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MASTER'S THESIS

**BARRIERS TO IMPLEMENTING ENVIRONMENTAL SOLUTIONS
IN DEVELOPING COUNTRIES: A FIELD STUDY IN GHANA**

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LIST OF ABBREVIATIONS

sl. – Slovene

AfCFTA – (sl. Afriško območje proste trgovine); African Continental Free Trade Area

CSR – (sl. družbena odgovornost podjetij); corporate social responsibility

ESG – (sl. okoljski, družbeni, upravljalni (vidiki)); environmental, social, governance

EU – (sl. Evropska unija); European Union

GIIN – (sl. Globalna mreža socialnih investitorjev); Global Impact Investing Network

HDPE – (sl. polietilen visoke gostote); high-density polyethylene

LDPE – (sl. polietilen nizke gostote); low-density polyethylene

NGO – (sl. nevladna organizacija); non-governmental organization

PET – (sl. polietilen tereftalat); polyethylene terephthalate

PP – (sl. polipropilen); polypropylene

SDGs – (sl. cilji trajnostnega razvoja); sustainable development goals

UN – (sl. Združeni narodi); United Nations

UN DESA – (sl. Oddelek za ekonomsko-socialne zadeve Združenih narodov); United Nations Department of Economic and Social Affairs

INTRODUCTION

With an increasing awareness of the impact that human activities have on the environment, the topic of environmental changes has become increasingly researched throughout all scientific disciplines. After observing the extensive impact our growing species has on the planet, a new term of Anthropocene was formed to describe the new epoch in the Earth's history (Crutzen, 2002; Rockström et al., 2009; Steffen, Crutzen & McNeil 2007). The epoch in which “the human activities have become so pervasive and profound that they rival the great forces of Nature...(and in which) the Earth is rapidly moving into a less biologically diverse, less forested, much warmer, and probably wetter and stormier state” (Steffen, Crutzen & McNeil, 2007, p. 614).

Scientists suggest we have moved from Holocene to Anthropocene around 300 years ago. They identify three stages of the current epoch. Stage one, named The Industrial Era lasted from c. 1800 to 1945. Stage two, named The Great Acceleration extends from 1945 to c. 2015. Stage three of the Anthropocene might be starting right now. It represents the time where humanity acts on its awareness and focuses on stewardship of the Earth System. Recently, for example, we are seeing the adoption of environmental, social and governance factors (hereinafter ESG factors), corporate social responsibility (hereinafter CSR), and the rise of impact investing which is a type of investments that puts impact first and financial profits second. This process of routinely considering the environment in political and economic calculations presents the third stage of the Anthropocene (Steffen, Crutzen & McNeil, 2007).

Some phenomena such as greenhouse warming and rising sea levels are global in scope, while some problems are more regional and specific to areas with particular characteristics. Developing countries, emerging economies, third world, and global south are loose terms describing the countries characterized by the combination of relatively high levels of poverty and relatively low levels of industrialization. The presence of multiple challenges related to poverty and underdevelopment therefore characterise the appearance and magnitude of environmental problems as well. Consequently, the environmental situation in these areas is more complex and the mitigation of one problem area often requires the mitigation of another related area as well.

The Republic of Ghana is a nice example of a genuinely developing country. Its democratic political system and relatively strong economic growth have made it one of the most developed countries in Africa and a regional superpower in West Africa. It is a country where industrialization and poverty-related problems can be observed. Ghana is also a very safe, politically stable and English speaking country. These factors combined make it a great entry point to Sub-Saharan and West Africa and a perfect destination for pilot projects and field research related to various understudied subjects present in the area (Gocking, 2005; World Bank, 2020).

Throughout history, humanity has been solving societal problems using various approaches, and mitigating environmental issues is no different. The main objective of environmental solutions and other mitigation pathways is to lessen the human pressure on the Earth System to avoid difficult-to-control and dangerous rates of change (Schnellhuber & Cramer, 2006). Mitigation approaches include environmental impact-focused projects, updated management, improved technology, control of human and domestic animal populations, attentive use and restoration of the natural environment, and ultimately the wise use of all the planet's resources.

Technological advancement must play an important role. For example, total worldwide energy consumption is equivalent to only 0.05% of the solar radiation that reaches the Earth (Haberl et al., 2006). But technological changes itself may not be enough. Consumer behaviour changes and changes in societal values will most definitely be necessary to push the dematerialization trends and move our globalizing society into a more sustainable one. Hence regulations play a strong role and the ban and taxation of plastic bags in recent years is one such example. Interestingly, Africa leads the world in plastic bag regulations. Across the world's poorest area, Sub-Saharan Africa, 31 countries have adopted taxes or bans on plastic bags (UN Environment, 2018).

Another approach of mitigation is the implementation of environmental projects where existing technology is either used in novel ways or implemented in new areas where such solutions do not exist, most often in underdeveloped countries. Non-governmental or non-profit organizations (hereinafter NGOs) are perhaps the most well-known for such endeavours. Non-profit organizations focus on impact-oriented projects with usually no financial returns and financially depend on grants and charities. They are an important agent in implementing environmental solutions and driving changes by constantly fighting an uphill battle and overcoming unenviable barriers to serve their beneficiaries. Recently however, they have been receiving a lot of criticism, pressuring them to measure and demonstrate the impacts of their actions (Arvidson & Lyon, 2014).

Impact metrics are at the core of another agent of change, social entrepreneurship, sometimes also referred to as eco, environmental or sustainable entrepreneurship. These entrepreneurs aim at achieving multiple objectives by integrating economic, social, and environmental goals directly in their business plans - oftentimes the impact being the most important one (Konys, 2019). Alongside innovation, entrepreneurship has been recognized as a key element for achieving sustainable development goals (hereinafter SDGs) by the United Nations (UN, 2018). But despite the growing interest and activities in this field, the academic literature on environmental entrepreneurship, its limitations, potential and barriers, is still in a nascent stage (Filser, Kraus, Roig-Tierno, Kailer, Fischer, 2019).

For successful implementation of environmental solutions, the appropriate financial support is crucial. This is the first obstacle that any NGO or social entrepreneur must overcome. While many traditional, socially-neutral investors only strive to maximize their risk-adjusted

returns, there is an increasing number of socially-motivated investors who are willing to accept lower financial returns to produce societal benefits. This growing subarea of investing is referred to as impact investing. The Global Impact Investing Network (GIIN) defines impact investing as investments made with the intention to generate positive, measurable social and environmental impact alongside financial return (GIIN, 2020). This emerging and growing investment sector is the main driver and supporter behind many environmental solutions in the last decade (Brest, Gilson, Wolfson, 2018).

In order for these solutions to be successful, all project leaders must first overcome numerous barriers, whether anticipated or unforeseen. The financial barrier is just one of many and perhaps the most obvious one. The world that we live in is becoming ever more complex, unpredictable, and confused. The complexity of local problems and global challenges such as climate change, water crisis, poverty, food quality, and the environment cannot be solved using narrow, single-dimensional approaches. Governmental, business, scientific, social, natural, and political spheres have become very interdependent. And out of interdependencies arise complexity and uncertainty (Maani, 2017).

Generally mentioned implementation barriers for projects in developing countries include lack of infrastructure, corruption of local governments, low educational levels, poverty, and cultural differences (Bellamy, 2015; Olsen & Boxenbaum, 2009). However, other barriers, specific to implementing environmental solutions in West Africa also encompass lack of awareness, lack of operational capacity, and lack of stakeholder support (Totin et al., 2015).

In the relatively unknown territories of developing countries, researchers, entrepreneurs, and project leaders will inevitably find themselves in many unforeseen situations. Their success in implementing their solutions, and therefore making a positive impact, will depend on whether they will react accordingly or not. The success rate in such situations can be increased by barrier anticipation and consequently adequate preparation.

The research question that forms the basis for this thesis is »What are the barriers to implementing environmental solutions in developing countries?«

The aim of this thesis is to provide guidelines to social entrepreneurs, NGOs, impact investors or for-profit companies who are entering, or are planning to enter the unfamiliar emerging markets with their environmental projects. The terminal motive of the thesis is to increase the success rate of environmentally oriented projects and impact investments in developing countries. My wish is that the insights and perspectives gathered from the field research in Ghana and in conjunction with further theoretical research will also support my Ghanaian friends who are doing tremendous work in making their country and capital city of Accra a clean and healthy environment. Moreover, I hope that it will likewise benefit other developing countries on their path towards improving sustainability.

The three predetermined goals of this master's thesis are as follows:

Goal 1: To **identify barriers** to implementing environmental solutions in developing countries.

Goal 2: To **describe and categorize** the identified implementation barriers.

Goal 3: To **provide recommendations** for overcoming the identified barrier categories.

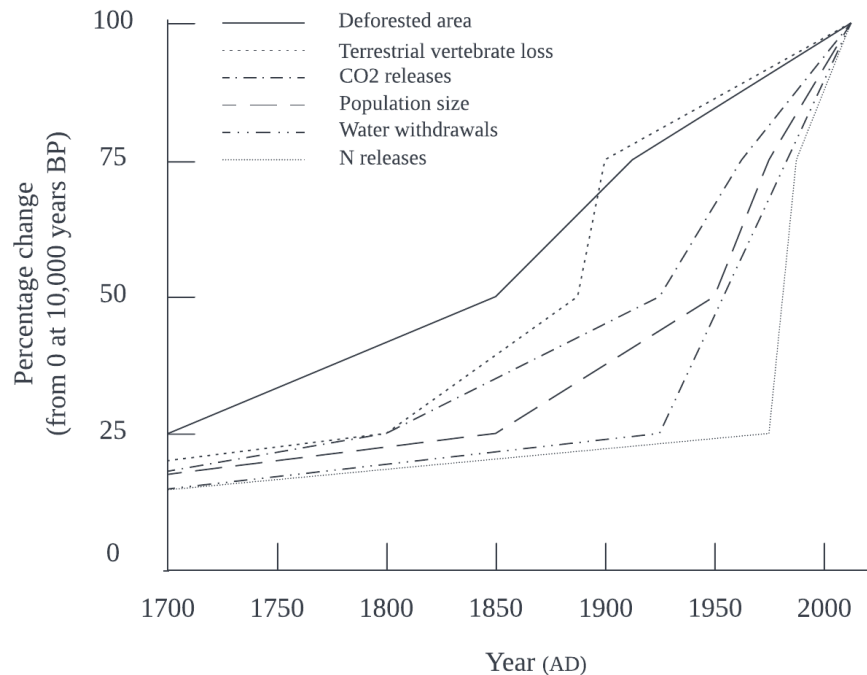
The thesis consists of two parts: the theoretical part, based on secondary data and the empirical parts, based on primary data from the field study. In the theoretical part of the master's thesis, I use the descriptive method to provide an overview and analysis of multiple documents, articles, and literature, foreign and domestic, on topics of environmental problems and stakeholders who act as mitigators of these problems. In the empirical part of the master's thesis, I describe the field study and present the findings.

In the first chapter of my master's thesis, I describe the global environmental challenges and the specifics of environmental problems in developing countries. Then I explain the human effects on the environment in the current era, known as Anthropocene. In the second chapter, I elaborate on the environmental problems of four stakeholders and their mitigation efforts. I describe the role of governance, non-profit organizations, social entrepreneurs and impact investors in tackling environmental problems. In the third chapter, I describe the characteristics of the field study, selection of the country for the study and multiple research methods that I have used throughout the study. I also provide examples of how observations and interviews have been conducted and under what circumstances. In the fourth chapter, I present the results from the case study. I present categories of implementation barriers with observed cases from the field. Observational findings are complemented with quotations from the interviewees. In the final and fifth part, I discuss how barriers are intertwined and present practical implications of findings. I offer my recommendations for overcoming the observed barriers and present a tool for social entrepreneurs or other field workers to assist them in a timely forecast of potential barriers for their projects in developing countries.

1 ENVIRONMENTAL CHANGES IN THE ANTHROPOCENE

The environment has always been changing. Never have the changes been so rapid and dramatic as in the last 50 years. Figure 1 shows the percentage change of six indicator parameters of environmental changes. The indicator begins at zero percent 10,000 years ago (before present = BP) and shows a dramatic increase of change in the extents of deforested areas, loss of biodiversity, the increase of CO² releases, the increase in human population, the increase in water withdrawals and the increase of nitrogen releases in recent decades. The study suggests that more has changed in the last one or two generations than during the previous 10,000 years since human started affecting the environment.

Figure 1: Percentage change (from assumed zero human impact at 10,000 BP) of selected environmental changes



Source: Goudie (2013).

1.1 Anthropocene: human activities as the dominant force in nature

Humans have been changing the environment for ages. Six major events of human transformation of the environment are described as the use of fire, development of language, agricultural revolution, development of cities and states, European conquest, and the technological-scientific evolution with fossil fuels as dominant source of energy (Takács-Sánta, 2004).

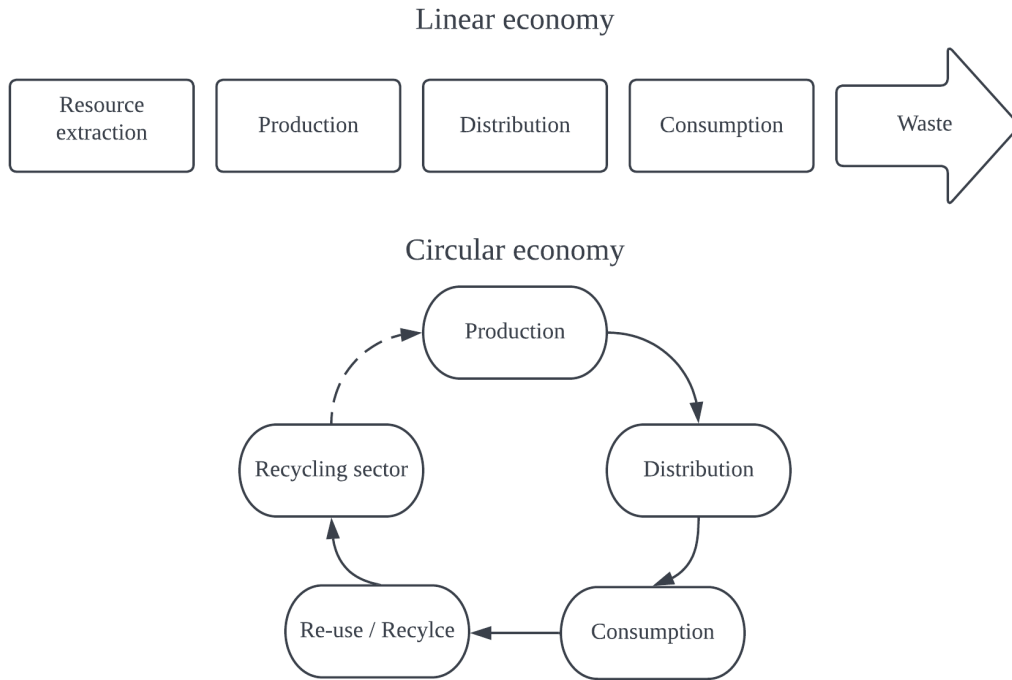
Before the industrial revolution, the human race was insignificant on a global environmental level. Life expectancy was just over 40 years. The child mortality rate was greater than 10% and the total population was approximately one billion. The lifestyle was very humble. Feeding the family took a lot of time. A small percentage of individuals were educated and an even smaller percentage of people was able to travel the world. The global anthropogenic impact of less than one billion people was negligible. Today, the human race is a global force on our planet. We are changing our planet on a global level, which means that the consequences of our behaviour are visible, not only in a local environment, but around the Earth. Even the most remote places on the planet have been affected, the North and South Poles for example, are no exception. We are constantly changing every aspect of the living environment; land and oceans, air and biosphere. These vast and rapid changes result in complex, intertwined and difficult to solve global problems (Kajfež-Bogataj, 2016).

Anthropocene describes an “epoch which started about three centuries ago in which the power of humans has become a global geophysical force” (Goudie, 2013, p. 341). The three broad approaches influencing the changes in this era will be Business-as-usual, Mitigation, and Geo-engineering options. In which direction and how far humankind will go remains largely unclear. Geo-engineering is controversial, risky, and distant, while mitigation is oftentimes still dwarfed by its older and bigger brother business-as-usual. The latter two, however, present the main agents in the anthropocenic environmental change field (Steffen, Crutzen & McNeil, 2007).

Humanity has made several big and foolish mistakes throughout history. Ignorance and short-sightedness is simply a natural state of evolving human beings, both on an individual as well as on a collective level. One fundamental example of this is building the world and the world economy on a linear economy model with the hope of eternal industrial growth. In a closed system of Earth, with limited resources, we set up a model that fundamentally relies on infinite resources and the basic arithmetic does not add up. We now know that and we are capable of quantifying it and calculating it (Goudie, 2013; Kajfež-Bogataj, 2016).

The linear economy model presumes building materials are infinite. It also presumes the waste management systems have no boundaries. We now know that this is not the case. We understand the volume of the Earth is limited and so are minerals contained in its crust. We know that the surface of the Earth is limited, as are the resources on the Earth. Today we understand that the air and water bodies, our most fundamental supporters of life and our most exploited waste disposals, are also finite. These storages of primary life materials, and secondary waste materials, can be stretched to their limit. Not only that we can measure that, we can also feel it. We have released so much CO² and other green house gasses in the air body, the atmosphere, that this waste is now covering our planet like a blanket, preventing the heat to evaporate into space, and keeping our planet (too) warm. In winter this blanket melts the snow and in summer it creates heat waves, floods, draughts and storms. This is how the planet’s air and water bodies react to our waste which is largely a consequence of the linear economy and consumeristic culture (Goudie, 2013; Kajfež-Bogataj, 2016). Figure 2 shows a scheme of linear economy, compared to the proposed alternative of circular economy that requires a systemic shift of how we deal with resources, products, and waste.

Figure 2: Linear vs. circular economy models



Source: Geissdoerfer, Savaget, Bocken, Hultink (2017).

1.2 Types of environmental problems

The global environmental problems can be divided into two groups, cumulative and systemic. Systemic problems appear more or less uniformly around the biosphere and affect the entire planet or whole continents. The cumulative global problems appear as a combination of multiple local and regional changes. These are so severe and widespread that they become a global problem. The examples of environmental problems as described by Kajfež-Bogataj (2016) and Rockström et al. (2009) are listed in Table 1.

Table 1: Examples of systemic and cumulative global environmental problems

Type	Examples
<i>Systemic processes at planetary scale</i>	Climate change
	Ocean acidification
	Ozone depletion
<i>Cumulative processes from local/regional scale</i>	Deforestation
	Freshwater depletion
	Biodiversity loss
	Chemical pollution
	Plastic pollution

Source: Kajfež-Bogataj (2016) and Rockström et al. (2009).

The environmental problems addressed in developing countries by social entrepreneurs and NGOs generally fall into the category of cumulative changes. These issues are globally widespread but local, so there is also a need to tackle and solve them locally, one-by-one, and using different approaches that are adapted to the local environment (Bornstein & Davis, 2010; Lenox & York, 2012).

One example of a global cumulative problem that was practically non-existent even a generation ago is the plastic pollution problem. Plastics are a group of man-made materials produced from oil and natural gas and can be regarded as one of the most important technical achievements of the last century. Due to its resilience, flexibility, and affordability plastics have permeated all aspects of our life, accelerated many inventions and replaced many materials in existing products. However, because of its low economic value once disposed, we largely refuse to collect it, recycle it, and reuse it. Our economic model prefers to save a few pennies on every product and consequently plastic pollution has penetrated into all areas of our planet and truly became a global problem (Geyer, Jambeck, Law, 2017).

Plastics in the form of small particles called microplastics have been found everywhere: on Antarctica (Leistenschneider et al., 2021), on Mount Everest (Napper et al., 2020), in Mariana Trench (Jamieson et al., 2019), in honeybees and fish (Edo et al., 2021; Prata, Da Costa, Duarte, Rocha-Santos, 2022), in human lungs and blood (Jenner et al., 2022; Leslie et al., 2022), and in the placentas of pregnant women and unborn babies (Ragusa et al., 2021). Microplastics are in our food, in our drinking water, and in the air we breathe (Cverenkárová, Valachovičová, Mackuľak, Žemlička & Bírošová, 2021; Gasperi et al., 2018; Novotna et al., 2019). Researches estimate that we consume about 250g of microplastics per year, or about a credit card's worth of plastic each week (Senathirajah al., 2021). We know microplastics kill millions of animals (Isangedighi, Gift & Ofonmbuk, 2018; Roman, Schuyler, Wilcox & Hardesty, 2021), that they decrease fertility in mice (Jin et al., 2021), and that they are harmful to our health (De-la-Torre, 2020) but we do not know what exact consequences such exposure means for us in the long term (Campanale, Massarelli, Savino, Locaputo & Uricchio, 2020). Through 2015 humans have produced approximately 8,3 billion tons of plastic, of which 6,3 billion has become plastic waste. Over 90% of this waste is not recycled but dumped into the environment. If the trends continue it is estimated that by 2050, 12 billion metric tons of plastic waste will be disposed to landfills and natural environment, which is about 35,000 as heavy as the Empire State Building (Geyer, Jambeck & Law, 2017).

1.3 Environmental problems in developing countries

UN Department of Economic and Social Affairs in least developed countries employs the next metrics that are distinctive for these areas: instability of agricultural production, instability of exports of goods and services, share of agriculture, hunting, forestry and fishing in GDP, victims of natural disasters, child and maternal mortality, malnutrition, secondary

school enrolment, adult literacy, and gross national income. Other common challenges present in many developing countries also include political instability, internal conflicts, high crime rates, human rights issues, substandard slum residential areas, low life expectancy, poor access to water and sanitation, energy issues, and high levels of pollution. Neither developed countries are intact by these problems, however, the scale and impacts of these issues are notably more limited (UN DESA, 2010).

Perhaps the most simple and sound definitions of developed and developing countries comes from a former Secretary-General of the United Nations and a Ghanaian diplomat Kofi Annan who defined a developed country as "one that allows all its citizens to enjoy a free and healthy life in a safe environment", and described a genuinely developing country as "one in which civil society is able to insist, not only on material well being, but on improving standards of human rights and environmental protection as well" (UN, 2000, 10).

In developing countries, environmental problems arise in two classes (Bowonder, 1987).

- 1) Problems caused by underdevelopment, such as
 - a. deforestation due to fuelwood collection,
 - b. lack of toilets and sanitation,
 - c. lack of protected water supply,
 - d. unhygienic settlements,
 - e. overgrazing,
 - f. non-existent recycling infrastructure, and
- 2) problems caused by activities aimed at economic development, such as
 - a. pesticide residues,
 - b. effluents and emissions from industries,
 - c. excessive use of single-use plastic products,
 - d. waterlogging from irrigation projects

The environmental situation in developing countries is significantly more complex than in developed countries because of the simultaneous presence of these two conflicting classes of problems (Bowonder, 1987).

The plastic pollution issue is one such example where widespread poverty and underdevelopment vastly contribute to the occurrence of the problem (Ampofo, 2015). Most people who live in poverty are paid in cash on a daily basis and more than three billion people in developing countries live on less than US\$2.50 per day. Consequently, they only purchase what they need at that particular time and in order to meet this need, corporations are entering these markets with bottom-of-the-pyramid strategies (Epstein & Rejc Buhovac, 2017). In practice that means selling incredibly cheap products in small plastic packaging, oftentimes intended for single use and disposal. While this makes perfect business sense, it makes little environmental sense. Developing countries do not have established waste management and recycling systems. Therefore, the vast majority of single-use plastic

packaging ends up on the streets and in the drains. Clogged drains with plastic waste are the main reason for city floods in Accra, Ghana. Moreover, clogged drains increase the spread of cholera, and, because they provide a great habitat for musquitto breeding, they also increase the spread of malaria (Ampofo, 2015).

1.4 Business-as-usual as a driver for environmental change

In the last decades multinational corporations have grown immensely powerful. Approximately 25% of the world's wealth is now in the control of the wealthiest three hundred corporations. Their managers frequently make decisions that are opposing the long-term interests of the public. The problem arises because corporations enjoy the legal status of a person but they are free from ethical, social, and legal forces that otherwise drives good behaviour of a real person (Bakan, 2005). Corporations are ultimately self-interested and widely unrestricted by public disapproval, empathy, and the threat of imprisonment, as oppose to the individuals that create them. However, some law social entrepreneurs are now also trying to change that to ensure more sustainable and fair practices of multinational corporations. For example, slavery was possible and somehow acceptable a few decades ago, yet today, majority of companies no longer engage in such practices. The idea is, to come to the point where businesses routinely consider, actively manage, take full responsibility, and maximize their efforts towards minimizing their negative impacts on communities and on the environment (Krosinsky & Robins, 2008).

Four methods of how companies can improve their social and environmental impact, while also improving their economic performance have been described (Lehni, 2000):

- 1) Redesign the product or service. In order to and make it more sustainable by the usage of different materials or more efficient modes of transportation for example.
- 2) Re-engineer the process. In order to reduce pollution, reduce energy consumption, and reduce costs.
- 3) Create more but use less. By engaging in zero-waste or cradle-to-cradle concepts with the aim to increase recycling and reusability of products.
- 4) Rethink the market. In order to differentiate and find new customers who are willing to pay premium for more ethical and sustainable products.

As we are dipping into the planet's endowment of resources, depleting the fuels, minerals, fresh air, and clean water, it is also essential that governments, investors, corporations and all mankind learn how to operate within this existing capacity. And as corporations play a very significant role in that equation, it is essential to change their behaviour (Krosinsky & Robins, 2008). With the introduction of CSR concepts, ESG factors, and various more ethical and more impact-focused forms of investing, these areas are now slowly changing. The business consciousness about social and environmental impacts is now more strategic than philanthropic. Ninety-five percent of the largest multinational corporations are now

measuring and reporting publicly about their environmental and social impacts (Epstein & Yuthas, 2014).

2 MITIGATION OF ENVIRONMENTAL RISKS IN DEVELOPING COUNTRIES

To challenge complex environmental risks and achieve major impacts an idea must have supporting drivers in the system. The stakeholders within the system must provide the energy, resourcefulness, care and passion if they want to develop the idea, shift behaviours and regulations, overcome apathy and opposition and fundamentally increase the justice and sustainability for current and future generations. The process can be incredibly complex and long-term (Bornstein & Davis, 2010).

The stakeholders of mitigation focus on social impacts, which are societal and environmental changes that are created by regulations, activities and investments. The social impacts includes subjects like poverty, health, justice and equality, while environmental impacts focus on the areas of resource depletion, energy use, climate change, environmental health, conservation and waste management among others (Epstein & Yuthas, 2014).

However, introducing major and lasting change withing the established systems, against habitual behaviours and in the face of widespread apathy has always been incredibly challenging. Nearly five hundred years ago, Machiavelli (1532, p. 17) observed: “It ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new. This coolness arises partly from fear of the opponents, who have the laws on their side, and partly from the incredulity of men, who do not readily believe in new things until they have had a long experience of them.”

In the next subchapters, I describe the regulations, non-profit organizations, social entrepreneurs and impact investors as drivers of change and mitigators of contemporary environmental risks and describe the challenges and barriers they need to overcome to achieve major societal and environmental impacts.

2.1 Governance

Regulations and legislations are a way through which a country guides and limits businesses and investors into making more sustainable business decisions. Through regulations, the governing institutions ensure balance between economic, social, and environmental development (Etzioni, 2009). Developing countries are often characterized by weak

governance and also criticized for implementing foreign environmental regulations that are not adaptive to the regional environment (Ahorbo, 2014; Osborn, Cutter & Ullah, 2015).

The pressure in the form of formal and informal rules applied to companies is ever-growing and it comes from different stakeholders (Krosinsky & Robins, 2008).

- Legal pressure comes from regional, national laws, international laws and institutions such as the United Nations (UN), European Union (EU), the Kyoto Protocol and the Foreign Corrupt Practices Act (FCPA), and the Organisation for Economic Co-operation and Development (OECD).
- Professional pressure comes from widely accepted business practices, sector rules and guidelines as well as certification organizations such as International Organization for Standardization (ISO)
- Best practice pressure comes from regional, national or international standards such as Global Reporting Initiative (GRI), the Carbon Disclosure Project, and Responsible Care. These guidelines are non-binding, but may influence the customer's or shareholders' decision making.

The opponents of external regulations argue that they hinder innovation and development. The advocates of external regulations argue that the absence of enforcement, together with the loopholes in the existing policies, is a path to exploitation of the environment and common goods (Etzioni, 2009; Meghani & Kuzma, 2011; Pautz, 2010).

From the environmental perspective, the regulations are raising the bar of ethical and sustainable decision making in the business world by trying to prevent over-exploitation of limited resources and increasing global equity among others. Environmental policies and legislations aim to protect public interest, which is often not the primary goal of businesses (Meghani & Kuzma, 2011; Pautz, 2010).

Not all development and financing actions are pushed by the regulations. Some stakeholders are already years ahead of the regulations. These stakeholders serve as a good example and push regulators towards new and more sustainable alternatives. In a recent survey performed by GIIN, a leading impact investing community, only 9% of respondents stated “meeting regulatory demands” as a very important factor of motivation for making impact investments (GIIN, 2020). However, traditional, profit-driven investors and corporations would certainly provide different answers to this question and consequently the regulations primarily aim to change behaviours within this lagging and major sector.

2.2 Non-profit organizations

Non-profit organizations can broadly be divided into those that are primarily member-focused, such as clubs, and those that are purely social impact-focused, such as charities (Epstein & Rejc Buhovac, 2009). This thesis focuses on the latter. This group, with focus on

external problems, encircles the NGOs that are directly solving environmental challenges in developing countries.

NGOs are characterised by their focus towards accomplishing social and environmental objectives and this orientation is the fundamental part of their mission statement. Additionally, NGOs are bound by the constraint of nondistribution of financial profits which means they need to re-invest all profits back into their mission-focused activities (Helmig, Ingerfurth & Pinz, 2014).

NGOs are primarily funded by public grants and individual or corporate donations. They are an important driver for social and environmental injustice mitigation, especially in circumstances where financial returns from a project are not possible. In such scenarios, NGOs that are not pressured with financial outcomes outperform social entrepreneurs and impact investors (Helmig, Ingerfurth & Pinz, 2014). Because these NGOs are not used to producing financial returns they have difficulties in obtaining the inflow of social capital made available by the impact investment industry (Phillips & Johnson, 2021).

In order to stay relevant and increase their impact, successful NGOs do not just serve. They are also active advocates and initiators of grassroots programs (Crutchfield & Grant, 2008). Therefore they are making the change through their direct actions as well as by pressuring the governments into changing the regulations, effectively making the change from the bottom-up, and from the top-to-bottom. They also inspire other people, members and non-members, into acting upon a meaningful common cause. Furthermore, they describe that successful NGOs are very adaptable and modify their approach based on external factors like political environment, public opinion, contemporary risks and funding opportunities that are available.

On the other hand, for-profit companies, where the main goal is to maximize profits, which is fairly easy to measure, the goals in the non-profit enterprises are often challenging to measure. The ultimate indicator of success in the non-profit sector is the realization of mission objectives (Epstein & Rejc Buhovac, 2009). Inability to measure these impacts and objectively evaluate the success of projects and investments is arguably the main criticism of NGOs, and a challenge that I further describe in the subchapter entitled "Stakeholder barriers to mitigating environmental risks in developing countries" below.

2.3 Social entrepreneurs

All enterprises have social and environmental impacts, some positive and some negative. Social entrepreneurs put their utmost focus into maximizing the positive impacts of their enterprises and minimizing their negative impacts (Bornstein & Davis, 2010; van Dijk, Hillen, Panhuijsen & Sprong, 2020).

Social entrepreneurship is a concept and a process by which individuals create enterprises or transform existing ones to advance solutions to social and environmental problems, in order to improve the life of many. Social entrepreneurs innovate, adapt, find new opportunities, create communal value, leverage resources, act boldly, and exhibit a strong sense of accountability (Bornstein & Davis, 2010). The role of a social entrepreneur is one that moves society from a stable but inherently unjust equilibrium to a new, stable equilibrium, that alleviates suffering on a major scale (Osberg & Martin, 2007).

As a species, we are tackling numerous social and environmental problems with good ideas and effective models. At some level, we are tackling all of the most pressing global problems, and in the developed countries all of these problems are solved to a certain degree. Yet what we do not know, is how to combine these pieces of knowledge and implement the solutions at the scale of the problems we are facing. Because of the presence of many other issues related to underdevelopment, implementing such project is even more challenging in the developing countries (Bornstein & Davis, 2010).

Furthermore, social enterprises act as important and influential drivers for the sustainability transition. Through their actions, they are proving the possibilities of sustainable business models and providing inspiration for others. They are raising the awareness about the problem and raising the norms and values about how problems should be tackled. They are offering jobs with purpose, offering meaningful alternatives and supporting the growing sector of impact investing. And they are raising the professional standards through voluntary agreements, certifications and labelling as well as acting as advocates toward establishing policies and regulations that increase inclusiveness and sustainability (van Dijk, Hillen, Panhuijsen & Sprong, 2020).

2.4 Impact investors

Investments and finance play a crucial role of translating theory into practice and of solving the initial financial barrier for many social entrepreneurs and NGOs. Based on their goal and approach, we can broadly categorize investments on a continuum from those that focus purely on financial returns on one end, to those that focus purely on social returns on another end (Krosinsky & Robins, 2008).

- Traditional investment focuses entirely on the financial yields and puts absolutely no consideration on environmental, social, and governance factors.
- Responsible investment still focuses primarily on financial yields, but also considers ESG criteria which in practice means that it will not invest in ethically or environmentally questionable industries. This criteria varies on individual and institutional level, but it regularly excludes investments in military, tobacco, alcohol, pornography, fossil fuels, etc.

- Socially responsible & green investment puts focus on financial performance while financing only sustainable developments. These investments usually invest in mission-driven for-profit enterprises such as certified B Corporations.
- Impact investment puts primary focus on measurable social impacts and secondary focus on financial returns. It accepts competitive and below market capital returns. It strives to maximize impacts per dollar, and it invests in a selection of enterprises according to their social and environmental impact. Money from impact investments is also called patient capital, and this type of investments is the main type of funding for social entrepreneurs.
- Philanthropy seeks no financial returns and invests purely in social and environmental goals. Financially speaking it is a donation, yet socially speaking, it is an investment into potential solutions. Along with grants, it is oftentimes the main income of NGOs.

The last two categories, impact investing and philanthropy are the main financial drivers of social enterprises and NGOs, respectively, driving solutions in the social and environmental area. Impact investing in many regards outperforms philanthropy as it puts significant focus into measuring actual outcomes of investments. At the same time, in many situations, such as crisis situations or alleviating biodiversity loss, financial returns cannot be expected and therefore philanthropy also play a different but crucial role (Krosinsky & Robins, 2008; Ngoasong, Paton & Korda, 2015).

The Global Impact Investing Network (GIIN, 2020) defines impact investing with four core characteristics which are intentionality, the use of evidence and impact data, measuring impact performance, and contributions to the growth of the industry. Impact investments are defined as an investment type that strives to intentionally create sustainable social and environmental impacts for communities as well as to provide adequate financial returns to investors (Ngoasong, Paton & Korda, 2015).

Impact investors provide distinct financial benefits to their investees. Examples include: investment with expected below-market rate returns, pledges with loan assurances, positions deemphasizing equity and debt positions, patience with longer terms before exit, purpose with flexibility to customize investments based on the enterprise's needs and perspicacity, a process of seeing opportunities where traditional investors do not (Brest & Born, 2013).

Furthermore, impact investing primarily aims at funding inclusive small and medium-sized enterprises, which target bottom-of-the pyramid (BoP) markets. The objectives are commonly to improve the access of fundamental goods and services to poor and marginalized communities in the least developed countries (Koh, Hedge & Karamchandani, 2014).

Billions of dollars are invested into projects and enterprises in low income countries with the goal of alleviating poverty and environmental risks. The largest portion of impact investments targeting developing countries goes to Africa as the continent accounts for 27 out of 34 of the worlds least developed countries (Koh, Hedge & Karamchandani, 2014).

The industry is also on the rise as 21% of GIIN annual 2020 survey respondents considered impact investing as “about to take off”, 69% of respondents considered it as “growing steadily”, and 0% of respondents thought that the industry was in decline. Furthermore, between the years 2015 and 2019, the investments among the GIIN respondents grew at a compounded annual rate of 17% (GIIN, 2020).

2.5 Empirical research on barriers to mitigating environmental risks in environmental countries

The research part of this master’s thesis is focused on the implementation barriers that social entrepreneurs and NGOs might face in developing countries, a topic on which not a lot of research has been done. However, many other barriers and challenges that impede the mitigation of environmental risks by this same stakeholders have been observed and researched (Bellamy, 2015; Bolis, Sahan, West, Irani & Nash, 2017; GIIN, 2020; Phillips & Johnson, 2021).

It is believed that the strength of the impact investing sector will play a major role in the global ability to fulfill the United Nation’s SDGs by 2030 (GIIN, 2020). However, even though the impact investing sector has grown substantially in recent years, the effects of it have fallen short of initial expectations. The narrative is now changing as research has found that it is not the problem of supply, of the investors, but rather a problem of demand, of the investees. Hence, instead of the investors’ willingness to provide capital, the main part of the financial barrier seems to be the lack of readiness and absorptive capacity for such capital by social enterprises, NGOs, and charities (Bolis, Sahan, West, Irani & Nash, 2017; Phillips & Johnson, 2021).

The assumption that once impact capital is available, the social enterprises and NGOs will be ready and lined up, has turned out to be incorrect, especially for NGOs, who prefer to rely on funding sources that do not require repayable finance (Bolis, Sahan, West, Irani & Nash, 2017).

Barriers to participation in impact investments are as follows (Phillips & Johnson, 2021):

- 1) Capacity requirement, determined by the readiness, size, maturity, and strategy of the investees.
- 2) Lack of knowledge about the impact investment characteristics, as potential investees are not fully familiar with the concept and requirements of impact investments.
- 3) Financial literacy, is another knowledge gap as impact investors weigh their decisions on sophisticated business strategy, financial forecasts and feasibility studies.
- 4) Social impact and evaluation, a cornerstone of impact investments, is often a problematic topic on the field and many social organizations struggle to define and measure their impacts.

5) Regulatory and policy barriers, that would follow-up with new investment styles and the occurrence of social enterprises are often cited as major barriers to the development and success of these sectors.

Research in Africa found similar results. Impact investors complained that informal sector entrepreneurs are ignorant of the investor requirements, are not able to justify the size and characteristics of target markets, lack fixed assets and are not able to provide adequate track record of their actions and outcomes (Ngoasong, Paton & Korda, 2015).

Social entrepreneurs have difficulties in complying with government reporting requirements and are sometimes reluctant to take advantage of available grants. To qualify for funding, they may sometimes need to reshape their venture to comply with the mandatory standards. The philanthropists on the other side are often more flexible but they each have their own reporting formats and unique application procedures which makes fund raising time consuming and expensive (Bornstein & Davis, 2010).

Additionally, financing is often not directly linked to the impacts and therefore mediocre organizations with long history or strong branding take the advantage compared to newcomers or organizations that achieve good results and put less resources in branding. The funding can also be unpredictable. In addition to patient capital from impact investors are very short-term investments with an average grant term of one year. Proponents of social entrepreneurship also argue that if social entrepreneurs would be able to access large amounts of long-term growth capital, such as other businessmen do, they would also be able to create multi-year growth plans, have enough time to make mistakes, evaluate their efforts and adjust their strategies and consequently produce more stable enterprises (Bornstein & Davis, 2010).

The main criticism of NGOs pertains to their inability to measure the accomplishments towards their mission. Even with a defined and specific mission to follow, which is oftentimes a challenge of its own, the success of some missions is more difficult to measure than the others, for example protection of biodiversity or reduction of poverty are two very complex areas to measure (Epstein & Rejc Buhovac, 2009; Helmig, Ingerfurth & Pinz, 2014). Yet if the venture is not able to effectively measure and communicate their impacts, they cannot apply for the growing impact investments where such measures are fundamental as they act as a reason of why investors are accepting lower than market rates of return (Reeder, Colantonio, Loder & Rocyn Jones, 2015).

Another major challenge for social enterprises targeting developing countries and bottom-of-the-pyramid markets is the skill and knowledge gap among locals. Participants in the research across African countries expressed that it is mostly only foreigners or nationals with western education and experience who launch or manage social ventures in Africa (Ngoasong, Paton & Korda, 2015). The locals, with no history abroad, lack managerial experience needed to manage such ventures and they do not know what investors want, how

to develop and implement a business idea and how to spot opportunities in the first place. Once this knowledge gap is addressed with training and technical advice, we can expect a profound increase of social venture run by locals who have an advantage as they are already familiar with the social and environmental problems their countries are facing.

3 FIELD STUDY ON ENVIRONMENTAL SOLUTIONS IN GHANA

3.1 Role of the researcher

When conducting research in a country that is so vastly different from one's home country, a researcher is constantly alert, working and observing the situations. There is so much going on in the environment and so much new information can be observed or listened to that can be crucial for the success of the field study or success of the entrepreneurial project.

Even when I was just having a walk, or having a casual chat with a local on the street, I was always learning new things about the place and about the culture. I was fully immersed in the environment and quickly became fully absorbed in the research. It even became difficult to turn off the researcher role completely and to just unwind. This issue is further described in the Personal barrier.

Preparation & acclimatization. In order to be efficient in a limited time period of a study, the field worker needs to prepare for what is coming upfront. That includes preparing a study design, interview guides, lists of areas one wants to visit and of topics that one will observe, as well as learning about the culture and about the area where one is heading to (Crump, 2020). I did that by reading, having a few video chats with Ghanaians, and watching news and videos about Ghana. All that helped me tremendously. However, as I came there, I quickly realized that nothing was exactly as I had expected. Everything was different; from city streets and transportation, to waste dumpsites and slums. It took me an additional few days to get accustomed to navigating the area efficiently. It is impossible to be completely prepared for a field study, yet both the preparation and the acclimatization phase were crucial for my later field work.

Focus on the plan & goals. The researcher on the field needs to be well prepared and focused on the goals and tasks ahead. This is even more important in an exotic country because of all the distractors and unforeseen events unveiling in a foreign environment (Crump, 2020). The principal goal of my fieldwork was to examine potential opportunities and barriers for implementing a plastic waste collection enterprise in the area. As stated earlier, this thesis focuses on the observed barriers.

This goal was then dissected into many specific points of observation and interview topics. For example; what is the level of plastic pollution, which areas are the most polluted (streets

or coastlines in different regions), what are the existing plastic collection and recycling solutions (legal, illegal, gray zone), what are the prices of plastic waste and plastic pellets at different stages, how much do waste pickers earn and how does their workday look, what is the perception of plastic waste by public and different stakeholders, what are the consequential bigger applications and problems of extensive plastic waste problem, and what are the different areas where we could hit a barrier in the future. Finding answers to these questions served me as the compass for all my explorations, observations, and discussions.

Based on these topics, I then prepared my interview guides and observation guidelines. I prepared an overview of the monthly plan prior to my trip. Once I was in the field, I designed a more detailed day-to-day plan on a weekly basis, that included exactly what I would do in the forthcoming mornings, afternoons and evenings, whom I would meet and interview and which areas or topics I would focus on in my observations. Being assertive in specific situations in order to achieve my goals while always being respectful to a different culture and the participants was challenging but essential.

Building rapport. Building rapport as quickly as possible is essential to obtaining insightful answers. Achieving rapport between the field worker and the participant will likely positively influence the validity (Crump, 2020). I made two of the most important local connections in the first days while I was strolling around Accra and absorbing the place. Two drummers approached me to show me their art shop and after a short drumming lesson, the conversation shifted to what I was doing in Accra. The plastic waste problem was substantial in the area, so they were very interested in the conversation. They shared their views on the problem and explained to me that a waste collection point was just behind the corner, but very hidden. I would never have found it by myself. As it turned out, these two local artists later opened multiple new doors for me, from showing me the hidden collection point, to arranging multiple interviews with the locals I never would have met, but who perfectly fit my participant criteria. Similarly, building rapport with local business consultants and social entrepreneurs opened new opportunities for me to get closer to the problem and collect precious insights from various people and areas. Being open and passionate about the problem also opened a door to one of the municipalities, where I could discuss the waste situation with a municipality major and other heads of departments. Later, they even provided me a municipality driver and a guide, who took me to the hidden and problematic waste dumpsites so I could get a thorough understanding of local plastic collection & the recycling problem and gray zone businesses.

Flexibility. Working in the field and working with the people can be very unpredictable and chaotic by itself. That is even more apparent in an exotic environment with a different culture. Often, the events do not unfold as anticipated by the researcher (Bernard, 2011). I needed to account for that and be ready that my meeting or the interview might easily begin with a one-hour delay. Punctuality is a cultural thing. I needed to be flexible with time, schedules and my daily plans.

Communication is not always completely clear, which can put the researcher into an uncomfortable and unexpected situation in which one needs to quickly adapt. One such example happened when I had a scheduled meeting at the municipality. I did not expect that I would have a discussion in the mayor's office, with five different department heads and with the mayor himself sitting in a golden or gilded throne. It was a surprising situation, and I had to quickly find the most appropriate way to communicate and to adapt the prepared questionnaires and a meeting plan. Flexibility in the field is also described as controlled opportunism which allows the researcher to take advantage of the uniqueness of a specific case and if needed also alter the data collection in order to document the emergence of new themes or to improve resultant theory (Eisenhardt, 1989).

Objectivity. A field study worker needs to avoid making any judgments about specific cases (Hegelund, 2005). As a researcher, I had to stay away from judging people on dimensions like morality and social or environmental behavior. For example, when observing or interpreting a negative environmental behavior, it was important to not make quick assumptions based on the personal preconceptions but instead to consider the broader cultural environment and personal circumstances of a participant. At the same time, however, I needed to critically observe any cultural differences that could potentially have had a negative impact on the implementation of the project.

Subjectivity. In my writings, I stick to the interpretivism paradigm of research. I believe it is substantially more practical and realistic for my research topic than positivism. Interpretivist approach believes that the researcher influences and affects the research. As opposed to the objectivists approach, the researcher is a part of the research itself. The interpretivist approach believes that the pure observational objectivity is neither possible nor desirable and. The researcher in the case study is therefore part of the production knowledge (Creswell, 1994).

Ethics. Because of the proximity to the participants and exposure to the natural environment, I was able to gain a deep understanding of the research subject. One of the main rules of fieldwork is that "every single data collection act in the field has an ethical component, and a fieldworker is obliged every single time to think through the ethical implications of data collection acts" (Bernard, 2011, p. 325). Personally, I always had in mind that I should not push a participant into the position where he or she would feel uncomfortable with either my interview questions or any of my observations.

It is important that a researcher does not treat people as objects for data collection, but as informed subjects with written or verbal consent for participation and willingness to help the study (Jorgensen, 1971). I have informed all the participants with whom I have been in contact that I am doing a field study to examine the potential opportunities and barriers for implementing an environmental project that is focused on excessive plastic pollution.

A field ethnographer should protect participants from psychological, physical, social, legal or any other kind of harm and ensure participants privacy (Jorgensen, 1971). Extensive plastic pollution in the area is a major, sensitive and partially unaddressed and unsolved subject, especially in politics. A substantial part of the waste management industry operates in the gray zone and relies on questionably legal practices. Because of the sensitivity of the topic, I have decided to omit all personal and institutional names from my thesis. I do that in order to protect the anonymity of the participants and to not put anyone in an uncomfortable position.

The rule that I followed throughout the fieldwork and throughout writing this thesis was to do no harm to any individual and not to harm collectively, neither to the Republic of Ghana, city of Accra with all its municipalities, or any businesses operating in this industry. The research instead aims to give back to the research site, provide insights from an outsider, open new ideas and start new discussions.

3.2 Participants

To get a comprehensive overview of the occurring plastic waste problem, plastic recycling industry and other existing but unofficial solutions in the area it was important that I talked to a very diverse group of people. The research participants included:

- plastic waste collectors,
- plastic waste-collection-point managers,
- business consultants,
- social entrepreneurs,
- founders and representatives of environmental NGOs,
- municipality mayor and department heads,
- slum dwellers, and
- various other locals.

I have given a small financial support to the participants living in poverty for their contribution. This was never agreed or demanded prior to the interview, but always happened on a completely voluntary basis after the interview and therefore minimizing any effects of the contribution on the interviewee and the content of the interview.

I was generally looking for English-speaking participants to limit the language barrier. With less educated participants, this was not possible, so on a few occasions I was accompanied by a local who helped me with the translations.

3.3 Research sites

Data collection process took place on various locations in the greater Accra region. Interviews were conducted in various formal and mostly informal settings, depending on the participants' wishes and the circumstances. Below is the list of diverse sites where I have conducted interviews:

- on the sidewalk,
- in a slum,
- in a beach bar,
- in a guarded private school restaurant,
- in a shopping center,
- in public schools,
- on illegal garbage dumpsites,
- on plastic collection points,
- in business restaurants,
- in the middle of trashed plastic chair piles,
- in a plastic recycling factory,
- in a taxi,
- in a municipality mayor's office,
- on the world's largest electronic waste dumpsite.

3.4 Research method and design

This subchapter describes the key characteristics of the research that shaped the study design as well as specific research methods. Alongside theoretical descriptions I also add my examples and describe situations in which a specific technique has been used.

My thesis draws data from a four-week field study that took place in Ghana during May and June 2019. I conducted field study as part of the Plastic Project Ghana which was supported and financed by a social impact incubator based in Malta and Rome. Ghana was selected as a central country for all projects in the incubator due to its political stability, prevalence of English language and the presence of common problems related to developing countries. The project's goal was to set up as a social enterprise focused on alleviating problems of excessive plastic pollution and problems of extreme poverty in developing countries. It would do so by formalizing plastic-waste collection jobs, establishing plastic waste collection points, and organizing efficient and legal plastic recycling chains. The business aim of the field study was to assess the feasibility of implementing the pilot project in Accra region, the capital of Ghana. This was accomplished by examining the potential barriers and opportunities in the region. This thesis, however, focuses exclusively on observed barriers.

The project, that had since been terminated, had three team members; a woman from Russia who did not participate in the field study, a woman from Slovenia who participated in the field study, and me, who was appointed as team leader and who also participated in the field study. Additionally, an incubator founder and a fund manager were occasionally mentoring us but were not involved in the field study. My role in the field study was to define research topics and questions, define participants and areas of interest, craft instruments and protocols, and then navigate in the field and conduct numerous on-site data collection techniques that I describe later in this chapter.

Throughout the study, I applied qualitative research methods such as interviews and observations to collect data on the field, therefore the study falls into the category of qualitative research. As described in the chapter, "Role of a researcher", I was following the interpretivist paradigm, which perceives the world as subjective reality where the researcher interacts with what is being researched (Creswell, 1994).

The whole research is characterized with the field study attributes. Field study is a research type in which the data collection process happens in the field, rather than in a controlled environment (Bernard, 2011). In order to collect the data, I traveled to Ghana, where I spent one month collecting data. I held a few video calls with Ghanaian social entrepreneurs and NGO representatives before I traveled to Ghana to arrange some in-person meetings. I also had a few video calls with people from Ghana after I left. I still keep in touch with some participants with whom my relationship later developed into friendship. Apart from this, the vast majority of collected data comes directly from observations and face-to-face interviews I have conducted during the field study in Ghana.

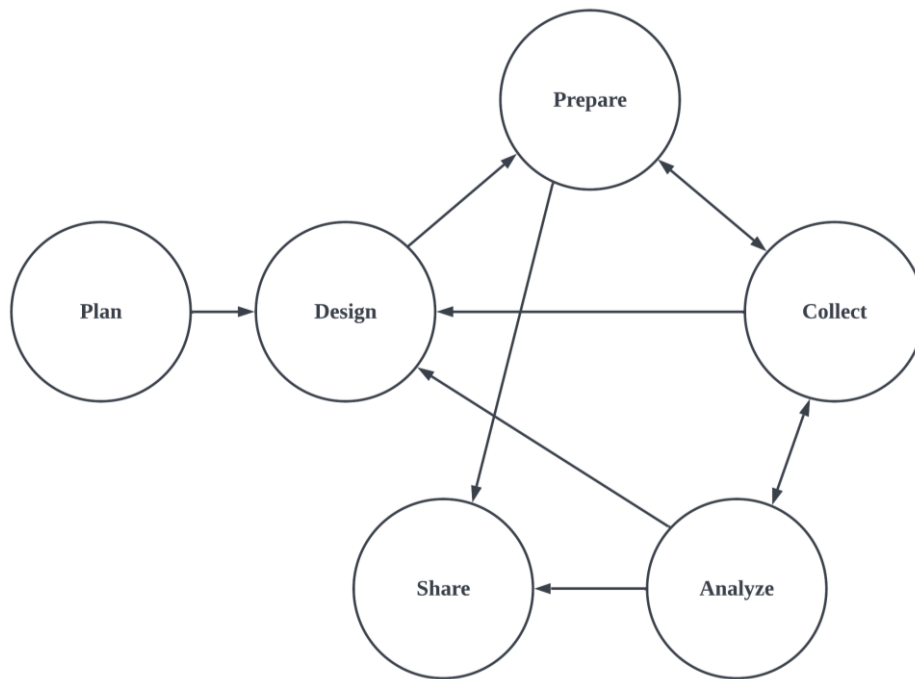
Part of my mission was to get a thorough understanding about the plastic waste collectors as they play a major connecting role in the plastic recycling process. Therefore, the study and this thesis are also characterized by the attributes of ethnographic research. I observed participants in their daily life and we discussed the issues in their natural environment. To fully understand the unsolved obstacles, I needed to understand their lives, attitudes, and everyday problems. For example, I conducted the interviews while they were picking plastic waste on the street and when they were collecting or sorting plastic waste on the coastline that was covered with tons of ocean debris. To further understand extreme poverty and waste problems, I visited slums and went to the biggest electronic waste dumpsite in the world.

Ethnographic field research comes with challenges and advantages. For example, it can be very resource, time and energy consuming. These and other challenges are presented in the chapter limitations of the study. There are many advantages of ethnography in field research, however, as it provides deep insights about the social structures and serves as a powerful tool to understand the world better (Tshabangu, Ba' & Madondo, 2021).

The study is also characterized with the characteristic of a case study, which is a study that investigates a contemporary phenomenon in depth and in its real-world context. Among

other forms of social research like experiments, surveys, histories or archival analyses, the case study method is the preferred method in situations when a researcher has little or no control over behavioral events, and the focus of the research is a contemporary phenomenon. This method is further characterized by the opportunistic usage of data collection techniques, triangulation of the data from multiple sources and the linear but iterative process, which is illustrated in the Figure 3 (Yin, 2014).

Figure 3: Case study research process: a linear but iterative process



Source: Yin (2014).

Unlike lab studies where the researcher is able to fully control the environment, field studies, and particularly field studies in an exotic environment, demand flexibility from a researcher. Depending on foreseen and unforeseen circumstances, I relied upon different techniques to collect the data based on how they best suited the participant and the environment.

All methods were applied with a very specific goal in mind. The goal was to research whether Ghana, specifically the region surrounding the capital, Accra, was culturally, politically and environmentally a suitable region in which to implement the environmental and social project aimed at plastic pollution and poverty. In other words, I was exploring the potential barriers and opportunities for project development. Exposure to contrasting environments, connection with diverse people, and the usage of different research methods were my cornerstones to getting valuable information from various sources.

All data gathering techniques in the qualitative field study can be grouped into two kinds of activities: watching and listening. A researcher can talk to people and get them to tell him things or he can observe the people and the environment (Bernard, 2011). Research methods

were selected based on the study design and circumstances on the field. Opportunistically, an additional technique was added during the field study. Triangulation of data was achieved by combining different sources and different research methods.

Observational research is a non-experimental and correlational type of research in which a researcher observes the surroundings and behaviors. This is in contrast to experimental research where there is no quasi-artificial environment, no control for spurious factors, and no manipulated variables. It is conducted in the natural environment of the phenomena. Observational research is typically divided into nonparticipant and participant observation (Bernard, 2011). I have used one or another observational method based on the circumstances. Both types are described with examples below.

Most of my interviews were conducted face-to-face during the field study in Ghana and I conducted a few online interviews in the period before or shortly after the field study. Depending on the participant and the setting, I used more or less structured and formal interviewing formats, which are described with examples later in this subchapter.

3.4.1 Participant observation

In participant observation, the researcher intervenes in the environment, becomes part of the group or takes up a specific role in a community. That is done by building a rapport in the community and by fully immersing oneself in the field site. It is aimed at observing behavior that otherwise would not be accessible. Still, the behaviors remain relatively natural which gives the observations high external validity. Participant observation is commonly used to explore and understand social norms, interactions, common practices, values, and social relations. It is used to gain a deeper cultural understanding as the aim is to gain an insider perspective in addition to an outsider perspective (Yin, 2014).

The goal of my field study was not just to conduct academic research. Instead, I went to Ghana to observe the potential barriers and opportunities for implementing a social business project. I have made the observations and the interviews not only as a field researcher, but also as a social entrepreneur. I built the rapport with NGOs, entrepreneurs and consultants even before arriving to the field study, and I conducted interviews and meetings as a social entrepreneur. Being a young, white social entrepreneur, coming from the West gave me a specific perspective. That was my insider perspective into the cultural differences and other observations from which I source many findings of this research. It is the perspective of a foreign social entrepreneur in a developing country, which I believe carries a high external validity for many future social entrepreneurs planning to implement an environmental project in a similar environment.

As our project with foreign investments had the goal of bringing positive changes for the environment and local communities in Accra, I was well accepted and experienced generous support and guidance. This support was particularly strong from the employees in one of the

more progressive municipalities of Accra. After meeting with the municipality mayor and his team, and presenting the problem we were trying to research and the solutions we were trying to bring, they arranged a jeep with a private driver and a private guide for me. They took me around the municipality the next day. The full immersion and the insights that followed would probably have been unlikely had it not been for my participatory social entrepreneur role.

By being fully immersed into the plastic pollution and extreme poverty problems, and by working on finding the solution in these areas, I was able to immerse myself into the industry and the local politics. Many of the observations I interpret in the findings therefore source evidence from this particular insider's experience

3.4.2 Nonparticipant observation

Direct observation with no participation, also known as naturalistic observation, is characterized with no intervention by the researcher and no attempt to manipulate any of the variables. It is simply watching, observing, and studying behaviors that occur naturally in the natural context. It requires detailed observation and it allows measuring behaviors or situations as they really are. The limitation, however, is that it rarely provides insights into the actual causes of these occurrences. Therefore, it is beneficial to combine direct observations with different interviews (Yin, 2014).

I was mainly using this observational technique to examine various locations and determine the levels of plastic pollution, development and poverty. Furthermore, I have used it at all times when I was not in the proximity of any of the participants of the study. I was able to observe the surroundings incognito thereby not revealing my true role as either social entrepreneur or a researcher. These observations did not provide deep insights into the topics, but they provided with a wide spectrum of numerous observed factors I could then include in my participant observations and interviews.

3.4.3 Informal interviewing

Informal interviewing is a type of interview in which the researcher exercises zero amount of control over people's responses. The researcher is also not adding any structure to the conversation. It can be deceptive as it looks and feels like the usual chitchat. Informal interviewing in a field study occurs all the time and at any possible place - in homes, waiting for a bus, hanging out in bars or walking along the street. Different interview types produce different types of data and are consequently useful for different types and stages of a research projects. In fieldwork, informal interviewing is generally used at the beginning of participant observation when the researcher is settling in. It requires lots of active listening, remembering conversations heard during the day, and then jotting down important data. Informal interviewing throughout ethnographic fieldwork is commonly used to build greater

rapport with the participants and to uncover additional topics of interest that might have previously been overlooked. When circumstances allow, it can also be combined with other more structured methods (Bernard, 2011).

During my initial conversations with people I met randomly in casual places, I often tried to briefly mention the problem of plastic pollution and observe their reaction. That allowed me to slightly shift the conversation and observe what would happen. I paid special attention to people's perspectives and pain points about the problem, as well as to the missing puzzle pieces in my understanding of the plastic waste accumulation and recycling processes. Moreover, I also used informal interviewing to determine appropriate participants, with satisfactory knowledge of English and a good understanding of a certain problem related niche, that I could later invite for a more structured interview.

3.4.4 Unstructured interviewing

Unstructured interviewing is a more formal way of interviewing where the researcher has a clear plan constantly in mind, yet he still exercises a minimum control over participants' responses. There is nothing deceptive in this type of interview and the participant knows that he or she is being interviewed. There is no mutual feeling that you are just engaged in a usual chitchat. It is useful in situations where a researcher wants the participant to open up and freely express themselves and their points of view. The lack of structure and control that characterizes this type of interviewing means that it can be truly versatile. It also requires lots of time, which might not be ideal in certain situations and with overly busy participants (Bernard, 2011).

This type of interview is perfect for people who would otherwise not tolerate a more structured and formal interview, or in cases where structured interviewing would feel somehow unnatural. On the other hand, it can also be useful for building rapport before moving to more formal types of interviewing. That is also how I used this method on several occasions. Oftentimes, I started with an unstructured interview during which a participant would open up and tell me about his lived experience. Only then would I introduce additional questions and gently move into a semi-structured interview.

3.4.5 Semi-structured interview

A semi-structured interview is open-ended but follows a prepared script and covers a list of prepared topics. Semi-structured interviewing is ideal for situations when a researcher does not have more than one chance to interview a person in the field. It offers the freeriding freewheeling qualities of unstructured interviews, but has a more specific direction and structure provided by the interview guide. The interview guide is a prepared list of topics, questions and sub-questions that needs to be covered during the conversation (Bernard, 2011).

The method works well for a wide spectrum of different participants as it shows to the participant that you are fully in control of what you want from an interview, yet it leaves enough space for the interviewee and the interviewer to follow new leads and discover new relevant areas that have not been discovered before. Semi-structured interviewing is a scheduled activity and serves as an effective use of time for both parties. It shows that the researcher is prepared and competent, yet he or she is not excessively controlling the conversation (Denzin & Lincoln, 2018).

This is the most structured interview method I have used, and I could only conduct it when circumstances allowed. That was possible only when I had built enough rapport with a specific person, or when, as a result of networking, I had a very good local connection who then introduced me to a specific person and explained my mission, for example, with a waste collection point manager.

A great example of a semi-structured interview took place on a sandy soil coastline, about 150 meters from all other barracks and about 150 meters from the coast. We hid from the scorching sun behind a tiny wooden construction of only one square meter. This was the participant's office. I was expecting a small group interview, but only the manager showed up. A simple man in his 30's was a link between individual waste pickers and the buyers of specific types of segregated plastic waste. He understood the whole part of the plastic collection chain, including prices, wages, demands, and many accompanying problems. He did not speak English, so I was accompanied by two locals who helped me with translations. We finished the interview in about one hour and then continued with a walk to the coast where collectors were earning their living. I was able to walk surrounded by thousands of plastic bottles and other debris from the ocean and observe collectors as they were collecting and sorting specific types of plastic bottles they could sell further.

3.4.6 Group interview

Group interviews can be informal, taking place in the field setting and resembling a casual group discussion, or they can be formal with a specific purpose and structure. Two different styles can be assumed by the interviewer. In one, the researcher is passive, non-directive and acts as an interviewer-observer, asking minimum questions required to keep the discussion active. In another style that I have used, the researcher is active and involved with the direction of the interview. This role is less appropriate for spontaneous settings and more appropriate for formal settings or preset settings in the field, like in my example. Group interviews also serve as an efficient use of resources and they can be beneficial for validating data collected in previous one-on-one interviews (Frey & Fontana, 1991).

I had several informal group interviews. I held meetings with several people, and I conducted one formal semi-structured group interview. I did not plan to conduct the formal group interviews before the field study, as I had not foreseen that I would have the opportunity to sit with several participants at the same time. However, with the help of my two most

resourceful connections in the field, I was able to arrange an interview at the plastic collection point with four informal workers. They have been collecting plastic bags in Accra for a living for several years. I brought some snacks and water pouches, and I set up the audio and video recordings of the discussion. I started with small talk and unstructured interviewing and then shifted towards a semi-structured interview. We discussed the plastic collection and recycling chains as well as their job position and the associated problems. The participants' knowledge of English was basic, and therefore two locals were helping me with translations as needed.

3.5 Field study timeline

The timeline of the data collection events is presented in Table 2. As shown in Figure 3 (see page 24), the case study research is a linear but iterative process, which means that a portion of the data collection, preparation, evaluation and analysis were also conducted during the field study itself.

Table 2: Timeline of field study research

DAY	DATE	ACTIVITY	PARTICIPANT	PLACE
0	15.5. – Wednesday	Arrival		Accra city
		Informal interview	Taxi driver	Taxi
1	16.5. – Thursday	Direct observations		Accra city center
		Direct observations		Accra market
		Direct observations		Accra art center
		Direct observations		Informal plastic collection and sorting point
		Informal interview	Taxi driver	Taxi
		Informal interview	Two artisans who became main local project assistants	Accra art center
2	17.5. – Friday	Direct observations		Jamestown slum
		Direct observations		Labadi beach
		Unstructured interview	NGO focused on empowering street children	Jamestown slum
		Informal interview	Social entrepreneur upcycling plastic waste	Labadi beach

*Table continues

*Continuing

DAY	DATE	ACTIVITY	PARTICIPANT	PLACE
		Unstructured interview	Local knowledgeable about plastic pollution 1	Labadi beach
		Unstructured interview	Local knowledgeable about plastic pollution 2	Labadi beach
3	18.5. – Saturday	Cultural immersion & Exploration		Accra city
		Direct observation		Kokrobite beach
4	19.5. – Sunday	Informal interviews	Locals	Accra city
		Cultural immersion & Exploration		Accra city
5	20.5. – Monday	Informal interviews	Locals	Accra city
		Cultural immersion & Exploration		Accra city
6	21.5. – Tuesday	Informal interviews	Locals	Accra city
		Direct observation		Accra city
		Direct observation		Illegal dumpsite 1
		Direct observation		Illegal dumpsite 2
		Direct observation		PP ¹ plastic collection point
7	22.5. – Wednesday	Direct observation		Accra city
		Direct observation		Labadi beach
8	23.5. – Thursday	Direct observations		Accra city
		Direct observations		Accra coastline
		Direct observations		HDPE ² & LDPE ³ plastic collection point
		Direct observations		PET ⁴ plastic collection point
		Direct observations		PP plastic collection point

*Table continues

¹ Hard, sturdy and flexible type of plastic that can withstand high temperatures, used in plastic furniture, car parts, and yoghurt containers. Accepted in many recycling centers.

² Highly resistant and relatively hard type of plastic used for grocery bags, shampoo bottles, lids, etc. Accepted at most recycling centers, and one of the easiest plastic polymers to recycle.

³ Thin, flexible, and transparent type of plastic, used in single-use bags, single-use containers, dispensing bottles and plastic wraps. Very cheap to produce and rarely recycled.

⁴ Widespread type of plastic due to its strong ability to prevent spoiling the product inside. Widely used for food packaging and beverage bottles. It is the most widely recycled type of plastic.

*Continuing

DAY	DATE	ACTIVITY	PARTICIPANT	PLACE
		Semi-structured group interview	4 HDPE & LDPE plastic collectors	HDPE & LDPE plastic collection point
		Semi-structured interview	PET plastic collection point manager	PET plastic collection point
9	24.5. – Friday	Unstructured interview	Social entrepreneur upcycling plastic waste	Labadi beach
		Semi-structured interview	PP plastic collection point owner	PP plastic collection point
10-13	25.5. – Saturday 28.5. – Tuesday	Cultural immersion, Evaluation, Rest		Outskirts of Accra
		Informal interviews	Locals	
14	29.5. – Wednesday	Semi-structured interview	Social entrepreneur in plastic recycling business	Accra city
15	30.5. – Thursday	Direct observation		Old Fadama slum
		Informal interview	Plastic collector	Accra city
16	31.5. – Friday	Business meeting & unstructured interview	Local business consultants	Accra city
		Unstructured interview	Founder of a local environmental youth NGO	Online
17	1.6. – Saturday	Direct observation		Accra market
		Direct observation		Jamestown slum
		Direct observation		Nima slum
		Unstructured interview	Nima slum resident & our guide	Nima slum
18	2.6. – Sunday	Rest		
19	3.6. – Monday	Meeting & semi-structured group interview	Mayor and 5 municipality department heads	A municipality in the Accra city
		Unstructured interview	Representative of a youth environmental NGO	Accra city
20	4.6. – Tuesday	Direct observation		Illegal dumpsite 3
		Direct observation		Illegal dumpsite 4
		Unstructured interview	Municipality guide	Car
		Semi-structured interview	Owner of plastic bags recycling factory	Plastic bags recycling factory

*Table continues

*Continuing

DAY	DATE	ACTIVITY	PARTICIPANT	PLACE
		Unstructured interview	Director of a primary school	Primary school 1
		Unstructured interview	Director of a primary school	Primary school 2
21	5.6. – Wednesday	Semi-structured interview	Representative of an NGO tackling plastic pollution	Accra city
22	6.6. – Thursday	Direct observation		Agbogbloshie, world's largest electronic waste dumpsite
		Unstructured interview	Worker and our guide at Agbogbloshie	Agbogbloshie
		Informal interviews	Plastic collectors at Agbogbloshie	Agbogbloshie
22-28	7.6. – Friday 12.6. – Wednesday	Explorations of rural areas		Central and northern Ghana
29	13.6. – Thursday	Departure		Accra city

Source: Own work.

3.6 Data collection

During the interviews and observations in the field, I collected data by writing notes, through photography, and by making audio and video recordings. Below, I briefly describe different techniques I have used as described by (Bernard, 2011).

- Field jottings are very short and condensed notes that are jotted down in the close proximity and in open sight to the participant. They should disrupt the natural flow of information as little as possible.
- Descriptive notes are the expanded notes that are usually written immediately after the completion of events and present the main body of the written data. They should be as neutral as possible and describe the occurrences in concrete terms and without any judgments.
- Analytical notes involve the researcher's interpretation, judgements or conclusions about what is being observed. They are usually marked or written in brackets to differentiate them from the objective notes.
- Methodological notes include notes about the methodology, usage of research methods, and comments on how to improve the techniques in future occasions.

- Audio recordings of the discussions help the interviewer focus less on note-taking and more on the conversation and the interviewee. Consent is necessary and in some situations audio recording might not be suitable.
- Video recordings of the group interviews can be helpful for analyzing the group dynamics and in cases when it is important to know exactly which participant said which statement, something that can be missed if using just audio recordings. It is useful on rare occasions.
- Photography and videography are common data collection techniques used for non-participatory observations. Photos and videos of the environment, people or specific situations can aid in the analysis and with easier reconstruction of the context in months and years after the field study has been completed.

3.7 Data analysis

Data analysis involves examining, categorizing, organizing, or otherwise recombining evidence, to produce empirically based findings. Analyzing data from case studies is especially challenging because the techniques have not yet been well defined. However, there are four largely accepted general strategies; relying on theoretical propositions, working your data from the “ground up”, developing case description, and examining rival explanations (Yin, 2014).

Throughout my analysis I relied on the inductive strategy of working the data from the “ground up”. In this approach, the researcher pours through the evidence instead of thinking about theoretical propositions. A researcher must be very familiar with the data and after extensive “playing with the data” one may start noticing some patterns and find that the evidence suggests some useful insights. These concepts then form the start of the analytic path, leading the researcher deeper into the data and possibly suggesting additional relationships (Yin, 2014).

Following this general strategy, I immersed in the data and used thematic analysis to determine emerging themes in separate cases of collected data. Then, I used the case study technique suggested by (Eisenhardt, 1989) to select categories or themes, and then look for intra-group similarities coupled with intragroup differences. In my example, these were the comparisons of multiple cases of collected data from different sources and using different research methods. This cross-search technique allowed me to observe emerging groups and organize them into barrier categories, with underlying specific barrier cases.

4 IDENTIFICATION OF BARRIERS TO IMPLEMENTING ENVIRONMENTAL SOLUTIONS

Under the predetermined goals of the thesis, this work aims to provide answers to three predetermined goals. First, to identify and categorize barriers to implementing environmental solutions in developing countries. Second, to describe implementation

barriers and provide examples from observations and interviews with participants. And third, to provide tips and recommendations on how social entrepreneurs, NGOs, and impact investors can predict barriers, prepare for barriers on time, and successfully prevent or overcome them.

Usually, one barrier case is a consequence of different factors. I have categorized them according to their most prominent factors. Many barriers could simply be explained by the lack of capital, but this is not the goal. The goal is, rather, to offer an analytical evaluation of the barriers I have observed during my qualitative field research. In the following subchapters, I therefore present the insights I have gathered using different research methods, which are described in the previous chapter. Instead of presenting findings separately for observations and separately for interviews, I logically combine and aggregate insights from various occasions that address a specific barrier case and category. Furthermore, in accordance with interpretivism, the results and discussion of the results are intertwined.

The barriers are grouped and described within the following categories of financing barriers, developmental barriers, environmental barriers, cultural barriers, language barriers, systemic barriers, resistance barriers, safety barriers, informational barriers, and personal barriers.

4.1 Financing barriers

Funding is the number one priority and the first barrier for any foreign social entrepreneur. The stakeholders in developing countries lack funding, access to investors and generally any other access to capital. The governmental grants or subsidies are very limited or non-existent. Similarly, bank loans are difficult to get, and the interest rates are incredibly high. For example, the average rate of interest charged on short-term loans by commercial banks to companies in Slovenia was about 2% during the past five-years (Trading Economics, n.d.–b). In Ghana, the mean rate of interest over the previous five years was 35% (Trading Economics, n.d.–a). Therefore, the first objective of any social entrepreneur or NGO founder who wants to develop a project in the developing country will be securing the funding and overcoming the financial barrier.

Project funding. The issue with environmental projects is that they are usually not very profitable. However, as explained in the theoretical introduction, the impact investing sector is growing and the patient capital for promising social and environmental projects is becoming more and more available. In my case, this barrier was solved in the social impact incubator, where we have also developed the project's idea.

Once the capital is secured, it opens numerous doors in developing countries. I observed that I was perceived differently because the feasibility study I was conducting was financed by a foreign investor. In addition to the private funding, I also observed that being from the European Union and potentially being able to apply for EU grants was seen as very

appealing. During the meetings and interviews, the municipality officials, business consultants and social entrepreneurs often mentioned, “*we can help each other apply for Horizon 2020*”. This and other EU grants we could eventually apply for together.

Investor relationship. The size of this barrier differs based on the funding agreement and the involvement of the investor. In my example, the investor partly also acted as a mentor for the project. Therefore, we established regular communication with weekly calls and messaging. The investor, however, came from a different country with a slightly different culture and a different language. He also had a specific communication style. Written and spoken English communication was somehow difficult. Efficient and transparent communication should be the foundation of any strong relationship. In our case, it was a challenge. I observed that when the investor is highly involved in the project the cultural and language barrier can have an important effect on the relationship and consequently on the project itself.

Long-term responsibility. While this case is not technically a barrier to project’s development it represents an important ethical liability that I would like to mention. Long-term financial support and a financially sustainable plan is critical. Otherwise, the project can collapse before implementation or sometimes worse, after implementation has taken place. The development and collapse of a project can be very damaging for the community if the project brings benefits to the locals, changes local habits and behaviors, get locals used to the benefits, makes them dependent, and then runs out of money, collapses, disappears, and leaves a void in the community that the project had already changed. The local people cannot continue the project without the financial support and it may also be very difficult for them to go back once the behavior or the norms have been changed.

4.2 Developmental barriers

The economical development of a country or a specific area results in a growing and ever more stable ecosystem of structures that interdependently support each other. It means that the presence of one structure, such as a stable electric grid or operating recycling plant, provides an important base for other projects. In a less developed area, the structures will inevitably be less developed, making the development of other, more advanced projects difficult.

In the developmental barrier, I describe the lack of supporting structures that one would take for granted in the West, but that are not always present or well established in the developing markets. The lack of these supporting structures, such as infrastructure, technology, or business partners, can delay, distort, or prevent the implementation of a project. Developmental barriers can also highly differ within a country.

Power outages. Ghana as well as many other developing countries share the problem of an insufficient power supply for the hyper growing population and power demands. Therefore,

unforeseen or scheduled power outages can interrupt the day. The frequency and duration differ based on the season and the area, with poorer areas being cut out more frequently. While I have experienced a few power cuts, they never lasted more than a few hours. However, I have been told by locals that “*sometimes there is no electricity for 12 or even 24 hours.*” Many companies have collapsed as a consequence of power shortages. With hospitals being affected, people relying on ventilators have even lost their lives because of this issue.

Lack of infrastructure. Although some roads in the areas where I conducted observations were not in great condition, that was not the major problem. The more widespread infrastructural challenge was the lack of trucks. I have been told by an NGO founder; “*We have an agreement with the hotels and restaurants and they are segregating the waste. But then there are no trucks available to collect this waste, so the waste is not moving and we cannot do our part.*”

Poor digitization. Our project did not rely on any kind of digitization and I have only observed this barrier in the research phase, where the absence of company webpages prevented thorough online market research. Obtaining the contacts was a challenge as well, and as further described in the cultural barriers, the locals rarely use emails for communication. In Accra, I did not observe any issues with mobile internet connectivity, however, this was not the case in the rural areas, where access to smartphones is also limited. A project I read about during the research overcame this obstacle by utilising text messages to send warnings to the farmers about upcoming extreme weather events. “*Webpages and online businesses in Ghana are barely existing. You can take any idea from the US and create it here and you will probably be the first one,*” told me a young entrepreneur while showing me his online project.

Lack of business partners. Not many businesses can operate on their own without any business partnerships. As I conducted the research and held some meetings, I realised that the area lacked an important business partner for our project. The existing major recycling plant was not responding to emails or calls and as I later found out it was operating at full capacity so they would not be able to process our collected waste. Smaller recycling plants also had a very limited capacity and could not serve us in the long run. A recycling plant was a critical partner for our operation. Without such a partner, we would not be able to set up the project in the area, or it would require a substantially larger investment or other workaround. Fortunately, local business consultants explained that “*there are plans for building a new recycling plant*” in a municipality where I later conducted observations and held a meeting. Today however, three years later, this plant is non-existent and there has been no news announcing it.

4.3 Environmental barriers

Emerging environmental problems hinder our economy and living conditions. They present an additional challenge for the development of projects around the world. Likewise, the process of implementing environmental solutions will be hindered by the presence of environmental problems themselves. In the environmental barrier, I describe factors that had a negative effect on the field study and could potentially be harmful for project development. I describe it as a noticeable, but relatively small, barrier that is not too difficult to overcome in short-term projects. The longer-term projects, however, should pay more attention to this barrier as it can negatively affect both business operations as well as employee health and satisfaction. These surroundings or environmental factors comes from natural or human sources.

Demanding climate. Ghana and many other countries in development are characterised by relatively hot weather throughout the year. They are also often characterised with rainy and dry seasons, moreover, heat waves, droughts, storms and floods are also not uncommon. The heat and humidity limited how I was able to plan and conduct my daily tasks. The strong equatorial sun, heat and humidity increased the energy expenditure and consequently also decreased the overall efficiency. It was difficult to plan outdoor midday activities. On the other hand, the occasional heavy rains in the rainy period caused traffic jams in some areas and floods in other areas of the city. The floods also regularly cause human fatalities.

Polluted environment. In addition to the plastic pollution, sound and air pollution also had a negative effect on my living and working conditions. I noticed how the polluted and degraded environment made it difficult to unwind. I could feel the exhausting effects of the relatively unpleasant environment on a daily basis. Living in such a demanding and polluted environment for a longer period can certainly affect one's health and well being. Additionally, the effects of existing plastic pollution could impair the project itself as well as plastic pollution is also the main reason for floods, damages, and related fatalities. Plastic waste clogs the drainage system and makes it unable to drain the rain water. It's a major problem that can occur after a single rainy day. Following are some headlines from the news article on this topic: "*Why Accra floods every time it rains*", "*Kaneshie, Dzorwulu (suburbs in Accra) flooded after Thursday rains*", "*Experts dialogue to mitigate perennial floods*". The poorest areas are usually the most polluted. These two factors alone would make these areas viable for setting up our plastic collection points. However, as a consequence of pollution these areas are also the most affected by the floods which would present an additional operational risk.

4.4 Cultural barriers

Human beings tend to migrate into tribes, groups and societies that are characterized by numerous formal and informal, conscious and subconscious sets of rules. Members follow

mutual rules to better fit into society, make their lives easier, and to build stronger relationships.

When one is developing a project in a society with different history, religion, ethnicity, stage of development and one that is set in a different geographical area than yours, the social rules will inevitably change. That is when a cultural barrier occurs. A cultural barrier occurs when local people do something differently than you do in your own culture.

What is normal in one culture may not be accepted in another, and without understanding, it could feel disrespectful, especially if taken personally. Because culture is the backbone of a human society, one should try his or her best to understand the differences, respect and possibly adapt to the new set of rules. This itself will be the basis for strong inter-cultural relationships and for potential success of a project in an exotic environment. A cultural barrier was one of the most commonly observed barriers during the fieldwork. On a subtle level, I felt it every day.

Value of time. Punctuality is the norm and a sign of respect in the West, but this is not the case in Ghana. It is completely normal to be late for a meeting. I have waited 30 minutes several times and even up to one hour. Similarly, I did not worry when I was running 30 minutes late due to a traffic jam in Accra. Punctuality seems to be less important. Sometimes, it seemed to me like they had more time because everything happens slower. However, this comes at the expense of efficiency, which ultimately will negatively affect the development of one's project. *"Everything takes time here. Lots of time! Nothing works exactly as it should - or as you would like it. But still, somehow, everything seems to work in the end. They just created a different system of everything. Being patient and persistent is the key here, more than anywhere else."* This is the excerpt from the semi-structured interview with the founder and social entrepreneur who relocated from Europe to Ghana years ago to found the enterprise focused on solving the problem of plastic pollution.

Digital habits. Like many developing countries, Ghana skipped the computer era and shifted directly to the mobile era which consequently also affects how they do business nowadays. Emails were generally not effective and business webpages were poor or non-existing, while word of mouth and WhatsApp messages were the main channels of communication. I was WhatsApp texting with businessmen, locals, NGOs and municipality officials. *"We don't check emails often,"* they explained to me in the municipality office, *"maybe after two weeks only. If you need something, you send us a WhatsApp message. Write down my number..."* The WhatsApp communication, however, worked very well. It was faster and felt more efficient compared to the standard email communication in the West. During the preparation period before the field study, I have sent out many emails but I have received very few replies. It later became obvious that I was simply using the wrong communication channel.

Racial difference. Before the field study I met with a foreign business consultant who had some experience in West Africa, although not in Ghana specifically. He warned me that *"In*

Africa, you may well be a target of racism. The racism against the white race as the white colonialists have done a tremendous amount of violence and injustice to the local inhabitants a few generations ago and the memory is still very much alive in their grandchildren.” While I did not have any problems in that area and had not experienced any racism, I did feel the effects of a different race frequently. For example, I noticed that I was often viewed as very rich by default and I could notice this with NGOs, municipality workers, social entrepreneurs, and other locals. Businessmen with international experience were the exception. This racial difference also opened some doors for me. But it also built some masks and reduced some authenticity and proximity I could have achieved otherwise.

When I was walking outside city areas, the local people would always yell a local word “*Obroni, obroni!*” when they saw me passing by. This happened with all generations, from kids to elderly and from men and women. I naively thought they were saying hello or were welcoming me. Later I found out that they are actually yelling “white person, white person!” in their local language. That is how they used to warn each other about the white colonialists approaching their villages. Although this time they were not hiding from me, but rather laughing or smiling, the habit of yelling the “white man” across the village was still very much present.

Trashing culture. *“The awareness about plastic pollution is slowly increasing, but it is still very, very low. There is no education about the subject, no pressure on the politicians, there are no trash bins in public areas so people trash everywhere. Without even realizing it or thinking about the consequences.”* This is the excerpt from the semi-structured interview with the local NGO founder. She works with schools, children and volunteers to raise awareness and clean plastic waste. Any environmental project could potentially face a similar issue where solving the acute problem (waste in my case), without solving the chronic, behavioral problem (trashing), could be good for business (collecting trash), but not desirable for a social business focused on social metrics (healthy environment). It is difficult and time consuming to change behaviors and education plays a critical role. If the education on the certain problem that a specific project is aiming to solve is absent in the local environment, the one who wishes to develop the project might also need to invest into this area.

4.5 Language barriers

While language is a cultural derivative, it is such an important characteristic that it deserves its own category. As a language barrier, I identify the cultural barriers with linguistic components including speech and writing.

Communication is an act of transmitting thoughts from one mind to another, generally through written or spoken word. If there is a barrier in the process of communication, then the package will not be successfully received and the sentence not thoroughly understood. The idea in one mind then differs from the idea in another mind. This itself presents a

challenge. And the situation gets worse, should the parties not recognize the barrier and actively act towards diminishing it.

It is estimated that there are more than 9,000 languages in the world and more than 80 languages in Ghana. Conveniently Ghana's only official language is English and although more than 90% of the locals speak African languages in their daily life, most of the people also understand and speak English to a certain degree (Bodomo, 1996). However, in my formal and informal interviews, the language barrier was always present. I will first present observed barriers with the English-speaking participants and then the barriers related to the non-English speaking participants.

Challenging common language. English is a live language, which means it is changing with time, culture and geographical regions. Consequently, although most of the participants in my field study did speak English, some of them had a strong African accent that I needed to get used to and which made the communication challenging. Sometimes it was also difficult to have longer and more complex discussions if the person had a very limited vocabulary or had very little education. As a field worker, I was always striving for perfect truth and complete understanding, which meant I constantly needed to be fully present and exercised active listening, which demanded lots of energy. Many times, I found myself in the situation when I could not fully understand a specific word or the meaning behind it and I needed to make many instant decisions whether to immediately interrupt the conversation and risk losing participant's train of thought, or to let the discussion flow, try to remember the remark and ask for further clarification a few seconds or even minutes later. Both options were energy consuming and I risked losing important data in either way.

No common language. On the other hand, many people did not speak English so we did not have a common language of communication. My project was highly connected to people living in extreme poverty, with little or no formal education so these situations were quite common. I was rarely accompanied by a translator and therefore having a meaningful conversation with these participants was not possible. We could exchange smiles, nods, gestures and some basic words but it was impossible to extract any project related information.

But I also needed to conduct some interviews with these non-English speaking participants. I needed to talk with slum dwellers, street waste pickers and the managers of plastic collection points. In these cases, I needed a local translator. Without a translator, I would only be able to talk with more educated people, which would mean a substantial loss of my source of information. And for my project, and any other project dealing with less educated people and people with poverty, this would not be acceptable.

Translator challenges. First challenge is to get a translator, especially with a limited budget. I was lucky to have made strong connections with two very helpful locals in the first days.

They were not professional translators but they spoke good English, local language and knew the local habits and street life very well.

But even with the translator, the language barrier was still present. The participant and the translator might not speak the same local dialect, so there might be a slight barrier between them. Additionally, the translator might not speak the same English as you do, so there might be a barrier there as well. Some information will inevitably be lost or slightly changed, and the field worker should be very aware of this. Again, being assertive and double-checking multiple data entries was crucial in my case. The professional translator would alleviate this issue, but could also introduce less authenticity and flexibility at a higher cost.

In a few cases, I observed that the translator wanted to help me by interpreting the answers of a participant. While this was helpful when I lacked the context, it was also disruptive for my conversation with the actual interviewee. In all discussions, a field worker should be careful about this barrier and make additional remarks on the comments that are actually interpretations of an interviewer.

Different communication style. In the emails and WhatsApp messages, much less focus is put on politeness compared to the emails in the West. Many messages I have received would be seen as impolite if coming from the West. Often the sender also referred to me as “*brother*” which can mean a friend, a colleague, a very close friend, or a real brother, and it comes from the perspective that we are all brothers and sisters. At first it felt slightly odd because I was not used to such language but I needed to accommodate to the culture and go with it.

4.6 Systemic barriers

The political system is an ecosystem in which the social entrepreneur establishes, or wants to establish the social enterprise. This environment can be supportive, not supportive, or depressing. For example, governmental subsidies can provide support to the entrepreneurs, while the absence of such support makes the ecosystem more neutral. On the other hand, corruption can create a depressing ecosystem for young social entrepreneurs and increase barriers to entry. Therefore, I describe the systemic barriers with socially negative actions and regulations and with the absence of socially positive actions and regulations.

Lack of government support. In general, developing countries are characterised with a relatively lower government revenue, which consequently makes it difficult for them to offer grants and subsidies. Developing countries are often also characterised by corruption. Combining these two factors leave little to no aid money for small and medium enterprises. *“I am the pioneer of plastic recycling in Ghana. 20 years ago I bought the machinery and brought it to Ghana. Since then, I am collecting plastic waste in the area, recycling it, and transforming it into simple products but never have I received any government money.”* calmly explained the old man as we sit and talk in the middle of piles of plastic chairs he has

collected. *“I just need a small amount to fix an old broken machine and increase my recycling capacity,”* he added.

“Only the big recycling company, connected with corruption, is receiving government money and people are also not satisfied with their services,” added another social entrepreneur in a different interview.

“I went to the municipality to ask for a small grant for our plastic collection program that we are doing around schools. They offered me T-shirts!! So that when our NGO is collecting the waste and doing the work, it would look like they (the municipality.) are actually doing something!” shared her experience the NGO founder.

Corruption. While I have not experienced corruption first hand, I have been warned about its extensive presence several times. *“I love Ghana. We are very proud of our independent country! But politics is the main problem here - they are too much corrupted.”* That is an excerpt from an informal interview with a local artist and an approximation to a dozen other street conversations I have had. One social entrepreneur additionally described the levels of corruption: *“There is lots of corruption. Lots. First you have kings and chiefs, and then you have government and municipalities. The problem is there are so many bureaucratic levels, so many middlemen, and many of them will want their share.”*

Incomplete land registry. The bureaucratic structures in developing countries are often not perfectly established and systematized. The land registry in Ghana is one such example that would supposedly present a substantial problem if we would want to buy the land for our enterprise. *“Be careful with the land owners when buying land. It’s not well organized and your seller might not actually be the owner of the land he is selling. There is also stool land, the land that belongs to the Chiefs, and there might also be more people claiming the same land. And selling it. Which can lead to multiple sales of the same land,”* warned a local social entrepreneur. In the municipality, they expressed a similar problem and warned me that *“the process of buying the land can be very long. Sometimes up to two or three years.”*

Limitations for foreigners. My research was not focused on researching regulatory barriers that foreigners are facing in Ghana. However, every country has its own rules and limitations that address foreign investments, business ownerships and land ownerships, as well as taxation. I have been warned of high foreign tax, but I have not observed these barriers, nor did I include this topic in my interviews. Therefore, I cannot make a meaningful contribution to this case, apart from mentioning it and acknowledging that it is there.

4.7 Resistance barriers

In the resistance barrier, I warn about opposing and potentially threatening competition and the gray zone status quo. In this barrier section, I discuss the background of this important topic for project development and describe one heated example from the field study.

I have learned that every solution has the potential to create a new problem for someone else. When a specific problem is already addressed by a group of people, either inefficiently, partly, or illegally, a strong resistance by that group is possible to occur. If the new solution is putting a specific community with limited alternatives and their families at risk of financial and existential crisis, then physical violence cannot be ruled out.

There are many such cases worldwide, like frequent murders of conservation park rangers by animal poachers across Africa. I have barely scratched the surface of this barrier, but I describe the situation where I have been threatened for taking photos.

Existential crisis of gray economy workers. The social security of people working in the gray zone in developing countries is nonexistent. Moreover, people at the bottom of the social pyramid do not have many working opportunities. If they lose their job, they don't have the privilege of unemployment and social benefits. If they lose a job because of my environmental project, then their rage will be focused on me.

It was the second dumpsite visit of the day. I had the privilege of being guided by the municipality employee in a uniform and a driver in the white jeep covered with city council stickers. Everyone knew where we came from. The dumpsite we were visiting was hidden, huge, and illegal. *"We arrested some people. Next day, we get a call that we need to release them,"* I was given a rationale, *"they are illegally dumping the trash. It's not ok, but we cannot do anything."*

As we arrived, I was told to stay in the car while our guide went out to explain why we were coming and made sure that it was safe, even for outsiders. He then also confirmed to me I can take pictures with my phone. As I was approaching the main part of the dumpsite, I grabbed my phone and took some photos. I was just doing a wide panorama of the place when suddenly a man started shouting and a group of 20 young men in their twenties and thirties began running towards me. They surrounded me and started yelling in English and various other languages. *"Delete! Delete! Delete photos now!"* At first, I was hesitant, as I was explicitly allowed to take photos by the municipality employee who was now rushing into the heated debate. *"Delete, or I pull out the knife!"* shouted the man in front of me. The men were eager to take my phone and get rid of the photos by themselves, so I had no other choice but to cooperate and started deleting photos one by one under their observance.

I realized that the municipal authority I was with was not really the authority in this place and the visit ended earlier than planned. He was shocked and apologetic and briefly explained what happened: *"They are scared the government would close this place. They don't want any photos 'cause [sic] they are afraid it goes to news and they lose the job."*

4.8 Safety barriers

In the West, we take safety and security for granted. This is not the case in all parts of the world. Safety and the feeling of safety should always be of utmost importance for the project developers and all stakeholders otherwise the development of the project is at a high risk as well. Not many people would decide to risk their own safety for the success of a project. In the Safety barrier I describe observed cases that could potentially put the safety of project developers into question.

Kidnapping as a business. Just when I came to Ghana, two European female students were kidnapped in Kumasi, the second largest city in the country. After a synchronized international mission, they were located and freed unharmed a few days later. Kidnapping is relatively rare in Ghana, but it still occurs. In other parts of Africa, however, it is much more prevalent and one should take this topic more into consideration. What follows is the excerpt from the meeting I had with the Ghanaian business consultants. *“So, you’ve been in Accra for two weeks now, right? In Nigeria, without security (guards)...walking alone...you would be kidnapped by now for sure! It happens so often there - it’s a business. Midday, black van - they kidnap you in the middle of the street and hide you somewhere. You get some basic food. If they know you’re wealthy, they will blackmail your family. Otherwise, they usually contact your embassy and try to sell you back. It’s a good business for some people.”*

Higher crime rate. Ghana is regarded as one of the safest countries in Africa, but the crime rate is still relatively high compared with the West. I was able to indirectly observe the effects of higher crime rates on a daily basis. Many houses were surrounded with concrete fences topped with barbed wire or broken glass. The wealthier residential area was also surrounded with electric wire and guarded by security guards. The private school with the attached restaurant where I had one of the meetings was surrounded by a concrete wall, armed security guards, metal rotation gates and equipped with metal detectors. *“I like to come here. Unlike many other places I can really relax here,”* added my interviewee. Many shops were likewise also guarded with security guards.

As a white person, one will also attract more attention and be seen as a rich person by default. Consequently, I had to be more alert, especially in very crowded or deserted places. During my four week visit, however, I never felt directly threatened, but the relatively less safe environment had definitely consumed additional energy on a daily level. As mentioned, Ghana is a relatively safe African country and hence this barrier was not very substantial in my case.

High-risk areas. Some places are less welcoming than others, and some places are completely unwelcoming and demand extra caution or an insider as a guide. In one case, during the research of the gray economy of the recycling industry in Accra, I knew I was in the wrong place at the wrong time.

Agbogbloshie is the largest electronic dumpsite in the world where hundreds of young men make their living by disassembling trashed and rusted electronics and other waste, usually shipped from Europe and USA. After arriving in the area in the late afternoon I realized the magnitude of this dumpsite, entered a few dark alleys and soon understood that this is not the place where I want to be after dark. It was a very degraded, dark and unwelcoming place filled with angry gazes that made me feel like a complete intruder. I returned the next morning to find an insider who would show me around. With him I felt safe and less of an intruder as he guided me around informal workers and acres of trash. *“Don’t step far from the path.”* he warned me, *“you can sink (into the trash). People have died here.”*

4.9 Informational barriers

A number of obstacles negatively affected the process of collecting accurate, reliable and timely information. These challenges occurred in the online and offline settings. The offline challenges are also related to the language and cultural barriers presented above, while the online challenges are more related to the developmental and cultural barrier. The informational barrier can drastically slow down the progress of the project, or worse, shift the project in the wrong direction if relying on the incorrect information.

Online barrier. This barrier was mainly present in the preparation phase which involved extensive online research. It was quite difficult to find some specific information about Ghana and Accra and it was extremely difficult to get the information about specific companies, municipalities, NGOs or other stakeholders. Webpages either did not exist, or were underdeveloped and full of broken buttons and links. Email addresses and contact numbers were often missing, which often made it impossible to find business contacts and reach out to them upfront. In cases when an email address was available, some technical issues such as incorrect email or full post box occurred as well. Furthermore, when the email went through, the response rate was below 50%.

The lack of information available online made the preparation phase challenging and the primary research even more important. However, lack of accurate information gathered before the field study also decreases how well one can prepare for the field study in a new environment itself.

On-site barrier. Once in the field, I did not know anybody so making good connections became very important. It was a challenge to get insights about the community, to get the right contacts and then build a rapport. Without the right contacts I would also not be able to find or get access to some hidden and illegal areas that I wanted to visit. My best contacts were a few local people who were deeply involved in the community and areas where I wanted to conduct the research. They were not professionals in the plastic industry so they were not biased and had zero other interests, apart from receiving a small donation in exchange for their help. They had sufficient knowledge of English and were able to find almost any contact or a point of interest.

Deceptive information. The online information can be outdated and the information gathered during interviews can be missing, misleading or contradictory. To overcome this barrier, I was continuously rephrasing my question and repeating their answer. Rephrasing the sentences using different words often produced a clearer or different answer altogether. In one specific case, however, I failed to obtain accurate information and realised that one month later during the field study itself. During the video call with one of the NGOs involved in the education and mitigation of plastic waste problem the founder told me that *“the plastic problem in Accra is a very big issue. And nobody is solving this problem. There are no plastic collection schemes that would be dealing with this problem and plastic lay everywhere.”* To my surprise as I landed in Accra, I realised that while there is plastic on the street, there is not as much as I imagined based on the conversations I had and the videos I have seen. Through the small talk on the streets in the first days, I also discovered there are some plastic collection points. I also saw some waste pickers by the street. I soon realised that some sort of an informal plastic collection scheme had obviously already been established and that some people were already making a living from it. I was not aware of these schemes. So, over the next few days, I extensively focused my research upon understanding this scheme. I realised that what the NGO founder meant was not that there is no scheme, but that there is no official scheme that would efficiently tackle this problem and produce good results. I believe the NGO founder had nothing but good intentions, but the information was misleading and inaccurate.

4.10 Personal barriers

The last presented barrier is very different from all others. All previously described barriers are exogenous and come from the objective external environment. The personal barrier, however, is endogenous, internal and ultimately subjective. I identify the personal barrier as an internal barrier, coming directly from within the field worker. The barrier examines how different subjective observations of the objective world can influence the perception and hence the fieldworker’s involvement in the project.

As opposed to the other barriers where the field worker needs to thoroughly assess the factors in the external environment to minimize risk, in this last presented barrier, the field worker shifts the focus internally and asks himself if or when, he may be the actual barrier. Moreover, this barrier subchapter present situations in which the fieldworker can become the barrier himself and tries to provide questions that the fieldworker should ask himself directly.

Likewise, in the case of a team project, every member of the team should look within and pay attention to the possible occurrence of this barrier. An employer, project lead and impact investor should also pay attention to this topic during recruitment and in later stages of the project.

This barrier is unique from the perspective of data collection. The barrier results from my internal dialogue and self-observations. It is therefore an interpretation of an internal process that automatically and consciously occurred in the weeks before, during, and after the field study.

Challenging living conditions. Implementing an environmental project in a foreign country can be a very rewarding, adventurous, and eye-opening experience, but it comes with many challenges and will inevitably be stressful. Such projects demand lots of time and energy.

Simply conducting research or developing a project in a foreign country means that one must be away from family and friends. Socializing becomes challenging, not just because one needs to make new friends, but also because of the cultural differences. Social events and parties might be different or non-existing. However, it will be a great opportunity for meeting new people from different cultures.

As explained in the environmental barrier, the environment can be very unpleasant, dirty and degraded. The air, especially in the major metropolis, can be very polluted. The lack of natural parks and clean areas would also present a challenge for me if I moved to Accra for a few years.

The food selection might be very different. I can say that I did not enjoy food in Accra. One needs to be very flexible to accommodate to the local cuisine and sometimes one would also need to change his diet. Moreover, the water from the tap is usually not drinkable.

Social and environmental sector receives lower financial incentives than comparable talent could receive in other, profit-oriented sectors. This is true for both NGO and social entrepreneurship. It is also true for social impact investors, where investors accept lower than market returns on their investment. Passion is critical and it should be the strongest driving force. If money is your priority, then look further to increase chances.

If safety is the main priority, then such projects are also not the best option. As described earlier, the criminal rates are higher in developing countries. The health concerns are another factor. Antimalarial medications with side effects are sometimes essential, but even Antimalarials cannot be used for long-term stays. Lower hygiene and new bacteria also result in digestion problems.

Personal dissonance. Personal dissonance can occur when the expectations of one's life quality, development and trajectory are not aligned with the reality. In the theme of this thesis, this occurred with regards to the reality of implementing the project and living in a developing country. If this dissonance occurs, an internal conflict needs to be resolved for one to live a happy life. This can be resolved either by changing one's perspective about fundamental expectations that are not aligned with the reality, i.e., the necessity to live in a comfortable environment close to the family and friends, etc. If the perspective does not successfully adapt and align with the reality of the project, the project could become

consciously or unconsciously sabotaged and abandoned. Recognizing this barrier, looking inside and asking some profound questions can help the field worker in recognizing if this is the right project for him. It can also help in overcoming the challenges that will inevitably appear in the later stages of the project.

Subjective amplification. While all barriers are intertwined to some degree and can influence one another, this is the barrier that can affect any of the aforementioned nine external barriers the most. When the personal barrier grows into a major dissonance, then all other external barriers will be perceived as much bigger, possibly to a degree where they seem unsolvable, or unworthy of a solution. On the other hand, if this barrier is completely non-existent when the expectations and reality are perfectly aligned and there is no internal traction, then the passion for the project will somehow provide the necessary energy and overcoming all other barriers will be enjoyable.

In my example, this alignment was near perfect in the beginning stages of the project. I was engaged in a very meaningful project, working on a noble solution with the potential to reduce both environmental and social injustice. I received funding and worked in an international environment with a good team. Solving real problems in developing countries was a dream come true. Until it wasn't.

As the project progressed, the tensions related to the financing barrier surfaced first and destabilized the project and some relationships. During the field study, the complexity of the situation became more and more noticeable and, therefore, the personal barrier grew as well.

5 RECOMMENDATIONS AND DISCUSSION

5.1 Recommendations and practical implications for overcoming barriers

Below, I provide tips and recommendations for overcoming, or even preventing many of the analyzed barriers. The recommendations for action are written primarily with a focus on social entrepreneurs as well as non-profit organisations. Impact investors and donors can adjust recommendations and use them in their screening process to detect projects with the highest likelihood of success. Likewise, local municipalities and governments can study these barriers and do what is in their power to minimize certain barriers and increase the probability of successful environmental projects, and foreign investments in general.

Overcoming financial barriers

- As a foreigner your first objective should be to secure the capital, usually through foreign investments.
- Secure sufficient funding to complete a certain stage of the project.
- Nurture a transparent and trustworthy relationship with your investor.

- Developing social projects comes with responsibility that does not end after the project is terminated.

Overcoming developmental barriers

- Think about which supporting structures you need to develop your project. Are these structures available in the region?
- If you need electricity, how vulnerable are you to power cuts? Can you afford the generator, or can you afford not having a generator?
- Maybe the timing of your project is just not right. Or maybe it is the perfect time for innovation.

Overcoming environmental barriers

- Flexibility and adaptability on the individual level will be crucial to accommodate to the demanding climate or degraded and polluted environment.
- Ask yourself how will seasonality affect your project and if you plan to operate all year. For example, there might be big temperature and precipitation differences between dry and wet seasons.
- How vulnerable are your operations to various extreme weather conditions? Weather resistance is especially important for long-term non-seasonal projects.

Overcoming cultural barriers

- Educate yourself about the culture and habits of the society where you are traveling to. Do an extensive online research prior travel but acknowledge that you will never be fully prepared.
- Try to set some video calls with locals for acquiring additional insights. I was fortunate to have been able to hold a meeting with Ghanaian businessmen and consultants in Slovenia, before the field study, which was very informative.
- Educate yourself about the business culture, about communication and about dress code and then respect it.
- Be very open minded, attentive, and flexible when on the field. I talk more about that in the chapter Role of the Researcher.
- Expect that everything will take more time in the developing countries. Plan your day accordingly, without a tight schedule. Similarly, add extra days to anything in your monthly timeline.
- If you plan to recruit local people or promote something on the ground, learn about the effective communication channels. They may be very different than in the West.

Overcoming language barriers

- Exercising active listening and being fully present is crucial to overcome the language barrier.

- A field worker should be careful about the information s/he hears and double check as much data as possible especially when the data contradicts expectations.
- Assertiveness will play a crucial role. One must constantly interrupt the other party to make needed clarifications.
- Flexibility will benefit the field worker to get accustomed to the local culture and language. Start to mimic some words and phrases that are not natural, but are popular in the community of the field work.
- Find a translator that suits your criteria of professionalism, flexibility, authenticity, and cost.
- Be aware of the translator's interpretations of raw answers and mark them in your notes.

Overcoming systemic barriers

- Do not expect financial support from the local government of a developing country. Getting institutional support (from EU, UN etc.) is your role as a foreigner.
- Be aware and prepared for the corruption; it can either hinder your development or accelerate it.
- Thoroughly examine the limitations for foreigners for opening a business, owning a property, etc.
- Try to get an experienced local consultant that is familiar with the system and ideally knows the right people.

Overcoming resistance barriers

- Do not take someone's last bread away.
- Be prepared for resistance if the problem you are trying to solve is already being addressed by someone else, either successfully, unsuccessfully, partly, or illegally.
- Be very careful if your solution is putting a specific group of people with very limited earning alternatives at risk, and consequently placing them and their families into an existential crisis.
- When young men are in existential crisis, physical violence is not out of the question.
- Be careful that your solutions do not create major problems for any community.
- Gray economy workers or previous competition can actually power your project if you channel their energy efficiently by providing them a new and better alternative.

Overcoming safety barriers

- Be careful and alert, but not afraid and never arrogant.
- You will always be out of your comfort zone, but try to find some comfort, otherwise you will lose too much energy in the long run.
- Be accompanied by a guide when you are exploring high risk areas or areas where you would be a complete intruder.

- A guide can be a local that you trust. Or you can find one by asking at the municipality, asking your local connections or even searching on TripAdvisor, which I used to find a guide for one slum where I conducted area observations.
- Even if you are doing something good, remember that you are a visitor, not a savior.

Overcoming informational barriers

- Do not automatically assume that your emails will be seen or answered.
- If available, Google Street View can be helpful in getting a better feeling about the area before travelling there.
- Do the field study as early as possible. Secondary information and online research cannot compare to the real information from the field.
- Establish a few strong key connections that are deeply involved in the community where you want to conduct research, and a few more niche and specific connections. People will be happy to help and may open many new opportunities for you.
- A donation for locals that assist you is advised.
- Utilise probing techniques during interviews to open and deepen the conversation.
- Re-check every bit of information.
- Use casual small talk when people stop you on the street to get insights into public opinion about general issues of your interest.

Overcoming personal barriers

One should ask oneself the next questions and have an honest internal conversation:

- Are you willing to work under tough conditions?
- Are you willing to endure difficult living conditions?
- Can you embrace a new culture? Will you be able to make deep connections and new friendships?
- Are you open enough to living in a different culture? Are you willing to change yourself?
- What are the opportunity costs of you working somewhere else? Are you ok with it?
- What is important in your life? What are your priorities? Is it money and stability? Then these kinds of projects are probably not for you. If, however, it is purpose, passion, equality, real problem solving, making impact, meeting different cultures, and helping others, then these kinds of projects might suit you well.
- Are you willing to be exposed? Especially as a white person, in an area with higher crime rates. You will be more noticed by the media, officials and competition.
- There are many challenges and disadvantages of doing social and environmental projects in foreign, less developed countries. There are also many advantages. Does the job and purpose fulfill you enough to cover the challenges and disadvantages?

5.2 Practical application tool: Barrier Forecast Canvas

Based on the findings from the field study, I designed the Barrier Forecast Canvas as a tool that helps social entrepreneurs, non-profit organizations or other businesses entering developing markets to forecast possible and detected barriers. Its purpose is to assist teams and project managers become fully aware of all possible barriers that might occur in the development of the project. Once the barriers are detected, the team can then start preparing for them and create appropriate and timely solutions.

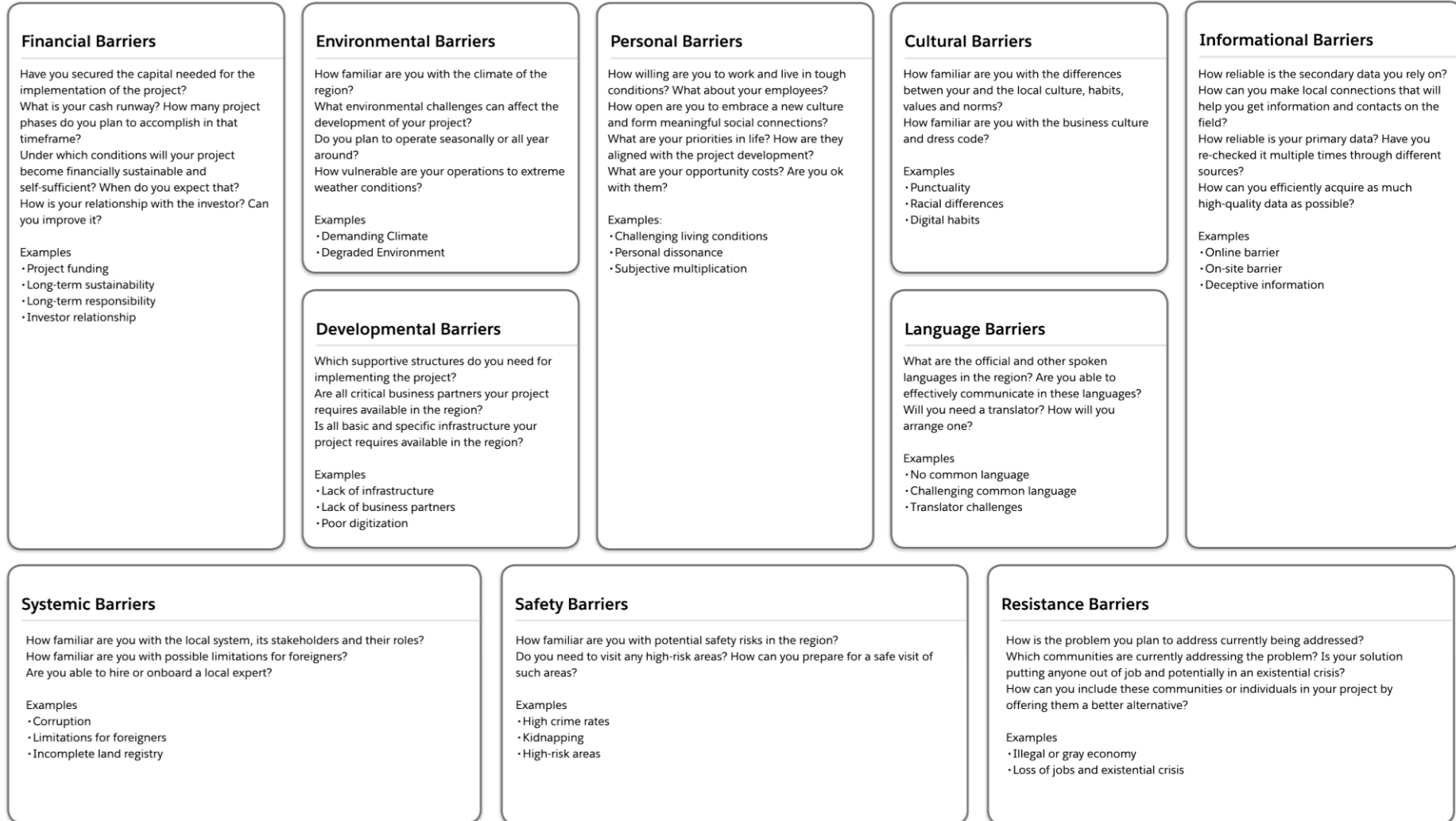
The Barrier Forecast Canvas, presented in Figure 4, provides barrier categories, leading questions to think about possible barriers within a category, and examples of specific barriers. The canvas is divided into 10 barrier categories and they are financial, environmental, developmental, systemic, safety, resistance, personal, cultural, language, and informational.

The Barrier Forecast Canvas strives to:

- 1) reduce the risk of (untimely) project abandonment, by reducing the number of unpredicted barriers,
- 2) reduce the risk of lost resources, by upfront highlighting potential detrimental barriers,
- 3) increase the probability of successful project implementation, by highlighting barriers and allowing the team enough time to overcome them.

Figure 4: Barrier Forecast Canvas

The barrier forecast canvas provides a one-page view of potential or detected barriers to implementing projects in developing countries. This diagram reduces the risk of detrimental unpredicted barriers. It allows us to forecast the barriers in order to prepare and overcome them.



Source: Own work.

5.3 Discussion of observed barrier interdependencies

Figure 5 illustrates the main connections between the 10 observed barriers. While I could argue that it is possible to find a connection between each and every single barrier (for example; the compound historical effect of the environment on culture and linguistics; or the effect of poverty on almost all other barriers), this diagram illustrates the most prevalent direct connections and drivers among these barriers.

Personal barriers appear when any - or all - external barriers grow above a certain subjective limit. If external barriers become subjectively unbearable, it is possible that personal barriers will also become unbearable, which can result in a project abandonment. An individual's internal views can also affect how one views and tackles other barriers. An agitated internal state can make external barriers seem bigger and more difficult to solve, while a content internal state can make external barriers seem as the enjoyable challenges.

Environmental barriers are divided into two parts. One sphere is mainly a consequence of geography, for example demanding climate and severe weather events. Undoubtedly humanity, through global warming, affects these events. This sphere is not largely affected by other identified barriers. The second sphere is characterized by high levels of pollution in the environment. Apart from increased awareness, this sphere is highly driven by the development barrier. To simplify, a less developed country has less infrastructure and available resources for pollution problem mitigation. Similarly, people in less developed countries have more basic day-to-day problems and consequently put less focus on not contributing towards this problem.

Developmental barriers apart from environmental barriers also contribute to informational barriers. Computers are not omnipresent and the online infrastructure is less developed, which makes finding reliable secondary information challenging. On the other hand, developmental barriers are affected by the lack of capital and a less efficient and corrupted government. These are often described as financial barriers and systemic barriers, respectively.

Financial barriers from a lack of capital or difficulty in obtaining capital affects developmental barriers. Similarly, it is also intertwined with the systemic barrier. One barrier amplifies the other.

Systemic barriers affect the developmental barriers with systemic inefficiencies and, as mentioned above, are entangled with the financial barriers. The system can also be affected by the history and culture of chiefdoms and kingdoms, described as cultural barriers. The lack of established supportive structures such as healthcare, social support and unemployment benefits within the system consequently put people who lose their jobs at risk of an existential crisis, consequently fueling resistance barriers.

Resistance barriers are affected by poverty coupled with systemic barriers as unemployed young men resist the possibility of an existential crisis. This barrier is also intertwined with safety barriers.

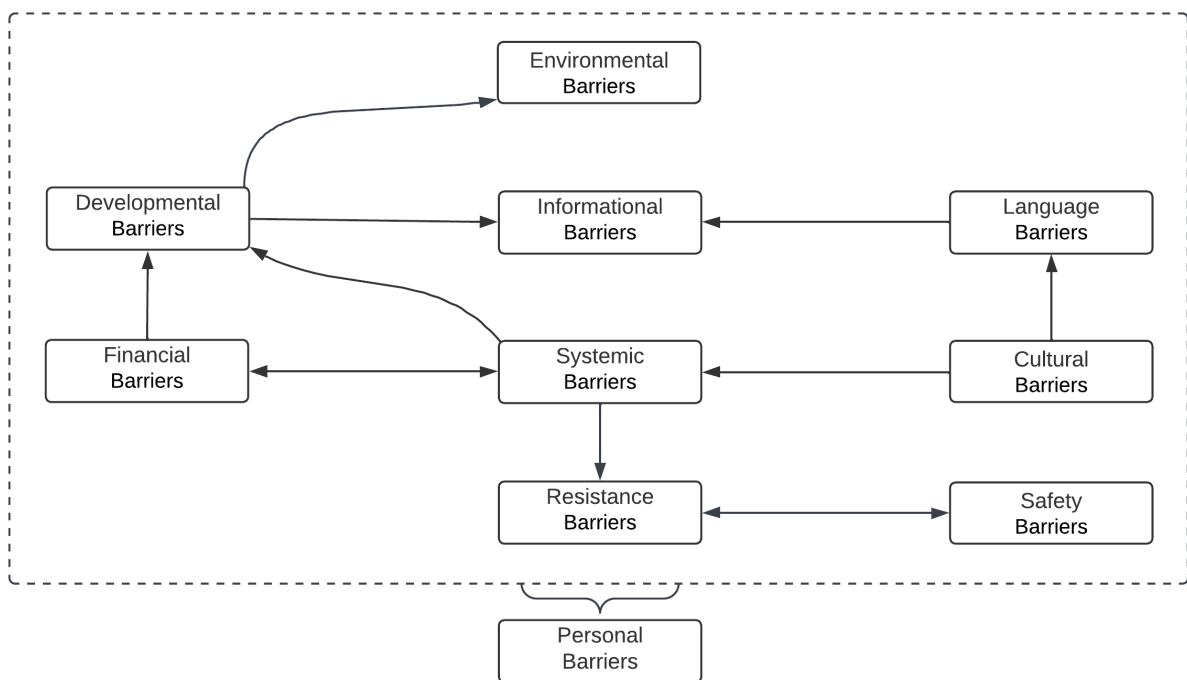
Safety barriers are coupled with resistance barriers as the presence of one amplifies the possibility of the other. Safety barriers can be seen as a more general and higher-level group of barriers compared to the more specific, competition-destructive resistance barriers.

Cultural barriers can affect systemic barriers with a history of traditions such as the presence of kings and chiefs as political figures. As language is a direct derivative of the culture, it also affects the language barriers. In countries with diverse culture people will often speak various different languages within one country.

Language barriers are affected by the cultural differences described as cultural barriers. The broader the cultural differences, the bigger will also likely be the language differences, even when speaking the same primary or secondary language, English for example.

Informational barriers can also be divided into two spheres. The online sphere is affected by the developmental barriers and poor digitization and it mainly hinders the collection of secondary online information. The on-site sphere is highly affected by the language barriers as the challenges in communication can obstruct the collection of primary information directly on the field.

Figure 5: Diagram of barriers interdependencies



Source: Own work.

Furthermore, complexity arises when a group of components interacts with each other in multiple ways and follow local rules. Social communities and Earth's global environment are two examples of very complex systems. Environmental problems generally arise at the intersection of these two systems. Therefore, solving environmental problems requires very complex problem solving abilities. In most cases of environmental problems, the source lies in the ignorant, short-sighted, egotistical or profit-focused human behaviour. The consequences of the problems are observed in the planet's habitat, either locally or globally. Sometimes the problem arises thousands of kilometres away from the initial source.

When perceived complexity arises, it can be a sign that one needs to stop, evaluate, and analyze the situation that seems overly complex or even overwhelming. One needs to structure it to examine the roots of the apparent complexity and then address the underlying barriers analytically.

Solving environmental problems is complex and time consuming. It is impossible to shift complex and habitual human behaviour overnight. Similarly, it is impossible to completely solve a global environmental problem through local action. Acting locally, however, is usually the only option. While a perfect solution in these complex systems may not exist, solving environmental problems through social entrepreneurship requires very innovative problem solving techniques. The more components that are present in the system the more complex it is to find a suitable solution that solves the main problem and that does not create additional problems. One should not create more problems than one solves, because if analyzed closely, every solution has a potential to create a new problem.

Social entrepreneurship is more complex than classical entrepreneurship. In addition to the entrepreneurial-business aspects, it also includes the social-environmental factors. It is substantially less egocentric and it examines the problem holistically within the ecosystem taking into account all its stakeholders, including living habitats. A social entrepreneur cannot afford to deploy a profitable solution that would cause harm to the community or a natural body in the future. Similarly, social entrepreneurship is more complex than NGOs because of the added financial sustainability factor.

Solving environmental problems is a game of politics, economy, business, conservationism, social work and psychology of human behaviour. There are so many stakeholders with various opinions and different interests. The implementation of the project often occurs in a challenging environment. If one wants to solve a particular problem in a developing country, one might need to solve a few other problems first.

Another factor increasing the complexity of mitigating environmental problems is that the source and the consequence may not be observed on the same geographical location. Plastic debris that was intentionally or unintentionally thrown away may travel down the river for thousands of kilometres before reaching the ocean where the ocean current can take it another thousand kilometres away until it ends up in the whales' stomach, on a remote

tropical beach, or in one of the great ocean garbage patches where it will spend the rest 500 years drifting and slowly decaying into the ocean.

5.4 Limitations of the study

This case study is a distinctive type of empirical research. The data collected is richer in details and insights as compared to other approaches. The unavoidable weaknesses are accepted as method-related limitations of the research.

First, a common criticism of the field studies is related to the risk of bias i.e. the bias of the participants and the bias of the researcher. The participants' bias is reduced by developing trustworthy relationships to minimize the chance of misreporting the events. Furthermore, data triangulation is used to further reduce data bias. Following the interpretivist paradigm, the presence of a researcher's bias is also acknowledged in the process of data collection as well as in the process of data analysis and interpretation (Bernard, 2011; Yin, 2014).

Second, the fieldworkers do not have enough time to interview hundreds of participants. Therefore the findings tend to be less reliable compared to some other quantitative approaches. In the field work, the gain of very valuable validity is inevitably exchanged with the loss of reliability (Bernard, 2011).

Finally, the data gathered is related only to the specific case under research. The generalisations are therefore made not for populations but for theory building. The generalization attempt of this case study is based on the literal replication, which predicts similar results in other similar cases. Although I expect a high external validity of the analysed barrier categories, further research should be conducted to confirm this assumption. While it is possible to generalise from single cases, the multiple-case studies can strengthen or broaden such generalizations, similar to the advantage of conducting multiple experiments (Eisenhardt, 1989; Yin, 2014).

5.5 Recommendations for further study

Within the replication logic, the series of different cases is treated as a series of experiments and cases that confirm the observed relationships and enhance the generalization validity, while cases that do not confirm the relationships can provide an opportunity to refine and extend the theory (Eisenhardt, 1989). In my example, I predict the occurrence of similar barriers in other developing countries. However, additional case studies in other developing countries should be conducted to confirm or refine this prediction. Moreover, the insights from additional interviews with individuals or organizations with the history of implementing environmental project in developing countries could add to the body of knowledge about barriers to implementation.

CONCLUSION

It is the responsibility of every individual to aim to reduce his or her negative impacts on the environment. We owe this to the generations yet to come. We can all do this daily by buying less and by choosing food, transportation, and products with lower environmental impacts. Regulators are trying to balance the public opinion, habitual behaviours, and conflicting interests, and we can all play a role in accelerating these changes. Non-profit organizations, social entrepreneurs, and impact investors are trying their best to mitigate the environmental risks which largely arise due to the negative environmental impacts of our collective actions. The environmental challenges we are facing as a humanity can largely be solved and the same holds true for the barriers the stakeholders of mitigation are experiencing when implementing environmental solutions in the field.

The main purpose of this research was to contribute to the success of environmental projects in developing countries by providing insights gathered from the 4-week field study that I conducted in Accra, Ghana. The aim of the thesis was to present the observed barriers, to describe and categorize them, and to provide suggestions for overcoming these barriers.

During the field study, I collected data with semi-structured interviews, unstructured interviews, informal interviews, participant observations, and direct observations. The observations and interviews were conducted in various formal and informal settings around Accra such as slums, dumpsites, waste collection points, and municipality office. The interviewee participants included municipality mayor, plastic collectors, business consultants, social entrepreneurs, NGOs, and slum dwellers among others.

With the thematic analysis of the collected field data, I have recognized 10 categories of barriers to implementing environmental solutions in developing countries: 1 – financial barriers (e.g. project funding, investor relationship, long-term responsibility), 2 – developmental barriers (e.g. power outages, lack of infrastructure, poor digitization, lack of business partners), 3 – environmental barriers (e.g. demanding climate, polluted environment), 4 – cultural barriers (e.g. value of time, digital habits, racial difference, trashing culture), 5 – language barriers (e.g. challenging common language, no common language, translator challenges, different communication style), 6 – systemic barriers (e.g. lack of government support, corruption, incomplete land registry, limitations for foreigners), 7 – resistance barriers (e.g. existential crisis of gray economy workers), 8 – safety barriers (e.g. kidnapping, high crime rate, high-risk areas), 9 – informational barriers (e.g. online barrier, on-site barrier, deceptive information), 10 – personal barriers (e.g. challenging living conditions, personal dissonance, subjective amplification).

I found that the barriers were not isolated but were intertwined and interdependent of each other, which adds to the complexity of the problem-solving process. To assist in that process, I have designed the Barrier Forecast Canvas, which is a practical tool that guides social entrepreneurs, NGOs, or other project developers in recognizing the barriers in their

implementation process. The canvas on one page provides barrier categories, examples and leading yet open questions that help the user describe existing barriers and uncover the hidden ones. The tool helps in timely recognition of the barriers. After barriers are recognized, the team can then create a strategy to overcome them.

While these barriers are more severe in the developing countries than they are elsewhere, the need for solving environmental problems in these regions is also higher. With the appearance of impact investing and an increasing body of knowledge, the setting for implementing environmental projects is perhaps more supporting than ever before. Some environmental changes are irreversible, but many contemporary problems can be solved, and many changes are reversible. Some of the main stakeholders of environmental problems mitigation altruistically devote their lives and personal savings towards solving these complex problems. They do so because they feel it is the right thing to do, and because, as the Native American proverb says, we do not inherit the Earth from our ancestors, but we borrow it from our children.

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APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

Glavni namen magistrskega dela je doprinesi k uspešnosti okoljskih projektov in socialnih investicij v državah v razvoju. Namen raziskave je predstaviti priporočila za tiste socialne podjetnike in neprofitne organizacije, ki razvijajo okoljske projekte v državah v razvoju.

Raziskava temelji na 4-tedenski terenski raziskavi, ki sem jo opravil v Gani. Raziskovalno vprašanje je ugotoviti, katere so ovire pri implementaciji okoljskih rešitev v državah v razvoju. Raziskava ima tri cilje. Prvi cilj je prepoznava ovir pri vzpostavitvi okoljskih rešitev v državah v razvoju. Drugi cilj je opisati prepoznane ovire ter jih kategorizirati. Tretji cilj magistrskega dela pa je predstaviti priporočila in nasvete za uspešno premostitev prepoznanih ovir.

Magistrsko delo je sestavljeno iz dveh delov. Iz teoretičnega dela, kjer uporabim deskriptivno metodo za pregled literature ter iz empiričnega dela, kjer predstavim opravljeno terensko raziskavo ter rezultate.

V prvem poglavju predstavim pregled okoljskih sprememb, opišem vpliv ljudi na okolje ter posebnosti okoljskih problemov v državah v razvoju. Naše okolje se že od nekdaj spreminja vendar še nikoli tako hitro kot v zadnjih 50 letih (Kajfež-Bogataj, 2016). Nahajamo se v dobi antropocena, v kateri je vpliv človeka tako velik, da so učinki videni na ravni globalnih okoljskih sprememb (Goudie, 2013). Slednje delimo na sistemske probleme, ki vključujejo podnebne spremembe, zakisanost oceanov in tanjšanje ozonske plasti ter na lokalne kumulativne probleme, ki vključujejo krčenje gozdov, izgubo biodiverzitete in kemično ter plastično onesnaženje (Kajfež-Bogataj, 2016; Rockström et al., 2009). Reševanje lokalnih okoljskih problemov v državah v razvoju je bolj zapleteno kot v razvitih državah. V državah v razvoju okoljski problemi namreč nastanejo kot posledica dveh prepletajočih se dejavnikov – nerazvitosti (npr. pomanjkanje infrastrukture za recikliranje plastike) in aktivnosti usmerjenih v ekonomski razvoj (npr. uporaba plastičnih izdelkov za enkratno uporabo) (Bowonder, 1987).

V drugem poglavju podrobneje predstavim štiri akterje reševanja okoljskih problemov. Regulativne institucije stremijo k zagotavljanju ravnotežja med ekonomskim, socialnim in okoljskim razvojem (Etzioni, 2009). Neprofitne organizacije so pogosto neobremenjene s finančnimi donosi in svoje aktivnosti usmerjajo izključno v socialne in okoljske rezultate (Crutchfield & Grant, 2008). Socialni podjetniki ustvarjajo inovativna in inkluzivna podjetja, katerih glavni namen je reševanje družbenih ali okoljskih problemov. V nasprotju z neprofitnimi organizacijami pa je njihov cilj tudi finančna neodvisnosti (Bornstein & Davis, 2010). Socialni investitorji pa v nasprotju s tradicionalnimi investitorji sprejemajo investicije z nižjimi donosi, saj si bolj kot za finančne rezultate prizadevajo za socialne in okoljske (GIIN, 2020).

V tretjem poglavju opišem lastnosti terenske raziskave, ki sem jo opravil. Opišem tudi izbiro države ter mojo vlogo socialnega podjetnika in raziskovalca na terenu. Nato naštejemo

udeležence in okoliščine, v katerih sem opravljal raziskovanje. Prav tako opišem raziskovalne metode, ki sem jih uporabil med terensko raziskavo. Uporabil sem opazovanje z udeležbo, neposredno opazovanje, neformalni intervju, nestrukturiran intervju, polstrukturiran intervju in skupinski intervju.

V četrtem poglavju predstavim rezultate raziskave. Z uporabo tematske analize sem prepoznal devet kategorij eksogenih ovir in eno kategorijo endogenih ovir pri vzpostavitvi okoljskih rešitev v državah v razvoju: 1 – finančne ovire (npr. financiranje projekta, odnos z investitorjem, dolgoročna odgovornost), 2 – razvojne ovire (npr. izpadi električne energije, pomanjkanje infrastrukture, nizka digitalizacija, pomanjkanje poslovnih partnerjev), 3 – okoljske ovire (npr. zahtevno podnebje, onesnaženo okolje), 4 – kulturne ovire (npr. vrednotenje časa, digitalne navade, rasne razlike, kultura smetenja), 5 – jezikovne ovire (npr. zahtevnost sporazumevanja v skupnem jeziku, odsotnost skupnega jezika, ovire pri prevajanju, različen slog sporazumevanja), 6 – sistemske ovire (npr. pomanjkanje podpore, korupcija, neurejena birokracija, omejitve za tujce), 7 – ovire upora (npr. ljudje v eksistenčni krizi, siva ekonomija), 8 – ovire varnosti (npr. ugrabitve, višja stopnja kriminala, območja z večjim tveganjem), 9 – informacijske ovire (npr. ovire spletne dostopnosti, ovire na lokaciji, zavajajoče informacije) in 10 – osebne ovire (npr. zahtevne življenske okoliščine, osebna disonanca, subjektivno ojačanje). Ovire kategoriziram in opišem ter jih predstavim s svojimi primeri iz terena in s citati iz intervjujev.

V petem poglavju na podlagi svojih izkušenj iz terena podam priporočila za uspešno premagovanje kategoriziranih ovir. Prav tako predstavim avtorski praktični pripomoček Barrier Forecast Canvas, ki socialnim podjetnikom in neprofitnim organizacijam nudi pomoč pri prepoznavanju ovir. Nato predstavim diskusijo in shemo medsebojne povezanosti prepoznanih ovir. Osebne ovire se pojavijo ko ena ali več zunanjih ovir postane prevelika. Ostalih devet zunanjih ovir pa medsebojno vpliva ena na drugo.

Raziskava ima svoje omejitve. Terenska raziskava je zaradi kvalitativne narave in raziskovalčeve vpletenosti podvržena pristranskosti. Zaradi omejenega števila opravljenih zajemov podatkov je raziskava manj zanesljiva. Ugotovitve so vezane na specifično populacijo, zato je njihovo posploševanje možno za razvijanje teorije in ne za prenos na druge specifične populacije. Za takšno posploševanje so potrebne nadaljnje podobne raziskave, ki bi predstavljeno teoretsko osnovo podkrepile ali dopolnile.

Appendix 2: Field study environment: description of the Republic of Ghana

The four-week field study was set in the Republic of Ghana. Ghana is a West African country with a population of 32 million people. It lies directly on the Greenwich East-West meridian and just a few degrees north of the equator. Apart from being a West African country, it is also part of the Saharan Africa as it lies below the Sahara Desert. On the south, Ghana is surrounded by the part of the South Atlantic Ocean, Gulf of Guinea. Apart from the south coast, Ghana is surrounded by land on the West, North, and East. It borders Ivory Coast on the West, Burkina Faso on the North, and Togo on the East. Other West African countries in the area include Benin, Cape Verde, Gambia, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Saint Helena, Ascension and Tristan da Cunha.

Ghana is a multilingual country with around 80 spoken languages. Out of these, 11 indigenous languages have a status of government-sponsored languages. From the mid-19th century, until 1957, when Ghana became the first African country to gain independence, Ghana used to be a British colony. Thereafter, English remains the only official language and lingua franca throughout the country, however more than 90% of Ghanaians speak African languages in their day to day life (Bodomo, 1996). Nowadays, the relative widespread of English presents a major advantage for many English-speaking foreign investors and entrepreneurs eager to enter West Africa. All three of Ghana's neighbouring countries, on the other hand, are Francophone. As a result, French language is now in the process of becoming the second official language of Ghana.

Before becoming a British colony, Portuguese, Dutch and Danish also had colonialist interests in Ghana, formerly known as the Golden Coast. As a result, over 30 forts and castles were built on the coastal areas since the 15th century and many of them have been used as prisons and exit points for the slave trade. Before the pre-colonial era, which naturally left behind some racism against the white race, which can nowadays occasionally and gently still be noticed, Ghana was divided into kingdoms & chieftaincies. Presently Ghana is a politically stable democratic republic governed by President and Ministers, however, a few wealthy and influential kings remain in their position until today. Big part of the land in Ghana is stool land or which means it is under the control of the nation's chiefs, which can further complicate and delay the process of buying land for any local or foreign investment (Gocking, 2005).

West Africa is a region with the highest number of detected people trafficking in Sub-Saharan Africa. While Nigeria takes the lead, Ghana is a relatively safe country and one of the safest in all of Africa. The people of Ghana are generally very warm and happy to help and the country is also considered as a friendly and safe for foreign tourists. The following areas are considered as either moderate or low: level of crime, problem of property crimes such as vandalism and theft, and problem of violent crimes such as assault and armed robbery. The problem of corruption and bribery, on the other hand, is considered as very

high. The crime rate in a metropolis such as Accra is naturally higher than in other cities and rural areas (Statista, n.d.).

Economically, Ghana has a rich and diverse natural resource base of diamonds, manganese ore, bauxite, oil, gas, and cocoa. It is also the largest gold producer in Africa. Otherwise, the largest industries are automotive, shipbuilding and digital goods. In 2019, Ghana had a GDP per capita of EUR 1763, a GDP of EUR 60.0 billion, and an annual average GDP growth rate of 6.51%, making it one of the fastest growing economies in the world with one of the highest GDP per capita in West Africa. An acronym KINGS has been formed for Kenya, Ivory Coast, Nigeria, Ghana and South Africa which is the African approximation of the Asian Tigers, grouping together the fastest-growing economies of the continent and the continent's main technology and innovation hubs (Ndemo & Weiss, 2017). Ghana is also a member of the newly established African Continental Free Trade Area (AfCFTA) that aims to provide a significant boost for the intra-African economy. AfCFTA is an ambitious initiative that aims to bring 55 African economies into a single market for goods and services, including free movement of capital and persons. When it becomes fully operational, it will become the largest free trading bloc in terms of countries involved, in the world, with a GDP of EUR three trillion and combining over 1.2 billion people (Magwape, 2018; TANA, 2020).

Ghana has a tropical climate, with the average daily temperatures throughout the entire year mostly ranging between 27°C and 32°C, and the daily highest temperatures reaching up to about 35°C to 39°C. Despite the general wet season in the summer and dry season in the winter, the climate is mainly hot and humid in the tropical forests and grasslands of the southwest, hot and dry in the vast desert stretches of the north, and warm and dry in the southeast coastal area around the capital Accra (World Bank, 2020). When I was there in May and June, the temperatures averaged at around 29°C with a few heavy rain storms cutting the overall sunny days.

The capital city of Accra on the west coast is a bustling metropolitan area and the biggest city in the country, with an estimated population of 4.2 million. It is divided into 12 municipal districts and serves as the political and economic centre of the country. The vast centralisation in the past has seen thousands of young men and women moving to the city. As a result, 265 slums have been identified in the Greater Accra Region and 56% of the population is younger than 24 years (Mba, 2010).

Ghana is an excellent starting point and a platform for a market entry into 55 Sub-Saharan countries. It is an English-speaking country with relatively high levels of safety, political stability and development. It is also characterized by many problems relating to developing countries that are waiting to be solved. And alongside its high rate of population growth and fast development, it's an area with lots of opportunities for impact investors and social entrepreneurs.

Appendix 3: Photographs from field study observations in Accra, Ghana







Source: Own work.