed to implement an E-governance in Moldova. In order to complete the missing information, the author conducted a survey on 71 respondents, all coming from Moldova 47.4% of the respondents are 20 - 25 years old, 36.6% are 16 - 20 years old, 12% are 25 - 45 years old and the remaining number 4% of respondents are 45+ years old. The survey is based on the social aspects of the problem: the acuteness of corruption in Moldova according to the general opinion, the trust in governmental institutions. Due to physical limitations, the author decided to use social media as a channel of communication for the questionnaire. To round up, the paper is eager to present a realistic view of the anti-corruption policies and a possible solution for their implementation based on the above-mentioned case study.

**The Current State of Corruption in the Republic of Moldova**

Starting from 1991, the Republic of Moldova has got through multiple stages of development in the process of building the new, capitalist state. After the collapse of the Soviet Union, Moldova has entered the international arena with little democratic experience that has led subsequently to major problems: such as corruption, lack of transparency and accountability of public finances and institutions.
It was expected that these questions would have been handled in the following decade and Moldova would become an EU member. Unfortunately, in the Moldovan media talk, in the aftermath of the 2015 Riga Eastern Partnership Summit, it was stated that Moldova is “a country battered by corruption, high inflation, and unemployment” (Onorii, 2016), notwithstanding the existent process of socialization and integration with the EU. Still, after 26 years of independence, the country is combating these major issues caused by the Soviet remains.

Currently, Moldova is positioned on the 122nd place out of 180 countries according to Transparency International (2017). The Global Corruption Barometer categorized just one field out of 13 as being “clean” (the scale from 0-“very corrupt” to 100 “very clean”) (Transparency International, 2013). Also, Transparency International - Moldova (2017) differentiates several stages that Moldova has undergone concerning corruption. The explanations of each stage are given by appropriate sources.

- Endemic corruption - systematic corruption, met in both private and public structures (Haller & Shore, 2005);
- The politicization of the fight against corruption;
- State capture - a political system where the private interest of the officials influences the macroevolution of the state and the process of decision-making.

Unfortunately, Moldova is currently under state capture, a fact proven by the recent events: the bank fraud resulting in the disappearance of 2.9 billion dollars (Kroll, 2017), followed by the attempt to legalize the money and the property that was accumulated after the scandal in 2016 (Transparency International-Moldova, 2017). In the period 2012–2014, the acquisitions and transfers were made under the supervision of the officials and members of the parliament. These suspicious transactions were conducted through three banks (Banca de Economii, Unibank, and Banca Sociala). As matter of fact, those three banks had tremendous importance in the security system and pension fund system of the state - an evidence that definitely calls into question once again “the integrity of their balance sheets“ (World Bank Group, 2015).

Regarding the acuteness of the problem, the author decided to consult the survey’s respondents. According to the research done, the results show a deep concern regarding the dimension of it.
The most important factors causing corruption is the lack of democratic experience and the former Soviet influence. The main feature of all post-communist countries is the presence of corruption, fragile civil societies and a bureaucratic system (Szopiński & Staniewski, 2017). In the case of Moldova - a non-EU member, the society is manipulated by politicians and does not have a strong point of view. This factor leads to the abuse of governmental power, as there is no united, objective opposition that can withstand and monitor the government’s operations. 69% (Transparency International, 2017) of Moldovans consider public officials/civil servants corrupt. According to the author’s survey, the respondents tend also not to rely on the government’s decisions (see Figure 2.).

In addition, Carasciuc (2017) points out that corruption has created an “unofficial” tax burden on the population, and it affects the most vulnerable spheres. The poor are the first to be affected by corruption institutions, causing an enormous gap between the lower social classes and the upper ones. Returning to the survey, besides the negative overview, 53 people out of 71 consider that there are existent solutions to corruption in Moldova. Most of them consider that the best way to approach corruption is to follow other countries’ examples or to apply a more severe
punishment to the corruption cases. Therefore, in order to solve it, the author presents the case study of the Estonian E-Governance.

**Case study: Estonian E-Governance**

**Estonia - the Internet Titan. The Evolution of E-Governance.**

Nowadays, a vital right for the existence of a healthy civil community is the right of access to public information. This leads to a diminishing rate of corruption and an increasing level of trust. According to this principle, the government of the Estonian Republic has decided to create an electronic platform that could exponentially increase the day-to-day operations of the government after the break-up of the Soviet Union. According to Tambur (2017), the republic decided after 1991 to focus its efforts mostly on the possible integration into the European Union. Besides the fact that the odds were not always positive, Estonia was the first former Soviet republic to initiate membership negotiations with the EU.

Unlike Moldova or other former communist republics, Estonia has overcome the obstacle and broke off from the old administrative techniques. Despite the former Soviet influence, today Estonia has the best CPI (Corruption Perception Index) score of all European Eastern members (Frijters, 2016). In their process of integration into the EU, before 2004 Estonia followed all the requirements of the union to correspond with the Copenhagen criteria. According to Frijters (2016), Estonia remains the only state that continued the process of improving its control over corruption after receiving the full membership of the EU.

Nowadays, according to the World Forum Economics (Schwab, 2017), the country is positioned on the 29th place according to the competitiveness index. It is considered an innovation driven society. Corruption is not a stringent problem of the community, thus showing a relatively good situation concerning the transparency and accountability of the state (Schwab, 2017). After the fall of the Soviet Union, Estonia decided to dissociate from the inefficient Soviet bureaucracy by initiating a sequence of radical changes and by introducing the concept of e-governance.

With the country referred usually as an “Internet Titan”, the Estonian population is considered the most mature digital society, with one of the highest digital literacy rates. According to the latest data collection of the Estonian E-Governance, 30% of the citizens used e-voting at the last electoral cycle, which is an enormous achievement for this century (Alvarez, R., Hall, T., & Trechsel, A., 2009 E-Estonia, 2018). The platform “https://E-Estonia.com” is considered one of the fewest electronic platforms in the world with 99% of its services available 24/7 (E-Estonia, 2018; European Commission, 2014).
When Estonia started to build the e-governance system in 1997, there were no previous digital data collected about the Estonian community (Estonia, 2018). Thus, the investment into these technological solutions and the evolution of the internet was considered a risky decision. The next steps that followed the formation of e-governance in Estonia were the e-Tax in 2000, X-Road in 2001, Digital ID in 2001, 2005- I-Voting and 2007 Public Safety. The blockchain and e-Health structure was implemented in 2008. The most recent one is e-Residence in 2014 (Estonia, 2018). Now, the specialized portal “osale.ee” has become the voice of the population as the platform links together the reforms proposals and the general audience. Thus, the citizens can participate online in the process of decision-making, can express their opinion, and thus exercise their rights (United Nations, 2016).

The enumerated possibilities can prove the sustainability of the e-governance platform. By eliminating the middlemen and the vague, uncertain factors, Estonia has increased the level of transparency of its governance. This digital platform improved the existent conditions, thus creating a direct link between the upper level political class, the administrative bodies and the society.

The Comparison of Estonia and Moldova

In Table 1, we can observe the evolution of the two states: Estonia and Moldova. Both of them share similarities concerning their historical background and the ethnic composition of the society.

Table 1. Corruption perceptions index- 2000-2017. Indications: (a) From 2012, the index ranges from 0 to 100. Before 2012, the scale is from 1 to 10.

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>5.7</td>
<td>5.6</td>
<td>6.0</td>
<td>6.7</td>
<td>6.6</td>
<td>6.5</td>
<td>64</td>
<td>69</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>Moldova</td>
<td>2.6</td>
<td>2.1</td>
<td>2.3</td>
<td>3.2</td>
<td>2.9</td>
<td>2.9</td>
<td>36</td>
<td>35</td>
<td>30</td>
<td>31</td>
</tr>
</tbody>
</table>

Source: Transparency International, 2017

Nonetheless, the main difference is that Estonia is a member of the EU from 2004 while Moldova is still negotiating its further integration with the Union since the adoption of the Association Agreement in 2014. In both communities, a significant share of the population is Russian. The countries are both small in physical dimensions and have a limited amount of resources, thus inferring the need of the country to depend on external imports of gas and primary resources. Both states have previously entered on the international arena with little
experience concerning capitalism and democracy and have an accentuated tendency towards bureaucracy.

As it is observed in Table 1, Estonia has undergone major changes since 2000, thus resulting in increasing CPI measurements and neutralizing corruption. The accession to the EU further benefitted the country. Unfortunately, Moldova did not undergo significant changes regarding the present situation of corruption. Notwithstanding the numerous grants offered by the EU, Moldova is still struggling. A significant factor that must be taken into consideration is the present progress of the Moldovan society and the actual existent structures: the e-government.

In comparison with the Moldovan website, the Estonian one offers more information not only to the ordinary citizens but also to its foreign readers. There is a feedback section and a subscription section that would allow anyone to keep track of the current changes in the republic. The platform offers a wide range of information and detailed statistics in English. The population does not enter in physical contact with any officials, yet they share their opinion, pay their bills and their taxes, deliver their financial statements and inform themselves about the on-going political changes.

**The Present Conditions and the Possibility of Implementation**

According to Gorea (2015, 2017), the application of this digital system can be done after the following factors have been taken into consideration: the level of preparation of the population, the implication of the citizens and the level of willingness, the access to internet and networks, the capacity of the networks and of the database, the number of people capable of administrating the system.

Today, Moldova is ranked the 3rd out of 154 countries concerning the speed of Internet within the country. Thus, the physical parameters of the network may contribute to the implementation of the e-governance system (International Telecommunication Union, 2017). In addition, the latest statistics show an increasing trend of usage of mobile data, ranging from 4,627.9 million minutes in 2011 and rising to 6,208.3 million minutes in 2016 (Statistica.md, 2018).

Table 2 stresses out the advancing number of mobiles phone users from 2011 to 2016 and the access to Internet in the country. This fact shows that a bigger share of population has started using more their mobiles as a connection tool, thus leading to an increasing usage of Internet facilities. The expanding number of users permits the governance to efficiently implement the e-administration, as a bigger majority of the population will be engaged in the process.
Table 2. Access to Internet - in thousands of units 2014-2016

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed access</td>
<td>509.2</td>
<td>534.4</td>
<td>557.4</td>
</tr>
<tr>
<td>Mobile access</td>
<td>1,688.4</td>
<td>1,760.1</td>
<td>1,919.4</td>
</tr>
<tr>
<td>Broadband access</td>
<td>1,216.1</td>
<td>1,875.5</td>
<td>2,129.0</td>
</tr>
</tbody>
</table>

Source: (Statistica.md-2018)

Summing up, the present physical conditions of the internet, the facilities provided by many internet companies such as StarNet, Moldtelecom, Orange Moldova, Moldcell, and Sun Communication can provide safe connections and offer to both the society and government the opportunity to create an e-governance system accessible to every citizen.

Another significant factor that must be taken into consideration is the present progress of the Moldovan society and the existent structures that contribute to e-transformation. The electronic platform egov.md or “E-Government Centre" Public Institution is actually “a non-profit organization pursuing public benefit” (Egov.md, 2018).

Therefore, the e-government aims to lay the foundations of the future electronic platform and to inform the population about the process of e-transformation. Created in 2011, the platform should have increased the level of transparency, but as we can see from Table 1, Moldova has suffered many crises and has undergone a spectacular scandal related to the bank’s fraud since then. Nowadays, it remains with approximately the same CPI. The following observation made by the author proves the inefficiency of the site: 1. The latest news was published on 18th of January. 2. The previous article appeared on 22nd of September 2017. These facts will eventually diminish the level of trust in the governmental decisions.

After analysing the collected data, the author observed that the respondents know about the existence of the platform, but they do not use it. Therefore, we can question the efficiency of the site. When the primary aim of the platform was to interact with the community, especially with the young generation, nowadays only around 60 % know about e-gov but just 17% use it.

**Conclusion and Recommendations**

In conclusion, a change in the governmental approach towards corruption and the implementation of an external system monitored by other international authorities might help Moldova. The results of the surveys highlighted the necessity of the change of the current
approach to anti-corruption policies. Thus, the author decided to investigate a similar country with a common historical background that struggled with bureaucratic corruption but managed to neutralize its effects. By exploring the past and the present state of the Estonian government, the author came to an understanding that proves the aforementioned hypothesis.

By observing the trend of development of the Estonian state, the author compares it with Moldova’s evolution and observes that Estonia managed to diminish its corruption rate considerably in the past 20 years. As it was previously stated, there is a strong correlation between e-governance and corruption policies. In addition, both countries benefited from financial and technical support to combat corruption issues from the European authorities. The current speed of the internet, the internet providers, the number of access points and computers in Moldova indicated the possibility of the creation of the platform.

To conclude, the main goals of the paper were reached. The e-governance approach to anti-corruption policies offered by the Estonian example can provide to Moldova a new way to consolidate its governance and its struggling economy.

References


Smoking Habits on the Campus of Budapest Business School – Faculty of International Business and Management

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Abstract

Smoking is a huge problem in the world. Smokers usually start smoking when they start high school or university. We can categorize smokers into different types, that will be discussed later. The topic is related to environmental protection as well. Many questions came up into my mind. Is there a shortage of ashtrays at BBS – FIMB? Are people too lazy to throw their stubs into the trash can? Can the stubs be recycled? In my survey approximately 40 FIMB students have been asked to find out whether they are social or addicted smokers. How many cigarettes do they smoke a day? Would they make an effort to throw their cigarettes into the trash can?

Keywords: addiction, smoking, habit, pollution, students

Introduction

The present study is based on my own experience. The idea came to my mind when once I went out from the school and the ground was full of cigarette waste. However, every entrance has at least 2 trash cans. It is important to warn the young about the unhealthy side effects of smoking. In contrast to this fact, there are many people smoking in Hungary, which is a disaster for the human immune system, as inhaling tobacco smoke increases the chance of cancer and other illnesses. In addition, waste and smoke pollute the environment. Moreover, it can even cause mental addiction as well. We can differentiate three types of smokers: social smokers, addicted smokers and passive smokers; however, the non-smokers were not asked, because they do not have any experience of smoking. As a student at Budapest Business School – Faculty of International Management and Business (BBS-FIMB), I can see many people smoking in the break; furthermore, instead of putting the cigarettes stub into the trash can, they just throw it away. However, sometimes the ashtrays are full of cigarettes; thus, there is nowhere to put the waste. After a long day, all I can see is that the ground outside the school is full of stubs. I was

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4 This research paper was published in Prosperitas, 2018. 5(4) p. 80-91. Budapest, Budapest Business School
wondering if there were not enough ashtrays, trash cans, or just people are too lazy not to pollute their environment. Cigarette waste can be recycled in several ways by organizations that specialize in recycling. Smoking students were asked in a questionnaire, based on the mentioned problems. As far as I am concerned, these are the issues that are the most common among the young at BBS-FIMB.

**Methodology**

The main method was the questionnaire. A survey was the best way to provide enough information about the smoking habits of students, which is part of their everyday life. However, the questionnaire does not contain information about the effects, nor the recycling, so data were provided from other sources. There are some websites that offer to recycle through the internet. You can send your waste by postal services. Sites also give advice how it can be recycled. Studies have been conducted to show why people should stop smoking.

**Method: Design of the Survey**

The survey consists of 10 questions. There are 8 questions giving information about the smoking habits of the students at BBS-FIMB. There is 1 question about students’ opinion whether the school has enough ashtrays and 1 question whether they knew that cigarette butts can be recycled.

**Method: Participants of the Survey**

The questionnaire was filled out by 37 people. The participants are the students of BBS-FIMB aged between 18 and 25. Their average age is 21.68 years. However, the main ages are 18 and 19. They are freshman of the university. The participants are both males and females. None of the participants has studied at any other university, so they are unable to compare the school’s environment to other universities. All of the participants’ answers were handled anonymously to make sure that their answers were given honestly.

**Method: Procedure of the Survey**

Only smokers participated in the survey. The questions were given to students on the campus of BBS-FIMB, and were posted on the school’s Facebook page, where the members were able to access the questionnaire, and smoker students from the university were asked personally to fill out the questionnaire. In order to be able to answer to the Question III the person has to be “addicted smoker” to question II. 21 students said that they are addicted smokers, however, 30 people answered to the 3rd question, so 9 people did not check the requirement.
Method: The Number of Ashtrays and Dustbins and Their Analysis.

The ashtrays and dustbins were counted in order to get information whether the school has a sufficient number of trash cans. BBS-FIMB has 12 entrances. In building K, there are 4 entrances. One of them is the main entrance and one is closed. Building E has 3 entrances and one is closed. Building D has only 5 entrances and 3 are closed and 1 is only for the disabled.

Method: Using Foreign Sources

In order to gain clear information about the effects and about recycling programs, several sources have to be used.

Results

Survey: Question 1

*Figure 1. Age of the participants.*

The 37 participants are aged between 19 and 24. The average age is 21.68. Most of the participants are at the age of 19 and 20. As you can see on the chart, 11 of them are 19 years old, 14 participants are 20, 5 are 21 years old, 3 are 22 years old and 2-2 participants are 23 and 24 years old.

Source: own compilation.

The 37 participants are aged between 19 and 24. The average age is 21.68. Most of the participants are at the age of 19 and 20. As you can see on the chart, 11 of them are 19 years old, 14 participants are 20, 5 are 21 years old, 3 are 22 years old and 2-2 participants are 23 and 24 years old.
Survey: Question 2

*Figure 2. What kind of smoker are you?*

Based on the answers 15 persons think that they are social smokers, and 21 participants think they are addicted smokers.

Survey: Question 3

*Figure 3. Cigarettes consumed by students a day.*

The requirement to answer this question was to be addicted smoker. In contrast to the previous question, there were only 21 addicted smokers; however, to this question there were 30 responses. Moreover, one response is invalid, because it is connected to “party smoking”. As
each opportunity includes 3 numbers, the average is counted by the middle value of each answers. The average number of cigarettes smoked a day by a student is 8.41 pieces.

**Survey: Question 4**

*Figure 4. Age, when participants started smoking.*

One of the respondents was 12 years old when s/he started to smoke. 7 were 14 years old, 9 were 15 years old, 9 were 16, 8 were 17, 2 were 18, one was 19 when she/he started to smoke. That is an average of 15.68 years.

**Survey: Questions 5–6**

*Figure 5. People who would give up smoking and explanation.*

Source: own compilation.
Question 5 was a multiple-choice question, and 37 answers were given. 22 of the respondents want to give up smoking, but 3 of them are not willing to, and 12 persons are hesitating. To the 6th query, there were only 20 responses. The replies are both different and similar. Two reasons are almost given by everybody; however, several responses are different.

Survey: Question 7

Figure 6. What would you do if there is not a bin/ashtray around you?

Source: own compilation.

37 responses were given by students. Almost half of them, that is, 18 participants gave the answer “depends on the distance” (where the nearest dustbin is). 15 of the respondents would ‘throw the cigarette away’ if they could not find a dustbin. 4 of them would ‘search for a dustbin’.

Survey: Question 8

Figure 7. Distance students are willing to walk in order to throw their cigarettes waste into an ashtray/dustbin.

Source: own compilation.
According to the 37 replies, students would be willing to walk an average of 22.08 metres in order to find an ashtray. The mode is 10 metres.

**Survey: Question 9**

Do you think that BBS-FIMB has enough ashtrays?

[If your answer is no, please explain in one or two sentence(s)]

These are the answers to the question:

- Yes (23)
- No (8)
- No, because I see many stubs on the ground.
- No, there should be more.
- No, lots of students throw the cigarette away because there are no enough ashtrays.
- I guess. Could be a couple more.
- No, I’d suggest we need more as the number of smokers is really high.
- No, do not have enough capacity to bleed them out so they solve this problem with less ashtrays

According to the questionnaire, most of the students think that BBS-FIMB has enough ashtrays. 23 students answered yes to the question “Do you think that BBS-FIMB has enough ashtrays?”, 14 answered no. This means most of the students think that the university has enough ashtrays.

**Survey: Question 10**

*Figure 8. Did you know that cigarettes butts (end) could be recycled?*

*Source: own compilation.*
25 people did not know that there were ways to recycle cigarette butts, although 12 of the respondents knew there are ways to recycle it.

**Number of the Ashtrays in the Campus of BBS-FIMB**

BBS-FIMB has 6 functional entrances. These are the open ones. 6 entrances are usually closed. Building K has 3 functional entrances. One of them is the main entry. Each of the 2 side hallways has 1 ashtray and 1 dustbin; however, the main entrance has only 1 dustbin and 1 ashtray as well. Building E has 2 functional entrances. The “E1” gate has 2 ashtrays and 2 dustbins. The “E2” gate has 2 ashtrays. Between the 2 “E” entrances, there are 3 other dustbins in the park. Building D has only 1 functioning entrance, which has 2 ashtrays and 2 dustbins. On the route, which connects the “E2” entrance to the “D2” (the functioning one), there are 6 dustbins and ashtrays. On the campus of BBS – FIMB there are a total of 27 trash cans and ashtrays.

**Discussion**

Smoking is a huge problem in the world. It is connected to unhealthy living and even to environmental pollution. Smoking kills 7 million people a year. More than 6 millions of those deaths are the result of direct tobacco use, while around 890,000 are the result of non-smokers being exposed to second-hand smoke (WHO 2017). On average, someone who smokes a pack or more a day lives 7 years less than someone who never smoked (Garfinkel 1987). These are key facts. Everybody has to decide whether they want to choose this kind of 'lifestyle’ or not.

In my experience, those who have been smoking for a long time usually seek to give it up when they start to feel the harmful effects of smoking. In the beginning, symptoms are usually heavy-breathing and coughing. Your lungs are “air-exchange organs”. They’re made up of tubes that branch out into small sacs called bronchioles and alveoli where oxygen exchange takes place. Your body takes in the oxygen you breathe and uses it as fuel. When you breathe in, the sacs inflate. When you breathe out, the sacs deflate (American Heart Association 2015) Cigarette smokers have a lower level of lung function than those persons who have never smoked. Smoking reduces the rate of lung growth and even raises the blood pressure. All the participants began smoking during their adolescence, which means that their chances to continue smoking as adults are greater than the usual. They had an average age of 15.68 when they started to smoke. One of them has been smoking since the age of 12. This student is not even a minor yet (Age of 14). Active smoking by young people is associated with significant health problems during childhood and adolescence and with increased risk factors for health problems in
adulthood (Centre for Disease Control and Prevention, 1994). The 37 participants are aged 19–24 with the average age of 21.68. Most of the participants are at the age of 19 and 20. What is clear from the survey is that 15 persons think that they are social smokers, but 21 participants think they are addicted smokers. The differences between social smoking and addicted smoking is that social smokers smoke when they are surrounded by people; thus, they smoke exclusively when they are in school, or when they are going out with friends for a night out, so it is not an everyday habit, that is, they are not dependent on nicotine. Addicted smokers are those who smoke regularly, addicted to nicotine and it is hard for them to quit because it has become an addiction in their everyday life. The average number of cigarettes smoked a day by a student is 8–9 (8.41) threads. As I have already mentioned, if someone smokes an average of 1 pack a day lives 7 years less than normal. “Luckily” cigarettes consumed by the participant is even less than half a pack, so the risk is not so serious. 22 of the participants want to give up smoking, yet 3 of them do not want to stop this bad habit, whereas 13 of them are considering giving it up. The most common reason was that smoking is unhealthy, and it can cause several illnesses. Many answers show that it is an expensive bad habit. No doubt, smoking is an unnecessary want, which is even a waste of money. A pack of cigarette costs about 1,200 HUF, which has 20 threads. Let us suppose a regular BBS – FIMB student smokes 8 cigarettes a day, that is, 40% of a pack of cigarettes. This means that smoking costs HUF 480 a day for smoker students. Some of them are planning to give it up in the future, but it is getting even harder and harder to give it up as time goes by. Those who are willing to live with this addiction think that it is unnecessary to stop it. One of them says “I think everyone has a bad habit. Some people drink every day, and I smoke. It is not as bad as most of the people think”. According to my findings, the campus of BBS – FIMB has enough dustbins and ashtrays for smokers, except the main entrance, which has only 1 dustbin and 1 ashtray. The waste on the ground is caused by the laziness of students, and it cannot be related to the lack of ashtrays. According to the respondents, the average distance they would walk is 22.08 metres, yet 3 responses greatly increases this number because one of them said 50 metres, one of them 100 and one with 200 metres. If I had not counted these answers, it would have been an average of 13.74 metres. That is a difference of 8.34 metres with only 3 responses out of the 37. The mode of the result is 10 metres, that is, 9 students chose that. 21 (56.76%) of the participants would not even walk more than 10 metres to find a trash can for their stubs. As it can be seen in the Question 7, most of the responses (18) say it “depends on the distance” whether they would search for an ashtray, and 15 of them would just throw it away. The answers to Question 9 mainly support my findings: 23 students out of 37 thinks that the school is not in lack of dustbins nor ashtrays. So,
these facts prove that BBS–FIMB has enough ashtrays and dustbins on its campus, only people are too lazy to throw their wastes into a dustbin. This is why we can see so much cigarette waste on the ground. It even effects our environment.

Cigarette waste can be recycled by TerraCycle. TerraCycle is an organization which was established by the Hungarian Tom Szaky in 2011. Participation in the program is completely free, all you have to do is to join the program, and then collect your cigarette waste (extinguished cigarettes, cigarette filters, loose tobacco pouches, outer plastic packaging, inner foil packaging, rolling paper and ash are accepted), ship it to them (which is free as well) an after that they recycle them into compost, plastic, etc. However, currently, it is not available in Hungary. For more information, visit their website for more information (Szaky, 2018).

**Conclusion**

As I have already mentioned, the campus of BBS–FIMB has enough ashtrays, but students are too idle to find a trash can. Cigarette waste cannot be totally stopped; however, it can be reduced by using some methods. By picking it up more frequently, the gardener should collect the waste more often, and by having more separated 'smoking' areas on the campus, where smoker students have more ashtrays and seating opportunities. in order to reduce the littering more sanction should be made against littering. By using pocket ashtrays, students would be able to carry an ashtray with them, which fits in their pockets. These are cheap on AliExpress. Pocket ashtrays are from $1.19 (~HUF 300), after a break they can empty the little gadget. Educating students is essential in giving advice about proper waste disposal. Leaflets should be put on notice boards about proper waste disposal, and warning signs should be used outside the building (Register 2000).

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Environmental Sustainability of Irrigated Agriculture in Dry Areas: Case Study Afghanistan, a Review Article

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Abdul Walid Salik, Szent István University, Hungary

Abstract

Worldwide irrigation enables crops productions in temporarily water stressed or permanently water-scarce environments including semi-arid areas (e.g. Afghanistan) and Mediterranean countries. Globally, more than 330 million hectares of land is under agricultural irrigation which accounts for the 20 percent of the total cultivated land and contributes 40 percent of the total food produced in the world. In coming decades, due to the rapid growth of population, industrialization, urbanization, and climate changes, the demand for irrigation and multi-purpose usage of water will increase in the globe, particularly in arid and semi-arid areas such as Afghanistan. Because of supplying artificial fertilizers, irrigated lands and irrigation have critical impacts on environmental sustainability than rain-fed agriculture. Sustainable water resources and ecosystem quality require the best management of both surface and ground water resources. Afghanistan is a country located in central Asia, with total area of approximately 647,500 km² and more than 30 million population. Agricultural development plays a key role in the economic development of Afghanistan. Generally, 12 percent of lands in Afghanistan is cultivatable and only 5 percent lands can be irrigated as agricultural land which produce about 80–85% of agricultural production. Irrigation is an important factor in agricultural development. The main challenges towards water resources are lack of quality meteorological data, mismanagement of irrigation, lack of irrigation infrastructure, lack of irrigation water conveyance systems and poor on-farm water management. Improvement of on-farm water management, introducing appropriate water conservation techniques/technologies, capacity building, communities’ awareness about efficient use of water and the prediction of drought and flood can reduce environmental vulnerability.

Keywords: agriculture, climatic changes, economic development, environmental sustainability, population growth, water management

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Introduction

Globally, irrigation makes crops production possible in temporarily water stressed or permanently water-scarce environments, including semi-arid areas (e.g. Afghanistan) and Mediterranean countries (Monteagudo–Moreno–Picazo, 2012). Mainly, Irrigated agriculture deals with following sectors: agriculture, land use, water, energy, rural development, and environment (Özerol–Bressers–Coenen 2012). Globally, more than 330 million hectares are irrigated as agricultural land which is the 20 percent of the total cultivated land and contributes 40 percent of the total food produced in the world. In coming decades, due to rapid population growth (9.7 billion people in 2050), increasing demand for food (60% more food) (Singh, 2016), industrialization, urbanization, and climate change, the demand for irrigation and multi-purpose usage of water will be increased in arid and semi-arid areas such as Afghanistan (Monteagudo–Moreno–Picazo, 2012). Afghanistan is a country located in central Asia, with total area of approximately 647,500 km² and more than 30 million people (Tschudin, 2004). Agricultural development plays a key role in the economic development of Afghanistan, as of 2008, 30% of country’s GDP is coming from agriculture, while service sector and industry share 28% and 42% of Afghanistan GDP, respectively (Kawasaki et al., 2012). The dominant characteristic of climate in Afghanistan is high temperature in summer, low relative humidity, and ample days without cloud cover (Shroder, 2014). Afghanistan’s agriculture is still in developing stages and many factors such as soil erosion, deforestation, desertification, high alkalinity, pest and diseases attack, soil compaction, lack of water, traditional method of irrigation, and lack of knowledgeable farmers regarding new tools and techniques, and dry climate have impacts on Afghanistan’s agricultural production.

Significance of Irrigated Agriculture

Agriculture plays an important role in economic growth, employment, poverty reduction, fiscal health and food security of the nation. Certainly, 80 percent of country’s population, close to 90 percent of the poor, are living in rural areas, and agriculture is the main sector for livelihood improvement. Afghanistan’s 12 percent land is arable which is approximately 8.5 million hectares. Only 5% is used as agricultural land which produces about 80–85% of agricultural production and the remaining 7% is rain-fed agriculture which provides 15–20% of agricultural production; this statement clearly determined that importance of irrigated agriculture in the country (Pedersen, 2009). Irrigated agriculture in Afghanistan started about 5,000 years ago. Irrigated agriculture provides higher and more dependable crop production on a per unit area
basis than that of dry land systems. Afghanistan’s agriculture depends on Irrigation (Habib 2014). Irrigated and rain-fed areas distributed based on river basins and types of water recourse of country are shown in Table 1.

Table 1. Agriculture Land by River Basin (000h)

<table>
<thead>
<tr>
<th>Type of land</th>
<th>Amu Darya basin</th>
<th>Kabul basin</th>
<th>Helmand basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active irrigated land</td>
<td>1155</td>
<td>450</td>
<td>1079</td>
</tr>
<tr>
<td>Inactive irrigated land</td>
<td>211</td>
<td>99</td>
<td>410</td>
</tr>
<tr>
<td>Rain fed agricultural land</td>
<td>2428</td>
<td>9</td>
<td>197</td>
</tr>
</tbody>
</table>


Water Resources of Afghanistan

Afghanistan water resources depend on precipitation from mountains during winter. Actually, Hindu Kush Mountains which range above 2000 m, provide 80 percent of country water resource (Qureshi 2002). Generally, Afghanistan has 75 billion cubic meters (BCM) of potential water resources of which 20BCM is ground water and remaining 55BCM is surface water. Although Afghanistan is landlocked country, it has ample water resources. The annual per capita water availability is almost 2500 cubic meters while in neighbouring countries such as Pakistan and Iran the annual water availability per capita is 1200 cubic meters and 1400 cubic meters, respectively (Qureshi 2002). Afghanistan’s water resources can be managed by management of river basins of the country. Based on the hydrological and morphological systems, water flow in the country can be divided into five main rivers basins (Habib 2014), namely: (1) The Amu Darya river basin (2) The Helmand river basin (3) The Kabul (Indus) river basin (4) The Harirod -Murghab river basin and (5) The Northern river basin. Almost 90 percent of total lands of Afghanistan have been covered by these five river basins (Figure 1).
Figure 1. The five major river basins of Afghanistan

Table 2. Estimated Surface and ground water balance BCM per year

<table>
<thead>
<tr>
<th>Water Resources</th>
<th>Potential</th>
<th>Present Use</th>
<th>Balance</th>
<th>Future use*</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water</td>
<td>57</td>
<td>17</td>
<td>40</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>Ground Water</td>
<td>18</td>
<td>3</td>
<td>15</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>20</td>
<td>55</td>
<td>55</td>
<td>40</td>
</tr>
</tbody>
</table>

*All existing irrigation schemes rehabilitated and managed efficiently. Afghanistan presently using only 3BCM from total 20BCM ground water resources, it is projected to increase for 8BCM by next 10 years (Qureshi, 2002).

Source: Qureshi (2002)

Environmental Impacts of Irrigated Agriculture

In agroecological research and sustainability of agriculture, the degradation of natural resources is the major concern (Sabiha et al., 2016). Water and food security is strongly connected with irrigated agriculture in both developed and developing countries. Globally, it is obvious that irrigated agriculture produces higher yields and income compared to rain-fed agriculture, which means that it has positive economic and social effects. On the other hand, irrigated agriculture has unavoidable negative effects on environmental sustainability, particularly, natural resources, soil and water degradation, physical decline of drainage and irrigation networks.
(Rakhmatullaev et al., 2010), environmental pollution, and over utilization (Özerol–Bressers–Coenen, 2012). Indeed, the continuous expansion of irrigation practices creates worry over the long period sustainability of water resources at various levels, with environmental, social and economic concerns (Ronco et al., 2017). Generally, the source of environmental impacts of irrigated agriculture can be divided into following: a) establishment of irrigation projects, b) water transportation and operation of irrigation scheme, and c) the management practices of irrigated agriculture (Stockle, 1996). The construction of massive irrigated projects results in modification of the present state of the ecosystem in around rivers, lakes and streams and surrounded environment. For instance; as a result of construction of dam for irrigation of the cotton field on Amu Darya and Syr Darya rivers, the Ara Sea in central Asia is disappearing; recent studies show that 24 species of fish are thought to be eliminated. The environmental impact of irrigation system and operation method relies on the quality of the water, type of water resource, and how water is applied for irrigation. In irrigated areas, the clearest effect on groundwater is overuse of this water which is the main cause of decreasing the water table (Tweed et al., 2018). The removal of ground water might cause the negative impacts in the environment including aquifers to become saline, land to descend, and many others ground water pollutions. Certainly, an extreme withdrawal of water for irrigation has effects on the environment for example the Aral Sea surface area declined to 50% and its water volume decreased to 75% (Stockle, 1996). Commonly, Salinity occurrence is a natural process but the application of water resource with meaningful salinity may affect the quality of the irrigated land and the sustainable agriculture production which is supported by irrigated land, especially when irrigation and soil are managed poorly.

Commonly, waterlogging takes place because of overusing and poor management of irrigation water. Overall in the world, waterlogging damages almost 10% of all irrigated land. Salinization and waterlogging effects can be decreased by training the crop producers about new management methods rather than more investment on soil improvement and drainage (Stockle, 1996). The degradation of ground water quality by salts, pesticides, and fertilizers is a critical environmental problem. Salinization of water resources can cause extremely negative impacts on sustainability of irrigated agriculture than soil salinization. Another important source of water pollution is because of runoff from agricultural land. The application of agrochemicals including pesticides and fertilizer can account as a main cause of water pollution, particularly leaching of nitrate to ground water. Runoff not only transports the nutrients and chemicals, but
it is the cause of soil erosion and sedimentation. As a result, soil productivity is going to be declining.

**The Key Challenges**

The construction of modern irrigation system in Afghanistan has been started since 1970s. These systems are the followings: (1) Kunduz_Khanabad’s system in the north of the country (2) in the south west, Helmand Arghandab systems and (3) Ghaziabad systems in the East Nangarhar province. Water resources of Afghanistan are facing several challenges which are needed to be addressed properly. Nicely coordinated plans are necessary for the permanent solution of these problems which would in return solve many other challenges of our country including the creation of employment facilities, management of water resource, providing clean energy, increasing crop production, and food security. The main problems are the followings; loss of irrigation systems in Afghanistan due to four decades of war and conflict, recent drought in 1999, poor management of water resource and lack of water reservoir structure. Second main challenge is climate change, decreasing of Afghanistan’s glaciers and the changing of wetlands to dry land. Among 21 determined wetlands of Afghanistan, three of them are globally important which have been dried out, including (1) Sistan Wetland - shared between Afghanistan and Iran is almost completely dried (2) around 98% of annual average of Helmand and its major tributaries are decreased and (3) several species of waterfowl has disappeared on Hamuni-puzak which has worldwide importance for bird migration (Habib, 2014). Another main problem is lack of access to safe and fresh water, according to the recent survey. Only, 13% of Afghans have access to safe water (Habib, 2014). Flood can also be accounted as a challenge for water resource management. Due to the deforestation and removing of vegetation cover, the floods have been raised. Indeed, flooding are occurring mainly in June-July and have destroyed hundreds of hectares of land. The lack of sufficient and reliable data for creating a strategic plan for water resource management, weak performance of current irrigation systems, limited financial resources and security problems are also known as critical concerns (Mahmoodi 2008). The climate change, variability of precipitation, lack of awareness, and poor water safety plan are other related problems. The quality of groundwater resources has been affected by following factors: lack of suitable effort for the observation, management and conservation system, improper land use management, lack of strong regulation for the conservation of groundwater, and lack of disposal management and waste treatment (Kohistani, 2013).
Dealing with Environmental Effects of Irrigation

Due to rapid population growth, water dams, reservoirs and other types of infrastructures still have to be constructed. Especially in arid and semi-arid areas where the water shortage is in the critical stage. But the establishment of these massive water projects must be based on higher standards with more compatibility to the surrounded environment and ecological condition. Indeed, a few interventions are suggested for the preventing, mitigating, or reversing of soil and water degradation. Possible interventions are irrigation/agronomic practices, system management and engineering interventions. Interventions related to agronomic practices are as following: reduction of sedimentation in runoff, on-farm irrigation management and minimization of water losses during on-farm distribution, improvement the efficiency of irrigation systems, application of irrigation due to crop water requirement, cultivation of the crop based on crop suitability map, and application of high efficient irrigation method such as sprinkler or drip irrigation method. Engineering practices include the consideration of environmental effects in design, construction of irrigation infrastructure, build-up of drainage system, recycling of drain and waste water, and minimization of canal seepage (Stockle 1996).

Conclusion

Several factors affect water resource sustainability in the country including population growth, industrialization, agricultural activities, sanitation, immigration, environmental degradation, and so on. Water resource management in Afghanistan is facing complex challenges. Immediate and easy solution seems difficult, the solution of these problems needs an exact strategic plan at government level, based on data obtained from the survey. The following activities are required for the sustainable improvement of irrigation system (1) Establishment of Comprehensive Data Bases for Creating the Strategic Plan, Institutional Set-Up and Capacity Building (2) Rehabilitation and Improvement of Meteorological and Hydrological Stations (3) Priority Should Be Given to The Reconstruction of Irrigation Systems (4) National River Basin Management and River Bank Protection (5) Regulated Plans for Drought Combating (6) Recycling and Treatment of Used and Waste Water and (7) Prevention of Water Aquifer Depletion.
References


Misconceptions of Hunting

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Abstract

All over the world, ban on trophy hunting is a common demand, however, the consequences of the ban are highly underestimated. Hunting is a vital tool for conservation and when done properly it not only resolves conflicts arising between wildlife and human worlds but also plays a key role in recovering endangered species and greatly contributes to the economies of the nations. Hunting is a method by which natural populations are kept at numbers that the available habitat can support and at levels that are compatible with human activity and land use. Wildlife is a renewable natural resource with a surplus, which is harvested by hunters seasonally. Quotas and specific hunting seasons for each species ensure that the population is not overharvested.

Keywords: conservation, hunting, management, sustainability, wildlife

Introduction

The era when technological advancement has reached its peak and, in the time, when urbanization has become unstoppable, natural habitats and their inhabitants are facing a great risk. Across the continents, declining trends in the most treasured species are no longer unusual. Disappearing biodiversity is resulting in the collapse of natural order and thus, ecological services so far providing necessary means of survival will soon no longer stand available. Defining a solution to prevent the biological diversity from perishing has never been so urgent.

Wildlife management is a key part of biodiversity conservation. However, its methods remain to be somewhat controversial among the public. On the one hand hunting – being a key component of wildlife management – is endorsed by many rural communities. Its contributions to the well-being of the society are obvious, as hunting provides high-quality food markets, regulates the problematic wild animal species, improves biotopes and enriches the economy of the nations. Hunting not only reduces damage brought to the agricultural and forest lands by wild animals but also plays a major role in recovering and preserving both threatened animal and plant species as well as traditional landscapes and local traditions.

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However, trophy hunting is met with increasing opposition from non-hunting organizations and it often results in a strong clash of ideas. False assumptions around the issue of trophy hunting are common, consequently, this activity is often misunderstood. Animal rights activists often fail to understand the true motives of hunters and are demanding a ban on trophy hunting. In some cases, like Kenya, Botswana and India hunting is either completely banned or significantly limited. Moreover, these organizations are making an attempt to influence policymakers and the media across the globe, however, the images presented of trophy hunting are often inaccurate and most of the time deliberately misleading. Furthermore, these organizations have public support and so often times, sound, scientific facts are over-shadowed by pure emotion and personal feelings towards individual animals.

**Sustainable Consumptive Use of Wildlife**

It is easy to have a negative perception of hunting when its true ideas are overlooked. In reality, sustainable hunting aims to maintain population abundance, distribution, structure and behaviour of species. It aims to maintain genetic diversity – by encouraging the maintenance of subpopulations – and improve the conservation status of endangered and threatened animal species (IUCN ESUSG 2006). Hunts and trapping licenses are usually purchased by people who are willing to pay substantial amounts of money for the experience. As a result, revenue generated by hunters provide management organizations with funding for research and conservation efforts to protect wildlife.

Hunting is one of the key components of wildlife management and has many positive effects on ecosystems when done properly. Despite the opposition, hunting is playing an important role in sustainable development. The idea of sustainable hunting is to maintain animal populations at an economically and ecologically healthy level for the amount of space that is available. In order to accomplish optimal population size and avoid posing risk to the species, authorities encourage quotas and hunting seasons for specific species as a form of regulation which limits daily and seasonal harvest. Hunters under the principles of fair chase restrict their hunts to individuals of a certain sex and age group (Conservation visions, 2017). In order to prevent overhunting, bag-recording is strongly encouraged. Bag records are crucial for understanding population dynamics and they play an important role in adopting an appropriate management plan. Trophy hunting is based on the idea of adaptive management which continuously monitors and evaluates the current situation and if necessary, revises the management plan (IUCN ESUSG 2006).
Keeping populations fit is one of the priorities of sustainable hunting. Food scarcity has a devastating effect on wildlife communities by weakening animals’ immune systems and making them prone to diseases. Diseases rapidly spread as a result of predation, reproduction and direct contact. It is quite frequent that viruses like the African swine fever virus are transmitted from wild species to domestic ones thus decimating domestic animal populations. In order to avoid transmission of the disease within and between populations it is necessary to remove the weak and sick individuals giving reproduction opportunity to stronger ones. This system keeps the populations fit and at the same time reduces the chance of wild animals causing damage to the rural communities.

In most cases, wildlife species are illegally killed if they provide little benefit to local communities or cause them substantial damage. The individuals are sold as food or as commercially valuable products while their habitats are degraded and used for different purposes (IUCN SSC, 2012). Trophy hunting has the ability to address this issue by making wildlife of higher value to the local people. Sustainable hunting views socio-economic sector as one of its main considerations. In this context, hunting aims to maintain the abundance and distribution of hunted species to the level that is compatible with the interests of the socio-economic sector. The system also encourages local employment and participation of local hunters and supports optimizing utilization of game meat and other products. At the same time, the sustainable way of hunting ensures that the cultural, historical and artistic values of hunting and wildlife are well preserved (IUCN ESUSG 2006). It is important to note that trophy hunting involves taking small numbers of individual animals and does not require highly developed infrastructure. The hunts are therefore high in value but low in impact compared to other types of land uses like agriculture or tourism (IUCN SSC, 2012).

**Biological and Ecological Benefits of Hunting**

The world where humans have taken the lead becomes an unfortunate reality for the most unique species that are tittering on the brink of extinction. Defining a viable solution to avoid mass extinction has never been so urgent. Sustainable hunting has been playing an important role in recovering endangered species and keeping populations stable and fit.

Under the false assumption that the wildlife resources were limitless and inexhaustible, early settlers of North America drove many wildlife species to the edge of extinction by the late 1800s (Conservation visions 2017). Before the arrival of the Europeans, elk were the most widely distributed species whose geographical range extended from southern Canada to Northern
Mexico, however by the mid-1800s elk started to decline in the eastern United States, and soon all over the country. An estimated 10,000,000 elk rapidly dropped to less than 500,000 individuals by 1970s (Hamr, 2016). The primary cause for this decline was habitat destruction and market and subsistence hunting (Fricke 2008). Active market hunting for meat and hides was also a prime cause of American Bison population decline (Gates, 2010). An estimated number of 60 million American buffalo (Lott, 2003) dropped to 168,000 by 1800 (Gates, 2010). It is crucial for market hunting not to be confused with trophy hunting, as the system of trophy hunting is what facilitated the recovery of these species in later years.

Boone and Crockett Club took the responsibility upon itself to recover these endangered species. They recognized that to facilitate species recovery and to prevent future threats to populations, one of the most important things to encourage was a sustainable harvest. This system protects the core of wild breeding population, namely females and young male individuals while focusing the harvest on older males that have already reproduced and contributed their genes to the population (Conservation visions, 2017). As a result of trophy hunting combined with other conservations tools, North America’s critically endangered wildlife species recovered to more stable numbers.

Some organized groups are demanding a ban on trophy hunting as the activity is regarded unethical and claimed to be ineffective. However, the consequences of eliminating one of the most crucial conservation tools are largely underestimated. In response to poaching and illegal Ivory trade, Kenya passed a hunting ban in 1977. It was believed that with hunting pressure off, the game would return to high numbers. What took place as a result of the ban was quite the opposite of its intent. Charismatic megafauna – lions, rhinos, elephants and large antelopes – are experiencing extreme declines since the late 1970s. Wildlife numbers have declined on average by 68% between 1977 and 2016. Giraffe with an estimated population size of 76,236 in 1977 dropped to 25,193 by 2013. The number of buffalo decreased to 40,245 by 2013 from 66,169 in 1977. Impala and hartebeest experienced 84% decline in population size while the eland and oryx numbers were reduced by 78% since the year hunting ban was passed. These declines raise serious concerns about the future of African wildlife, in particular the effectiveness of wildlife conservation policies, strategies and practices in Kenya. Of course it is false to assume that banning consumptive use of wildlife is the sole reason for such declines, other causes of negative wildlife population trends include exponential human population growth, increasing livestock numbers, declining rainfall and a striking rise in temperatures, however,
the fundamental cause remains to be ineffective policy, institutional and market failures (Ogutu 2016).

**Human-Wildlife Conflict**

Conflict arising between rural communities and wildlife is the most widespread and one of the most intractable issues in conservation biology. Agricultural lands are frequently damaged by wild animal species causing farmers great economic losses. However, it is wrong to assume that this issue encompasses only the agricultural damage. Coexisting with such species can impose a variety of significant costs upon local people, including depredation upon livestock or game, crop-raiding or destruction of stored food, attacks upon humans and disease transmission to stock or humans.

In US agricultural producers’ survey, 89% of the respondents admitted to be experiencing problems with wildlife species. Wild animals seem to damage private property of 80% of the respondents, out of which 54% claim that the losses to exceed $500 every year. Wildlife sanctuaries are crucial to conserve populations and protect them from predation, poaching and other dangers, however, due to the overwhelming damage brought by wildlife, 40% of all agricultural producers actively oppose the creation of such establishments, and 26% note that the extent of damage reduced their will to support wildlife habitats on their property. This kind of attitude in the rural community is worrying. Agricultural lands are farmers’ main source of income, therefore in attempts to protect the land, it is possible for locals to turn to means that will devastate natural populations (Messmer, 2000).

The fact that these damages still occurred after an annual expenditure of over 40 hours and $1000 per farmer to prevent the damage, is an indicator that a more active control method of wildlife species is required. It was estimated that losses on agricultural lands exceeded $2 billion despite the fact that over 91 million hours and $2 Billion was spent to prevent the damage. Of these losses $160 million was to livestock and poultry; $53 million was to vegetable, fruit and nuts while $30 million worth of stored crops were destroyed. However, agriculture is not the only industry that suffers damage, beaver (Castor Canadensis) and deer (Odocoileus spp.) are costing timber industry devastating damage as well. The estimated loss to tree plantations due to beaver activity was estimated to exceed $22 million in 1995 (Messmer 2000).

White-tailed Deer (Odocoileus virginianus) have especially strong effect on altering plant species composition and distribution. For example, deer have an ability to change the density
of legume species, which shelters nitrogen producing bacteria. The change in their populations greatly reduces the nitrogen content of the soil, thus influencing agricultural production success (Russell 2001). Deer alter the success of certain plant species, consequently, they may also change the success of other herbivores, and also that of species along with many different food chains.

Woodpigeons (Columba palumbus) are major agricultural pests that bring tremendous damage to oilseed rape crops. It was estimated that without special control programs damage would amount to £45 million in East Anglia alone. As a result, more than 50% of shooters are involved in protecting crops from pigeons and other avian pests (PACEC, 2014).

It is important to point out that apart from damages on private property (in both rural and urban areas) wildlife populations also pose danger to the residents in areas where their population numbers are unregulated. More than 5000 people are injured or hospitalized while more than 400 people die due to wildlife related incidents (Messmer, 2000). Most of these economic and ecological consequences can be either avoided or reversed if wild animal densities are reduced to harmless levels.

**Driving the Economy**

With more than 7 million hunters in Europe (FACE 2010) and 11 million in the USA (US Fish and Wildlife Service 2017) and more than €16 billion generated by trophy hunting in Europe alone (Middleton 2014) hunting becomes the driving force for wildlife conservation and sustainable development. Hunters around the world are making contributions to all sectors of the economy by both direct and indirect means. Farmers are compensated for crop damage in the primary sector, hunting gear is purchased from the second sector while tourism services are paid by hunters in the third sector (FACE, 2014).

Across Europe, in developed and developing countries, revenue generated by hunters directly benefits both wildlife and rural communities. In 2007 in Ireland, hunting ended up generating €111.6 million (FACE 2014), 82 percent of which was spent on developing the rural areas, 16 percent went to developing cities and larger towns while the remaining 2 percent was spent outside the country (Scallan, 2012). In the UK at least 600,000 people shoot live quarry, clay pigeons or targets, these activities are contributing £2 billion to the UK’s economy. As a result, two million hectares are being actively managed for conservation. Shooters spend almost 4 million workdays on conservation programs, this is an equivalent of 16,000 full-time jobs. Moreover, shoot providers spend nearly £250 million a year on conservation while more than
£2.5 billion is spent by hunters on goods and services each year. It is crucial to point out the fact that shooting and hunting support 74,000 full-time jobs, thus strongly reducing unemployment (PACEC, 2014).

In Italy, €3.26 billion is estimated to be generated by 850,000 official hunters while at the same time creating in total of 43,000 jobs. In 2008 in Finland, around 40,000 hunters took part in voluntary labour-intensive activities. Ranging from conservation activities like game monitoring to assisting with traffic accidents involving wildlife, these programs were estimated to value €7.1 million (PACEC 2014). In Greece hunters’ yearly contributions finance 400 game guards who are involved in tracking and tackling illegal activities which annually amount to €7 million (Papadodimas, 2011).

In 2016 11.5 million people participated in hunting activity in the United States. Hunters spend up to 20 days on the field pursuing wild game. US’s most popular big game like deer, elk and wild turkey attracted more than 9 million hunters (80%) while small game including squirrels, rabbits, quails, and pheasants ended up attracting 3.4 million hunters (31%). Geese, ducks and doves attracted 2.4 million hunters (21%) who, in total spend more than 15 million days on the field. Other animals like coyotes, groundhogs and raccoons were popular game species for 1.3 million hunters (11%) spending 13 million days hunting. Overall, in 2016 hunters in the United States ended up spending $25.6 billion on trips, equipment and licenses with an average expenditure of $2.237 per hunter (US Fish and Wildlife Service, 2017).

Between 2000 and 2008, in seven SADC (South African Development Community) countries trophy hunting ended up generating over US$190 Million per year. Sport hunting in many African countries, like South Africa, is contributing more than 68.3 million USD to the gross income, it is this revenue that drives sustainable development in the regions by funding and building facilities crucial for national advancement. The tourism sector in Tanzania plays a key role in foreign exchange earnings and contributes more than 50% to total export earnings. Tourism of Tanzania is estimated to directly support at least 30,000 jobs on the mainland and 6,000 more in Zanzibar with wildlife safaris being the primary attraction especially in the Northern Circuits (Vernon, 2010).

**Conclusion**

Some organized groups are demanding a ban on trophy hunting and are highly underestimating the consequences that would follow the ban. The main idea of sustainable harvest is to maintain animal populations at an economically and ecologically healthy level for the amount of space
available. Trophy hunting is based on the idea of adaptive management which continuously monitors and evaluates the current situation and if necessary, revises management plan. Regulations like seasons and quotas make sure that the populations are not overharvested, making hunting rather safe management method for wildlife. It is important to note that trophy hunting involves taking small numbers of individual animals and does not require highly developed infrastructure. The hunts are therefore high in value but low in impact compared to other types of land uses like agriculture or tourism. Keeping populations fit is one of the priorities of sustainable hunting, therefore removing weak and sick individuals is an important practice to give reproduction opportunity to stronger ones. Contributions that hunting makes to the economy are obvious as many conservation programs have been financed that recovered most unique endangered animal species. With trophy hunting removed countries risk to lose not only a major source of income and funding but its valued wildlife altogether.

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Immigration and the Challenge of Sustainable Development\textsuperscript{7}

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Abstract

The rise of immigration and the large influx of immigrants coming into Europe and North America are trends that have given political clout to right-wing groups, especially after Brexit. The issue of immigration, however, is hardly restricted to the developed world. A serious analysis, dispassionate and sober, is necessary in order to understand the benefits and impacts of large-scale immigration on sustainable development in regions all over the world. By identifying patterns and solutions, we will intertwine different areas of knowledge and prove that immigration is a vital issue for the West and its survival as a plurality of democracies.

Keywords: culture, democracy, immigration, sustainability, xenophobia

Introduction

The issues of immigration facing countries nowadays have been extensively discussed in the media and in the public arena, both by left-wing and right-wing parties. The human aspects of immigration are often politicized in order to attract voters and shift public debate to get votes: we have seen this happen in the United States with the election of Donald Trump, in France with the success of Marine le Pen, in the United Kingdom with Brexit (Hope 2018), as well as in Central European countries that are staunch opponents of mass immigration. But this issue is hardly exclusive to the developed world. Immigration puts financial strains on countries as diverse as Iran, Lebanon, Brazil, Mexico and Nigeria.

How are these issues framed by the political parties across the ideological spectrum? The very notion of nation states is tied to interpretations of immigration, to its definition and to the implications of a large influx of migrants entering a territory. This paper will focus on the political, as well as the social and economic dimensions of the issue, on how immigration affects sustainable development. In order for us to channel the discussion as presented in this paper, it is necessary to investigate its different aspects so as to arrive at a logical conclusion.

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The result will hopefully inform the reader about the implications that immigration has for sustainable development.

It is necessary, at this point, to define immigration. The term refers to the movement of humans into the territory of a country by crossing its borders. This paper will not focus on the refugee crisis: a person becomes a refugee when their government refuses or is unwilling to protect them from harm. Under special circumstances in international law, other countries become legally obligated to take them in as refugees and offer them protection. This obviously impacts sustainable development as well, but the status of refugees is a much more specific subject, one that can be challenged by countries who do not wish to host them.

Sustainable development is also a concept that must be clearly understood. It refers to the maximization of productivity or human development without causing a situation of imbalance in the economy, in the environment or in other areas of human life. It is not limited only to a society’s impact on nature, it can also be applied when talking about purely social aspects. It is the responsibility of all governments to monitor the use of water, land, food, fuel, electricity and money, for example. What we often see in agriculture these days illustrates a challenge for sustainable development, especially but not exclusively, when agricultural companies use immense quantities of water for their business, disregarding the global call for being economical with freshwater supplies running out. Unfortunately, this irresponsible attitude seems to characterize several permissive governmental institutions in agricultural powerhouses along the Equator.

Even in more developed democracies (the ones with more robust and transparent institutions), it is always a challenge to promote sustainable development. The government’s role is to regulate business and to create rules that guide life in a society, promoting people’s safety and welfare. The population, on the other hand, is expected to fund these social projects with a part of their income that the government receives by means of taxation. In this manner, people keep the government functioning. In exchange, they should be able to choose which social projects they wish to fund by participating in a democracy, directly or through representatives (Haider-Markel 2016). This very simple structure is at the core of the modern nation-state. Besides its population and structure, a state is also defined by its territory. The imaginary line we call border really determines people’s fate and safety, but it can complicate matters further when we think of immigration, especially of large waves of immigrants.
The Impacts of Immigration on Society

As to what a large influx of immigrants does to a country depends, primarily, on the size of the group, on how educated the immigrants are and on what country they choose to enter.

Let us take a look at Finnish immigrants in Sweden, for example, to understand how immigration works. Finland and Sweden are two countries with plenty of cultural similarities and with virtually no ideological differences, albeit with two very distinct languages. What we see in Sweden is that Finnish immigrants (a small group) cause practically no disruption to the institutions or social life of the host country. This can be explained by the fact that immigration from one developed country to another is hardly about survival or personal safety. Often the decision of a person to change countries is motivated by the desire of getting a higher salary, or, indeed, by the need to have access to better conditions or facilities at work for realizing his full potentials. In Europe, it is not uncommon either that people set up residence in a different country because of the tax benefits it offers.

There are other scenarios, however, where the arrival of immigrants might, and often does create difficulties for the host country. The first and most obvious element of these “difficulties”, at least when dealing with immigration to countries with extensive social benefits, is that immigrants have not made any contributions to the system before arriving in the country. Yet, for a long period of time before they are able to find work and start paying taxes, immigrants will have to be provided for by a social security network financed by the taxpayers of the target country. This situation has become fairly common in Europe, a continent with the principle of freedom of movement recognized in most regions and, in theory, in all the member countries of the European Union, as well as in some very prosperous economies outside the EU. Europe attracts millions of immigrants; the largest economy in the continent, Germany, is the second biggest destination for immigrants from all over the world.

A closer look at the three key factors mentioned above, i.e. the number of people entering a given territory, their education level and the target country itself, can reveal further problem areas where failure can be expected.

Social unrest in the Middle East has forced millions of people to leave their homes and find someplace else to live. People who left Syria after the beginning of the Civil War settled mostly in the Middle East, but those who could afford it made the journey to Europe. Hundreds of thousands chose to settle in Germany. It is still unclear what their legal future is going to be, since, according to the German Constitution, only 1% of people coming from Syria can be
considered refugees and granted this status under the criterion of clear evidence of personal persecution suffered and of threat to life should the individual be repatriated. Although it is not the aim of this paper to analyse the situation in Germany only or to restrict the discussion to one country, Europe’s largest economy lends itself as a fitting example on account of the sheer might of its GDP. The fourth largest economy in the world can hardly be expected to suffer negative consequences because of a large influx of migrants. And yet it has. The negative effects on Germany are so incredibly pronounced that one must wonder whether or not the government was actually interested in keeping the social welfare system intact or thought about how it could be maintained in the long run. In 2015 alone, Germany spent twenty-one billion euros on the population seeking asylum as a result of the Syrian Civil War. The financial impact is certainly not the most pressing concern for such a big economy, but in order to understand the full dimensions of this issue, we must not forget who pays the bill: the middle class.

This leads us to another problem of immigration and how it affects sustainable development: immigration hinders social progress in that immigrant workers accept lower wages, which leads to a precarious situation for workers of the host country. If immigrant workers accept a certain amount that is the same or slightly lower than the minimum wage, there is no incentive whatsoever for companies to increase their workers’ salaries. In Germany, the wages of the middle class, adjusted for inflation, have not increased since the 1970s. This is so good for businesses that Bernie Sanders, a democratic socialist who ran for President of the US, actually called the “open borders” idea a Koch brothers proposal (Eskow 2015), referring to the family that owns the second largest company in the United States, one that donated 880 million dollars to candidates of the 2016 presidential election. The same trends can be observed in countries like the United Kingdom and Australia, with the latter having seen its real wages decline since 2012. Sander’s concerns regarding the situation of American workers are not misplaced. By importing cheap labour, businesses “freeze” the situation workers find themselves in, and erode labour rights for domestic employees. The situation is very much the same in other regions that receive large influxes of immigrants, such as Europe. Immigrants are often accused of stealing jobs in the host country, but that is not quite the problem. By doing low-paid work that citizens of the host country do not desire to do, immigrants inadvertently hinder progress. Citizens who enjoy full rights are more likely and more able to fight for their rights and better working conditions (Alvarado–Creedy 1998) as, for them, there are no language barriers, they have a clearer understanding of how the government works and they have a stronger connection to the country itself. Immigrants, on the other hand, especially those that have entered the country illegally,
are not very likely to go on strike or demand better wages. Even the ones who enjoy legal protection might find it harder than usual to change anything in their workplace, allowing for the employer in jobs requiring average skills to leave workers’ pay unchanged in an environment of a plentiful supply of immigrants ready to fill vacancies.

Another problem arises when immigrants get benefits from the government and are joined by their families later on. This might double or triple the number of people that have originally entered the country. A large population of immigrants dramatically impacts a country’s ability to fund sustainable development. It might fuel social friction, even unrest and create conflicts within the political arena. As suggested in the introduction of this paper, social unrest in Europe and North America in recent years has partly been the result of, or blamed on, immigration. Not the controlled, monitored, legal type of immigration that does bring benefits to the host country, but the open borders approach that some right-wing politicians see as an attempt to destroy nation-states. Proponents of this idea have argued that immigration in recent years has been more of an imposition on and less of a free initiative or choice on the part of the host countries. They see no economic benefits coming from receiving immigrants, and they believe immigration has a negative impact on social cohesion and culture. Notable politicians that follow this school of thought are Nigel Farage, leader of UKIP in the United Kingdom, Donald Trump, President of the US, Viktor Orbán, Prime Minister of Hungary, among others. Political parties are also gaining momentum by building their stance around immigration, with alliances among them like the Five Star Movement in Italy and the Alternative for Germany, a party that is now the third biggest in the country and is an unyielding opponent to Angela Merkel’s policies.

**Culture and Immigration**

In terms of social cohesion and culture, immigration will probably work better in countries where the individual is more important than the collective (Alvarado and Creed, 1998), as the construction of “national identity” in collectivist countries is incompatible with individualism. Here, one is reminded of what was called “parasitic” behaviour, a crime under the Criminal Code in the Soviet Union. This simply meant that the citizen did not work, which was considered a major offence, since the person guilty of this did not conform to the principle of “everybody being but a particle, non-existent in itself, in the nation’s body”, hence no individual options were tolerated. Worse still, this was regarded as an attack on national identity or
interests. Joblessness would certainly not be a crime in a country like the United Kingdom, for example, where the individual has the right to decide whether or not to work.

Another country that ranks high on Hofstede’s dimensions of culture when it comes to the collective mentality is Japan. During the height of the refugee crisis when European nations took in more than a million people seeking refugee status, Japan admitted 28 individuals. Japan works as a collective society, where individuality does have its place, but it is certainly not the most important value a person can have. People are part of the social organism called Japan, and the government indeed tries to leave no citizen behind. This means that culture and tradition are of extreme importance. The country, after all, still has an Emperor and maintains many aspects of its culture that date back hundreds of years. Germany is a more complicated case. Patriotism is extremely frowned upon in Germany, because of its shameful history of militarism and genocide (much like in Japan, but Germany is a more individualistic society). German flags are rarely waved by its citizens outside of sport competitions. But when immigrants from different cultural and religious backgrounds entered the country, it only exacerbated social tensions and it almost destroyed the alliance between the Social Democratic Party of Martin Schultz and the Christian Democratic Union of Angela Merkel. Germany has had incidents of sexual abuse perpetrated by immigrants of Muslim backgrounds, who were brought up in paternalistic societies where women are not expected to display their will, nor are they permitted to confront male leadership or dominance. This, of course, is not only a characteristic feature of the Muslim world. Women in the Christian tradition are little more than man’s property and they certainly do not play a central role in the Bible. In Orthodox communities, women still have their freedoms restricted. Greece only accepted the European Union’s freedom of movement on condition the EU recognized some of Greece’s own rules: no women are allowed to enter the Mount Athos peninsula, home to Orthodox monks who believe that women would be a distraction from more spiritual endeavours. Ironically, even eggs must be imported because female animals are also banned.

The main difference between the Muslim world and the European countries when it comes to the role of religion is that it has only a marginal function in most European countries (Esposito 2000). The Czech Republic and Estonia, for example, are among the least religious countries on Earth. Even in a more conservative country like Hungary, the government is by no means required to follow the instructions of the Church. The same is true for Ireland, England, Italy, Denmark, Poland. Across Europe, religion does not play a central role in the government anymore. Europeans had to fight for the separation of political and ecclesiastical powers and,
indeed, secularism is a “sacred” value in France. This means that the State is independent of the Church, and there is nothing but the Constitution that the state is subject to when shaping its policies. (Incidentally, Europe’s only absolute monarchy happens to be the Vatican.)

In societies where religion plays a central role, the Constitution is merely a law made by Man, fleeting and feeble in the eyes of God. Who are we to decide what is best for us if God always has a plan? One can clearly see how this is incompatible with democracy. In a democracy, there should be nothing above the Constitution and the free representation of the will of the people; religion and faith are private matters. These are the values that citizens hold dear. A large group of people who do not agree will certainly cause disruption by trying to challenge the idea that the Nation is indeed above their God. Apart from adherence to democratic values and social cohesion, there are also the aspects of culture, already touched upon above, which are particularly important for countries whose histories date back hundreds of years and who have successfully built a national myth. These include Russia, Hungary, Japan, China, Iran and other societies that consider culture as an element of cohesion since time immemorial. These are not countries that were built by immigrants, and they have shown militaristic behaviour in the past. For centuries, people in Iran have identified themselves as Persian, preserving their language and traditions (Frye 2018). This goes beyond any political incarnations of Iran, and the bond between members of the Persian ethnic group is certainly stronger than the allegiance of many Iranians to the Islamic Republic.

The same can be observed in Hungary (Pearson 2015), a country that has been invaded, defeated, betrayed, occupied and crushed by foreign powers but has managed to keep its culture and language alive. It is imperative for these countries to keep their social ties intact, because it serves as a glue of social cohesion (Alvarado–Creedy 1998).

**Final Considerations**

The values of sustainable development can be upheld by any society in any continent following any political ideology. One can certainly applaud Morocco’s decision to invest in solar panels that guarantee cheaper energy, or Brazil’s policy of using sugarcane to produce ethanol and keep millions of cars running without relying only on oil. Sustainable development can be seen in Estonia, where access to the Internet is a basic right of people, or China’s decisions regarding the reduction of pollution. Human communities from all over the world agree that human life must be preserved, and prosperity is an important driving force for development, but they also see the beauty of equilibrium in our natural environment and the necessity to preserve it. The
human aspect, as presented in this paper, can definitely be understood through the phenomenon of immigration. When guided by the ideals of sustainable development, immigration should be rational, humane and proportional to a society’s resources. If people’s welfare comes first, how can we allow new individuals to enter a society if that means they will eventually sleep on the streets or be deprived of decent wages and food? Governments cannot and should not be allowed to make up excuses for accepting thousands of new immigrants while neglecting their own citizens and their well-being. Immigrants should be able to provide for themselves and for their families and should exhibit some level of understanding of the legal framework they find themselves in, as well as improve the welfare of the society that welcomes them. Australia follows a similar system in which immigrants are chosen based on their talents. Other concerns, including health, are also taken into account. This allows citizens to put pressure on their governments in terms of labour rights, as well as to discourage decisions by the executive or legislative powers that are nefarious for the middle class, which also requires societies to come up with sustainable solutions to a multitude of problems. A bright future is not built by importing people who are more desperate than we are, but by understanding deprivation in our own societies and what we can do to solve fundamental issues related to our communities.

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Financial Incentives Regarding the Regulation of Environmental Issues

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Abstract

Years ago, I bought a book titled What Money Can’t Buy by Michael J. Sandel. Reading it made me do extra research into lots of areas, mentioned in the book. When you read news related to the Himalayas, you get to know whether the expedition attempt was successful, how many people were involved in the climbing expedition, what kind of equipment they used and how much time they spent on the mountain. But have you ever wondered what happens with the litter they left behind? Or have you ever heard about voluntary carbon offsets regarding your flights? The warning signs of the changes in our environment are really coming to the fore. A lot of these have been caused by pollution. What is the distinction between a fine and a fee when it comes to the regulations of it? How does pollution permit work in reality? I examine how these permits have changed and how putting a price on something that is harmful for the environment can cause a shift in the attitude of people. What is the moral attitude that is required for obtaining more results in environmental protection? I give a list of the small deeds by an average person that can make a change in our environment. Last, but not least, for companies what are the advantages of becoming carbon neutral? The aim of the paper is to make us more aware of the ecological consequences of our personal decisions and present some ways to get involved in reducing our individual emissions.

Keywords: financial incentives, pollution permits, moral aspect, environmental awareness, social responsibility

Introduction

This paper was inspired by a book, written by Michael J. Sandel (2012). The title of the book is What Money Can’t Buy: The Moral Limits of Markets. In the book there are five chapters which are based on the similarity of some items that shouldn’t be sold and bought.

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The first chapter is about jumping the queue, which includes examples of fast tracks at airports or amusement parks, or how the line-standing business is growing, as no one has time to wait. Lobbyists in Washington especially take advantage of the latter. There have even been companies dedicated to providing stand-ins for congressional hearings since as early as 1985 (LineStanding.com). The title of the second chapter is Incentives, and it is mainly about financial stimuli regarding healthcare, procreation, hunting of endangered species and pollution permits. This latter gives the fundamental part of the paper and the ones connected to the environment are detailed later on.

The next part is the core of the book, where the author describes several instances of how markets crowd out morals. There is a controversy about how and where the goods of a market transaction get affected by, but in these cases, it is obvious that something has changed during the market exchange. Think about awards or prizes. Obviously, there is a big difference between buying a trophy (even if it is an original one) or winning the award itself. In the latter case, money dissolves its value and you cannot actually buy these forms of recognitions, such as the Nobel Price, Oscars or the Most Valuable Player of the American League. In other situations, arguments arise from the nature of the tradeable goods, such as kidneys or babies (Sandel 2012: 96). These controversial cases query the real freedom of the seller, for example.

The markets of the fourth chapter have a connection with the beginning and the end of life. Viaticals, life insurances, death pools are all connected to someone’s death and are businesses that make billions every year. The real distinction between insurances and death pools is the social purpose. The aim of the former is to provide security to one’s survivors after he is gone, whilst the other is pure gambling. Obviously, a bet in a death pool does not affect the death of the person and its goal is only entertainment, as is stated in an interview for Funeral wise blog by the runner of the biggest death pool webpage. Nevertheless, the taker’s attitude towards death is still morally questionable.

The bigger part of the “Naming Rights” chapter, which is the last one, has a strong connection with sports. Just think about autographs that are up for sale or that a corporation can bid on a stadium name, which obviously will be named after the company, thereby provides huge publicity for the corporate sponsor (Sandel 2012: 169). In the last two decades, public places, subway stations, educational institutions, state parks signed some serious sponsorship deals. For example, in exchange for pickup trucks for the lifeguards of Orange County, Chevrolet had free beach for their photoshoots and could use the title of ‘Official Marine Safety Vehicle’ in their ads (Sandel 2012: 190). There were some cases when police cars or fire trucks were
supplied, partly covered with the advertisement of the sponsor company. The questionable part of these deals is the imprinting they leave in us.

The reason why I introduced this book in so much detail, is to make the reader truly understand how, based on my reading experience, I tried to approach the following subjects:

- Objections of markets,
- Fines versus fees,
- Pollution permits,
- Carbon offsets.

**What Money Should and Should Not Buy?**

According to Michael Sandel (2012: 110), there are two objections to consider when defining the tradable character of an item in a market transaction. The fairness objection takes account of inequality that might influence market choices. This argument suggests that not every market exchange is as voluntarily initiated as it seems from the aspect of the market. Can we really talk about voluntary acts, if the seller is forced to participate in the exchange by his circumstances? The objection of the fairness argument is not against marketizing goods, but it stresses the inequality between the two parts of the market exchange, which all together create unfair conditions (Sandel 2012: 113). The corruption objection arises from integrity and queries the norms and attitudes that market relations may damage. In keeping with this argument, there are certain civic and moral goods, which are diminished if bought and sold (Sandel 2012: 111). The argument of corruption really focuses on the character of the goods, and the norms that should be followed, rather than on fair bargaining conditions. To fully understand the distinction between these two, think of kidneys. Should they be bought and sold? Or consider blood donation. Can someone, who is in need of money, truly make a voluntary decision in a case like this? This is the fairness argument. The corruption argument of the case is the objectifying view of the human person and sees human beings as a collection of spare parts to be traded. As Sandel writes, the embodied values of markets can sometimes crowd out nonmarket values which would be worth caring about (Sandel 2012: 113). The predictability of results coming from applying financial incentives vary from case to case. In the early 1990s, there was a little village in Switzerland, which was a potential choice for being a new location for a nuclear waste site. Economists surveyed the residents of the village whether they would accept to be the chosen one for the waste storage site, if the parliament decided to build it there. A small majority, hardly more than 50 percent of voters, stated they would accept it, out of civic duty and despite
the undesirable nature of the establishment. Then the economists repeated the survey, this time adding the possibility of compensation, to be more precise, offering an annual monetary payment to each resident. Contrary to the expected outcome the results showed that support decreased to 25 percent and stayed firm on this level, even after the increase of the promised monetary compensation (Sandel 2012: 114–115).

Another example of the unexpected outcome of the commercialization effect is a real-life anecdote. Dan Ariely, a behavioural economist, did a series of experiments about how paying someone to do something may diminish one’s motivation, as opposed to asking them to do it for free, particularly activities with good intentions. A bunch of lawyers were asked by the American Association of Retired Persons (AARP) if they were willing to help needy retirees with legal services at a discount rate. The lawyers refused. Then the AARP asked them again if they were willing to provide legal advice for free. Once it was clear that the activity was a charitable request, the lawyers agreed (Sandel 2012: 121).

The common element in these two stories is that when the activities were not seen as market transactions, the participation of the parties was sure out of altruism or some other greater cause. The reason behind the rejection when considering the activities as market transactions was that the offered prices were not counterpoising the necessary efforts or the taken risks.

The Difference Between Fines and Fees

The main factor that distinguishes between fines and fees is moral judgement. When we impose a fine on an activity, we indicate that the activity is wrong. Consider littering in the Himalayas, and not just the rubbish, but also the equipment left behind. For several climbers, leaving part of their equipment behind is crucial for their survival. By now, the amount of waste on the mountain requires more action, from both the government and the climbers. A new regulation demands each member of an expedition to bring back an extra 8kg of garbage, otherwise, they face legal action and lose the deposit of $4000. (Mount Everest litter…, 2014).

According to Sandel (2012: 65), the moral problem of using parking spaces reserved for the physically disabled is that the fine to be paid is considered as the cost of doing business. Treating the fine as an expensive parking fee misses the moral significance of not giving respect for the needs of the physically disabled.

In order to achieve results in changing our mindset and the way we treat our environment; it is truly important to emphasize the need for shared sacrifice and instrumental attitude toward nature.
Pollution Permits

The global goal is to reduce greenhouse gases and carbon emissions. The first environmental laws were passed in the United States, in the early 1970s. The then existing regulations were backed by fines, and their aim was to force companies to pay for their pollution. There was a moral disapproval expressed in the process of fining.

A decade later, as markets had developed, the approach started to change. Emission quotas were not guaranteed to every factory, pollution was priced instead, and the market was allowed to decide about the distribution. The easiest way to put a price on pollution was to levy a tax. In this case the payment is to be considered as a fee, rather than a fine. The size of the fee could have been restraining for companies, but this scheme was too complicated for political enaction, so policy makers applied emission trading.

Since the 1990s utility companies received licenses to pollute a certain amount and they could buy and sell these permits among themselves.

Based on the Kyoto Protocol on climate change, every country has to reduce their own greenhouse gas emissions, or they can pay to another country to cut down theirs. The moral problem with the global market in pollution permits is that rich countries can afford not to make reductions in their own energy use. What these countries are not considering is the fact that global warming is a cumulative harm. From the aspect of the sky the distribution of carbon emissions does not matter, as the damage will be caused regardless of the geographical location of the biggest emitters. But it matters politically and morally. Achievements are only available, if countries share the sacrifice of pollution restriction. For that, according to Sandel, we need a responsible environmental ethic (2012: 72–76).

Voluntary Carbon Offsets

The basic idea is to commodify the damage our energy use causes upon the planet. There are several companies, which are focusing on calculating and reducing emission and offer further options to achieve carbon neutrality, complemented with green marketing.

Basically, both BP Target Neutral and Carbon Footprint and Carbon Solutions follow the same steps in the process of creating a carbon neutral model for companies.
Quantify the Emission

As indicated in the article of Clark (2011), different offset companies can calculate different prices for the same action. The price depends on the estimating system that the company uses and on whether the offered neutralization projects also include other benefits for the receiver.

Reduce Emission, Replace

At this step, the goal is to reduce the use of fossil fuels and to identify those parts of the processes that can be replaced by lower carbon alternatives.

Neutralize

Offset the unavoidable carbon emissions via green energy projects, all over the world. Many of the projects are not only focusing on neutralizing the caused climate damage, but have additional benefits, such as education, clean drinking water, jobs, especially in developing countries. The portfolio of green projects includes forestation, clean water programs, wind farms, geothermal and hydroelectric power related establishments.

The risk of these initiatives is to excuse us from taking any further action on preventing to cause or limiting the harm. As Sandel (2012) writes about carbon offsets, for some people this could be a way out of making fundamental changes in their lifestyle and attitude which would be desirable for long-term effects in nature.

It was a real pleasure to have first-hand experience with carbon offsets. First, I actually calculated my CO₂ emissions on the webpage of BP Target Neutral. Using the same destinations (Budapest-London) in the calculation, my flight cost to offset was £1,51.

When I bought four flight tickets to London recently, at the end of the booking process at Ryanair, the opportunity of carbon offset donation was automatically offered. Although I miss the transparency of the carbon offset scheme and projects on the page of the airline, from the viewpoint of a customer, this new feature is still acknowledged and appreciated. As indicated in Clark’s article in The Guardian (2011), this (350 HUF = £0,9) was a very low price to pay for offset.

The two amounts are likely to differ due to the already mentioned reasons, which are the dissimilarity of the calculation methods, and the additional cost of the budgets of the optional green projects.

An extra detail to this topic is that the airport of Budapest is on the list of the first thirty carbon neutral airports in Europe. This is remarkable, as Budapest Airport is the first joiner from the
region of Central and Eastern Europe. According to the Director of Budapest Airport, they are continuing their efforts towards greener energy as the passenger traffic is also constantly and rapidly increasing (Piac&Profit, 2018).

What Actions Can Be Taken in Favour of the Environment?

These are the top ten, most frequently suggested actions, mentioned in Forbes, The Guardian, and on Carbon Footprint.

- Turning electrical equipment off when not in use.
- Take the public transport or share your car with others.
- At shopping, look for products with minimal packaging and use your own bag to carry them.
- Avoid buying bottled water, if possible.
- Buy local and seasonal, so energy is saved on transportation.
- Line dry your clothes.
- Reduce your consumption of meat, even one vegetarian day a month can make a significant difference to your emission.
- Clean safely, look for non-toxic cleaning products.
- Repair and reuse, before recycle.
- Offset your remaining or even just part of your carbon emissions.

In the light of changes ongoing in the world, it is quite remarkable that the World Wildlife Fund will publish its book about 12 deeds to save the world, later in 2018. I am really curious how many of their recommendations will match the items listed above.

Summary

The world is full of potential, inexpensive ways to reduce emissions. A simple deed, like changing the lightbulbs for low-energy types, can save, in a couple of years, the amount of the emission of a shorter flight (Clark 2011). The real answers to most of the questions raised in this paper should be found within our society. The norms we live by, as well as the purpose and the character of the product or service, should determine the terms of its tradability. Despite the transformation of markets, we have to care about the fields where nonmarket values should be determinant. To achieve more in favour of our world, we need a new environmental ethic, focusing on shared sacrifice and eco-friendliness.
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Migration from Republic of Moldova

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Abstract

According to a BBC study, the Republic of Moldova is the country with the highest population decline rate in the world. This paper examines the causes that lead to an advanced emigration from the Republic of Moldova, such as political instability, high unemployment rate, and collapsing incomes. It also presents the economic consequences of this phenomenon, the risks that it has for the European Union and the impact of labour migration on children left behind. Undoubtedly, there are some solutions to this problem. Fighting with corruption, workplace improvement, raising salaries, all give the country more opportunities for the future.

Keywords: corruption, children, emigration, population, unemployment

Introduction

Moldova is a very small and uniquely charming country, tucked away between Romania and Ukraine. On the map it looks like a bunch of ripe grapes, which is no coincidence – Moldova has the highest percentage of land dedicated to vineyards in the world. Moreover, it has plenty of wine cellars with a collection of millions of bottles of wine. Some of them are even included in the Guinness World Records. Also, Moldova is considered to be a piece of paradise, because it has fertile land, divine landscapes with a rich history, and warm, friendly people.

But over the years, emigration became the plague which consumes Republic of Moldova. It has only 27 years of independence, but Moldova may remain without people. It may happen that on the anniversary of the 40 years of Independence, there will no longer be anyone to celebrate the holiday. While in the late 1980s the Republic of Moldova had a population of about 4.5 million people, in 2016, according to the data from the National Bureau of Statistics in Chisinau, there are just around 3 million people living in the country (NBS 2017).

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At the same time, according to a BBC study, the Republic of Moldova is the country with the highest population decline rate in the world, and 106 people daily go to other more developed countries (CEEM 2018).

To investigate which countries Moldovans prefer, I conducted a survey. The survey methodology employed was a questionnaire, which was used to interview 50 people from the Republic of Moldova. With the help of the questionnaire I found out that Russia is the most popular among Moldovan emigrants, followed by Italy, the United Kingdom, Spain, Romania, Ireland, Greece and others.

Moreover, statistics from the Centre of Sociological “CBS AXA”, also show that Russia and Italy are the main destination countries for Moldovan emigrants, followed by Greece, Portugal and others. By labour type and gender preferences countries differ from “male” (Russia, Ukraine, Spain, Portugal – work in construction industry) to “female” (Italy, Turkey – services) destinations (Edgardo et al., 2005).

Causes

The beginning of the emigration phenomenon was after the collapse of the USSR. In that period, the Republic of Moldova had numerous economic difficulties. The country could not deal with the financial problems: a string of inconsistent reforms resulted in stagnation of economic activity. Hence, it led to the impoverishment of 70% of the Moldovans. Other big causes that led to advanced emigration from the Republic of Moldova were economic slumps, political instability, high unemployment rate, and collapsing incomes. To feed their families and to support their households at a decent level, people had to get used to the new living conditions. Thus, more than a quarter of the population made the decision to leave the country and work abroad.

Another question on the questionnaire was about the main causes that determined people from Moldova to leave the country. Figure I. shows the responses to the question, indicating that the biggest problem for the Moldovans is low wages. Also, 15 percent of people voted for corruption, few job positions and 10 percent of people said that there were few or inexistent development opportunities. There are also 10 percent of people that think that all of these are equally important problems for the country.

Undoubtedly, the main reason for emigration is the low wages in the country. The average annual salary in the countries of the European Union is about 29.6 thousand euros. This amount is approximately ten times higher than the average annual salary in the Republic of Moldova,
where citizens receive an annual average of 2.9 thousand euros. For instance, in the European Union, Norway has the highest salary – 47.6 thousand euros per year. This amount of money is 16 times higher than the amount Moldovan citizens receive.

In 2017, the average salary in the Republic of Moldova amounted to around 280 euros, 12.1% more than in the previous year. The highest salaries are paid to the employees in the financial and insurance sectors – 662 euros, IT and communications employees – 652 euros, and those of the heating, electricity, gas and water supply areas – 560 euros. The lowest salaries are in the arts and leisure activities – 170 euros, and for those working in the field of accommodation and public catering – 210 euros. Employees in education also have modest salaries – 235 euros and in the areas of medicine and social protection – 315 euros. Moreover, WB estimated that 21.9 per cent of the Moldovan population is below the national poverty line. Thus, mass migration is basically economically driven, a mechanism to alleviate poverty, also representing a survival strategy. Migration strategies are sometimes supported by the success stories of emigrants and by social networks established abroad (relatives, acquaintances and close friends who already live and work overseas).

**Consequences**

The magnitude of the emigration from the Republic of Moldova recorded over the past two decades had a huge impact on the country. Furthermore, it led to 3 salient consequences: children left behind, risks for the European Union and less effectiveness in the country.

**Children Left Behind**

Firstly, a great challenge for the state in this situation is the problem of children left home. The International Organization for Migration estimated that there are around 177,000 children under 18 left behind, which means that one out of every five children in the Republic of Moldova has a parent working abroad (Salah 2008).

The absence of parents has a negative impact on the moral and academic education of children, on their physical and psychological health. Parental migration implies a maximum stress for children aged 2-6, stress that causes the delay of both linguistic and general development. Migration also affects parents’ communication relationships with children, which is just episodic. Moreover, these children who did not feel the love of their parents when they needed it, who did not understand the essence of the family, would perpetuate the patterns of life they had known and experienced. Studies of the effects of parental emigration on the welfare of
children left behind from the Republic of Moldova show that they deal with a myriad of problems such as:

- lower school performance and school absenteeism;
- disturbance of appetite, painful headaches, abdominal pain, insomnia;
- the feeling of loneliness;
- the difficulty of joining a group of fellowship;
- depression and negative emotional states due to lack of affection;
- formation of an inadequate identity;
- higher incidence of consumption of alcohol and tobacco;
- aggressive manifestations of one parent or both parents;
- opposition and conduct disorder (Turchină 2009).

Furthermore, children left behind are more likely to have these kinds of problems in comparison with children who have their parents near them.

In the Republic of Moldova, around 20 percent of children left behind don’t go to school. They lack job opportunities and are more likely to develop psycho-emotional problems associated with an inferiority complex. Thus, in Moldova youth unemployment and juvenile delinquency persist. Also, migrants’ children are more vulnerable to drug use and labour exploitation. A study made by UNICEF showed that the increase in juvenile crime rates in Moldova was positively connected with the number of children left behind, who accounted for almost 60 percent of juvenile offenders (Cortés 2007).

**Risks for the European Union**

Another consequence of the emigration from the Republic of Moldova is the risk for the European Union. Since 2007, when Romania became a member of the European Union, the number of Moldovans who had Romanian passports, migrating to EU countries has grown significantly. They preferred to emigrate to countries like Italy, France, Greece, Portugal and Spain, because of higher wages, the chance to live among other Romanian language speakers or relatives and because of geographical proximity. Another salient pull factor that has caused the growth of emigration was the black economy in these states. Italy, the country with the highest number of emigrants, is the second most preferred state amongst Moldovan people. According to estimates from the Moldovan Embassy in Italy, there are 80,000 Moldovans residing there. However, the Italian estimate is 300,000 (Sabates-Wheeler–Black 2014). Moldovan emigrants help to create this black economy, which became a meaningful part of the Italian economy. Over the years, workers who do not have legal residency status formed a big
proportion of the workforce. They are considered “cheap workers” because they do not need any qualifications and they have to do the physically demanding work which nobody else wants to do. The areas where black economy is developing continuously are: domestic services, supply services, agriculture and construction. They are less structured, representing a risk for European Union.

A great number of emigrants from the Republic of Moldova, when coming to more developed countries, have their qualifications unrecognized or they do not have a work permit. This movement of so many illegal emigrants has a negative effect on working conditions and the economic structure of the country. Furthermore, there are not exact numbers that show how many children of the illegal Moldovans cannot attend local school because their parents are afraid of being caught and deported. Thus, now there is growing up a whole generation of illegal emigrants which remains uneducated. In Italy, the birth rate of the Moldovan emigrants is increasing by 20 percent per year. Consequently, they represent a danger for the state because more unskilled labour enters the job market.

**Less Efficiency in the Country**

Last but not least, the consequence of emigration from the Republic of Moldova is the decreasing efficiency in the country. Figure IV proves that a distinct feature of the emigration from Moldova is that a significant part of those who leave has a relatively good level of education: 28% of the total number of migrants graduated from higher education institutions and 63% graduated from high school or from vocational education institutions. Therefore, the “brain drain” phenomenon persists, which is defined as the migration of health personnel in search of a better standard of living and quality of life, higher salaries, access to advanced technology and more stable political conditions in different places worldwide (Dodani–LaPorte 2005).

Out of those who leave, intellectuals account for 18%. Before emigrating, they worked in Moldova as engineers, doctors, lawyers and economists. Thus, a significant part of high-skilled Moldovans is subject to “professional disqualification” when migrating, often being employed in low or unskilled work, because their studies are not recognized abroad. The intellectual exodus in Moldova does not necessarily become an intellectual gain for the destination countries but rather an intellectual waste for migrants. As a result, the Republic of Moldova becomes a cheap labour force provider, the phenomenon of brain drain is a problem, but there is no transfer of knowledge and technologies to the benefit of the preferred migrant countries (CIVIS, IASCI, 2010).
The problem of the lower levels of effectiveness in the Republic of Moldova is also caused by the phenomenon of the ageing population of the country. Over half of the expatriate workers are under age thirty, and eighty-eight percent are under forty-five, implying that workers in the prime age group were leaving the country. Thus, the demographic indicators are getting worse. Migration enhances the ageing of the country’s population, because young people are predominantly involved in migration. It should be noted that the coefficient of ageing reached the value of 15.7 approaching the critical value of 16, which shows a particularly advanced state of the phenomenon. According to World Bank forecasts, by 2050, as a result of the ageing phenomenon, the number of working-age population in the Republic of Moldova will be reduced dramatically, while the population which is older than 55 years old will be growing continuously, reaching 24% in 2050 (World Bank Moldova 2012).

Solutions

The country certainly does not want to see Moldovans going abroad and taking their families with them. Surveys show that few of them leave the country for good. Most of the emigrants had made this decision because it is an opportunity to earn money, in order to reach prosperity or to help their families to escape from the pressures of poverty. Indeed, the money sent back to Moldovans from abroad makes an important contribution to poverty reduction in the Republic of Moldova. Europe needs more workers, but it is not looking for having permanent emigrants. In this case, a comprehensive strategy should be developed, with organized legal circular migration which encourages people to return to their countries, thus creating a win-win situation for all parties. Understanding people’s experiences and needs can make a big contribution to the success of foreign policy issues.

Being asked in the questionnaire which can be the solutions for the Republic of Moldova to combat the problem of emigration and to motivate them to come back, Moldovan emigrants mentioned a few things: fighting with corruption, workplace improvement, raising salaries, more development opportunities, education system development and state support to the small and medium enterprises, thus creating more jobs. If these issues are to be dealt with successfully, it will be necessary to create better ties for Moldovans between the job markets themselves and demand-driven offers of employment. Another solution for the problem mentioned by Moldovan people was the implementation of some national projects that have the objective of economic growth and stopping migration. Actually, a project with this kind of objective already exists. The Moldovan Government has recognized the need for a coordinated
and integrated approach to manage migration through the National Development Strategy 2012–2020, which includes a focus on harnessing remittances and youth emigration. Moreover, it has 7 main objectives:

1. Aligning the education system to labour market needs in order to enhance labour productivity and increase employment in the economy;

2. Increasing public investment in the national and local road infrastructure, in order to reduce transportation costs and increase the speed of access;

3. Reducing financing costs by increasing competition in the financial sector and developing risk management tools;

4. Improving the business climate, promoting competition policies, streamlining the regulatory framework and applying information technologies in public services for businesses and citizens;

5. Reducing energy consumption by increasing energy efficiency and using renewable energy sources;

6. Ensuring financial sustainability of the pension system in order to secure an appropriate rate of wage replacement;

7. Increasing the quality and efficiency of justice and fighting corruption in order to ensure an equitable access to public goods for all citizens (International Monetary Fund 2013)

The focus of this Strategy is to produce a social and economic impact on each of the above-mentioned dimensions. This approach makes it possible to prioritize areas of state intervention and subject them to a clearly defined objective of the strategy: ensuring qualitative economic development and, implicitly, poverty reduction

Finally, with the hope that the project will have a considerable success, Moldovan people can be considered winners of their very first battle against emigration.
References


Abstract

Energy keeps us alive, it’s in and around us. It’s impossible to maintain the current level of development and welfare without energy. Looking back at our history, we may detect several attempts that failed to ensure sustainable energy supply. Why? From the start, we live in a world of scarcity. Moreover, the machine of creative destruction is restless. As a consequence, energy production fuelled by fossils is coming to an end. Based on waste management, this research is designed to clarify whether nuclear energy will be a sustainable energy source in the next 20 years. Nuclear energy is a divisive topic. In spite of this, I would like to present a pervasive but clear research. My methodological approach consists of primary and secondary research, quantitative (e.g. survey) and qualitative (e.g. interviews) methods. I would like to thank many people for being involved in the research. As Hungary is not well-endowed with alternative sources of energy and fossil fuels are depleting, the aim was to discover the potential of nuclear energy in Hungary. As a result of the research, the implementation of nuclear fission is crucial in order to sustain energy supply in the short term. It is important to emphasise the success of alternative energy sources. There is a possibility to follow the examples of Germany and Austria in renewable energy production in the long term. Thus, fossil fuels should be replaced by alternative energy sources in the next few decades. Therefore, as a pro-active thinker, I encourage you to think objectively because your opinion matters. Our choices define us and our future.

Keywords: Hungary, sustainability, nuclear, energy, waste

Introduction

Due to the Soviet pressure, the Paks Nuclear Power Plant was built to reduce Hungary’s energy import dependency. After the fall of the communist regime, as a ‘heritage’ of the Soviet era the power plant persisted to satisfy the hunger for energy. Arguments in favour of nuclear energy include cost competitiveness, low emission, readily available technology and high amount of output. Unfortunately, there may be direct and indirect damages caused by the nuclear power industry to all living organisms, the socio-economic dimensions and the environment, e.g. the
Chernobyl disaster, which was a consequence of the combination of flawed reactor design and human error. In spite of the threats, there is a huge clash of views. Nevertheless, no less than 454 civil nuclear power reactors have been operating around the world for decades. Furthermore, 54 reactors are being under construction.

Above all, I wanted to hear Hungarians about their opinions and obtain information on nuclear energy. I have found that, as long people don’t know enough about nuclear energy, there will be a need for investigating this topic. I also had a comprehensive conversation with András Perger, the Head of Climate and Energy Campaign of Greenpeace Hungary, who expressed serious concerns about nuclear waste management.

**Nuclear Energy in Hungary**

Nuclear energy is if obtained from nuclear fusion. The power output from the utilization of chemical and physical resources is called energy. Observing the energy production from 2001 to 2015 in Hungary, the proportion of fossil fuels is decreasing due to resource depletion. By contrast, the emphasis on nuclear and alternative energy tend to increase. (The Hungarian Central Statistical office 2017)

*Figure 1. Average energy production in Hungary from 2001 to 2015 according to the Annual Report of 2016 published by the Hungarian Central Statistical Office in 2017.*

Nuclear energy provided 52,7% of the national electricity consumption. (The Paks Nuclear Power Plant, Safety and Production Records, 2016)
Nuclear Fission

The Power Plant, based on 4 pressurised water VVER reactors, has been operating with extended lifespan. (The Paks Nuclear Power Plant, Safety and Production Records, 2016) Nuclear reactor is a system operating controlled chain reactions with the use of fissile material. The power plant produces large amounts of energy with almost zero emission. (Paks II, 2013) Each reactor consists of two circuits. The primary circuit’s roles are maintaining temperature and high pressure, producing steam and preventing the leakage of the coolant and boiling. The chain reaction takes place in the reactor core. Each reactor has an output of 500 Megawatts (MW). The secondary circuit converts energy of the circulating steam into rotary motion in order to ensure propulsion. The dry steam is transformed into water. The heated ‘feed water’ goes into the steam generator which is ready to receive the water. At the end of the nuclear fusion, nuclear fuel becomes nuclear waste. The components of nuclear waste are called fission products. Fission products contain radioactive isotopes. (The Paks Nuclear Power Plant, How does it work?, 2018)

Radioactive Waste Management

Nuclear waste is often identified with radioactive waste. The major producers of radioactive waste are isotope laboratories and power plants. I am focusing on the radioactive waste produced in power plants as they are responsible for the majority of its production.

The regulatory body of the Hungarian Nuclear Waste Management is the Hungarian Atomic Energy Authority which prioritizes Safety Assessments and supervises operations, safety culture and licensing procedures. (Hungarian Atomic Energy Authority, 2018) The purpose of waste management is to assess safety, handling, pre-treating, conditioning and waste disposal. Nuclear waste management is strictly regulated by protocols, legal acts, regulations and frameworks. See: IAEA or the Act CXVI of 1996 Atomic Energy. (Szücs, 2013)

In Hungary, two repositories recycle and store radioactive waste. From the two, the National Radioactive Waste Repository (NRWR) at Bátaapáti fulfils the requirements of the power plant and is being used for geological storage. It is a deep geological repository implemented in granite and is designed to cope with low and intermediate activity level waste for the long term and has interim storages designed for avoiding dissolvability. The most challenging task is the disposal of high-level activity waste. There is an ongoing research near Bátaapáti to open a new repository for high level waste. The NRWR uses burial methods in a deeply excavated facility
in compliance with the regulations and the operative laws. Liquid wastes, which solidarity in cement or bitumen are buried.

**Classification of Radioactive Waste**

MEAK means Exemption Activity Concentration in waste management. Low activity level is between 1 m³ MEAK and 10 m³ MEAK. Intermediate activity ranges from 10 m³ MEAK to 106 m³ MEAK. High activity level is over 106 m³ MEAK. (Fábián, 2015) Lifespan expresses the length of time for which radioactive waste decays to the half of its original value. Low and intermediate level radioactive wastes must be disposed in near-surface facilities to prevent harmful interaction with the environment. However, there are no facilities for final disposal of high-level waste. Conservation in pools, processing, vitrification and recycle by-products can also be used. There is also an ongoing research to store high-level waste in the long run. The estimated end date of the research is 2047. The final phase of waste management is conservation managed by deep geological disposal or recycling (Hegyháti, 2007)

**Issues in Radioactive Waste Management**

I am grateful to Greenpeace for having me for a conversation. However, every ecosystem is different, unshielded spent fuel may damage health, cause fatality, devastate the environment, the fauna and the flora. Jordan, 1896) Accidents can happen varying from excessive exposure to radiation, such as during the malfunction in the second block in Paks in 2003, (Szatmáry, 2003) to lethal consequences. Job hazards, long half-life, risk of error, diversity of chemicals and the lack of permanent disposal of high-level waste produce a number of challenges in radioactive waste management. András Perger, the representative of Greenpeace Hungary, warned of the accumulation of radioactive wastes that may take thousands of years to decay.

**Survey**

The survey was conducted on social media in May 2018. (Péntek, 2018) I used 6 multiple-choice questions and 5-point Lickert scales. The analysis involved 24 Hungarians aged from 18 to 67. Participants were given an unlimited amount of time to complete the survey. I would like to highlight the most relevant results

The participants were asked to rank their own knowledge on nuclear waste disposal from 1 to 5. (1 stands for ‘Very few’, 5 means ‘Very much’ knowledge.) 17% of the participants knew less than an average person about nuclear energy. 58% opposed the expansion of the power plant, 17% agreed with it and 25% of people had no opinion about it. No participant thought nuclear energy alone could be the solution for energy production. 75% of the respondents would
only use renewable energy. 25% of the participants would consider both of these to maintain our needs in a sustainable way. 50% of the respondents claimed they were aware of the financial burden of Paks II. 75% didn’t know how long high-level nuclear wastes remain dangerous. Only 37% were aware of scarcity of long-term and safe repositories in the world. 58% have already heard about the risks of low- and intermediate level nuclear wastes, while 60% of the participants were aware of the hazards of nuclear energy.

**Another Way - Renewable Energy in Hungary**

Renewable energy alone cannot replace nuclear energy and fossil fuels in the short-term, because it has limitations in producing large quantities. (Mayer, 2014) However, alternative energy is developing rapidly, so further infrastructure developments will shrink the remaining technology gap. No doubt renewable energy promises a bunch of opportunities. By 2020, renewable sources of energy will have significantly increased. Biomass is projected to provide 60.97 Petajoules (PJ), biogas: 4.63 PJ, hydropower: 0.86 PJ, geothermal energy: 16.43 PJ, heat pump 5.99 PJ, solar energy 3.73 PJ and wind power: 5.56 PJ. (Deputy Secretariat of Stat, 2010)

*Figure 2. Distribution of renewable energy sources used in electricity and heating and cooling sectors by 2020*

*Source: National Renewable Energy Action Plan*

**Conclusion**

The question is not whether we should use alternative or nuclear energy to sustain energy supply. On the one hand, there are plenty of examples for success: European power plants have been operating safely for many decades. Moreover, the next-generation nuclear innovations are about to improve power plants. (e.g. the molten-salt-cooled design prevents Chernobyl-like disasters). On the other hand, Germany and Austria are successful in replacing nuclear energy.
The main issue is that most people tend to see things in black or white: they think you are either totally for renewable energy or against it. The truth is it’s easy to say you support alternative energy but it’s difficult to eliminate nuclear energy.

The fact is, Hungary shouldn’t be pressured to dump nuclear energy or be urged to comply with other countries’ standards. Hungary is not Austria or Germany, especially after being a satellite state for decades. Other handicaps: the history of being an ex-Soviet buffer state, the lack of Marshall aid, industrial backwardness, indebtedness, being an underdeveloped region in the EU, less favourable macroeconomic indicators, and difficulties after the financial crisis. Increasing expenditures to shift from nuclear to renewable energy overnight would put Hungary at a disadvantage. As our neighbouring countries (Romania, Slovakia, Ukraine) are still using nuclear energy, the elimination of it in Hungary wouldn’t save us from the most feared outcomes. If there was an international consensus on elimination of nuclear energy, there would be a rational reason to follow certain international examples.

In conclusion, I would like to evoke the Golden Rule. We mustn’t rely on either nuclear energy or on renewable energy too much. Indeed, our number one rational threat is called climate change fuelled by fossil fuels. Hungary should embrace alternative energy and keep on using nuclear energy in the short-term. The most sustainable decision for Hungary would be to gradually decrease its dependency on fossil fuels in favour of nuclear and alternative energy. In the long-term, the country should be committed to develop and secure the predominance of renewable energy.

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