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CIRCULAR ECONOMY AND SOCIAL JUSTICE IN HAITI UNDER THE PRISM OF SOCIAL WORK

Case study of the Organization 'El Fuego del Sol Haiti'

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Abstract

Current development aid methods implemented by NGOs have demonstrated to generate negative consequences as for example to weaken the role of state, create dependency and reproduce imperialistic power relations. Furthermore, despite great efforts, good wills and a lot of money spent by NGOs and international agencies for development aid projects in Haiti all along the last few decades, little to no results have been reached in a long-term perspective.

The purpose of this work is therefore to present and evaluate a new strategy for the field of developmental aid, which is based in this case, on the circular economy principles and that is intended to produce a long-lasting change.

Circular economy is a relatively new method of thinking about production which will lead the economy of the future, however, its positive effects have been analyzed only in relation to the industrialized and industrializing world, while for the moment no studies have been produced to understand its applicability in the least developed countries of the world.

Therefore, this thesis is of exploratory nature and aims to start a discussion on this subject and to contribute to the understanding of the benefits that circular economy based projects could generate in fragile and failed states like Haiti. Moreover, the need of a broader participation in these projects of professional social workers with an international curriculum is sustained in this paper.

The method utilized has been the one of bibliographic research and a case study, which deeply describe a social-eco enterprise that works in Haiti applying circular economy principles to its projects, is provided.

The results confirmed our hypothesis and sustained the idea that to generate long lasting changes and to improve social justice in Haiti, these kind of projects are more than necessary. While the main limit of our method is due to the fact that we have been able to present a single case study only, to conclude, we suggest that further studies in this direction and the provision of more case studies by other researchers could better contribute to the solving of the questions generated by this research and could provide more data in support of our assumptions.

Keywords: Circular Economy, Development Aid, International Social Work, Haiti.

Resumo

Os atuais métodos de ajuda ao desenvolvimento implementados pelas ONGs demonstraram gerar conseqüências negativas, como por exemplo enfraquecer o papel do Estado, criar dependência e reproduzir as relações de poder imperialistas. Além disso, apesar dos grandes esforços, boa vontade e muito dinheiro gasto por ONGs e agências internacionais para projetos de ajuda ao desenvolvimento no Haiti ao longo das últimas décadas, pouco ou nenhum resultado foi alcançado em uma perspectiva de longo prazo.

O objetivo deste trabalho é, portanto, apresentar e avaliar uma nova estratégia para o campo da ajuda ao desenvolvimento, que se baseia neste caso nos princípios da economia circular e que se destina a produzir uma mudança duradoura.

A economia circular é um método relativamente novo de pensar sobre a produção que levará a economia do futuro, no entanto, seus efeitos positivos foram analisados apenas em relação aos países industrializados e naqueles em processo de industrialização, enquanto que, no momento, nenhum estudo foi produzido para entender a sua aplicabilidade aos países menos desenvolvidos do mundo.

Em seguida, esta tese é de natureza exploratória e tem como objetivo o de iniciar uma discussão sobre este assunto e contribuir para a compreensão dos benefícios que os projetos baseados na economia circular podem gerar em estados frágeis e falidos como o Haiti. Além disso, a necessidade de uma participação mais ampla nesses projetos de trabalhadores sociais profissionais com um currículo internacional é sustentada nesta dissertação.

O método utilizado tem sido o de pesquisa bibliográfica e um estudo de caso, para descrever profundamente uma empresa sócio-ecológica que trabalha no Haiti aplicando os princípios de economia circular, é fornecido.

Os resultados confirmaram a nossa hipótese e sustentaram a ideia de que, para gerar mudanças duradouras e melhorar a justiça social no Haiti, esses tipos de projetos são mais do que necessários. Embora o principal limite do nosso método se deva ao fato de termos sido capazes de apresentar apenas um único estudo de caso. Sugerimos portanto, na conclusão, que novos estudos nessa direção e a disponibilização de mais estudos de caso por outros pesquisadores poderiam contribuir para a resolução das questões geradas por esta pesquisa e fornecer mais dados em apoio de nossas suposições.

Palavras-chave: Economia Circular, Ajuda ao Desenvolvimento, Serviço Social Internacional, Haiti.

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Abbreviations

BE	Behavioral Economics
CE	Circular Economy
CIH	Change is Hard
CRI	Carbon Roots International
CRESFED	Centre de Recherche Sociale et de Formation Economique pour le Développement
DR	Dominican Republic
EMF	Ellen McArthur Foundation
ESMAP	Energy Sector Management Assistance Program
EU	European Union
FdS	Fuego del Sol - Haiti
GACC	Global Alliance for Clean Cookstoves
GDP	Gross Domestic Product
IHSI	<i>Institut Haïtien de Statistique et d'Informatique</i>
LDCs	Least Developed Countries
LE	Linear Economy
LLLA	Listen. Lead. Listen Again
NGO	Non-Governmental Organization
PM	Particulate Matter
SEE	Socio-Eco Enterprise
SDGs	Sustainable Development Goals
SWG	Solid Waste Generation
UN	United Nations
UNHDI	United Nations Human Developing Index
UNWPP	United Nations World Population Prospects
US	United States
USAID	United States Agency for International Development
WB	World Bank
WDGs	World Development Goals

Introduction

The main objective of this work is to understand in which measure the principles of circular economy (CE), the alternative economic system of which in recent times we hear more and more often in our Western society discourse, could be applied and become an everyday practice for local development in Haiti. Secondly, it will matter a lot for this research, that wants to deal with the problem from the point of view of the social work discipline, to analyze the impact that the circular economy model can have in fostering social justice, and therefore, to evaluate not only the benefits that CE can bring for the natural environment and for the economy, but also for the people. What we want to do, quoting Schröder, Anantharaman, Anggraeni and Foxon. (2019, p. 211) is to give voice and more recognition “to the missing social and human dimension in current CE discourse”.

As we said our investigation will be dedicated specifically to one country: Haiti. The Republic of Haiti represents one of the least developed nations on earth (United Nations - UN, 2018) and with its strong economical and sociological problems it has become the archetypical example of fragile and failed states (Muggah, 2010). Haiti “currently has the lowest per capita income [of the American continent], the highest rate of infant mortality, the lowest life expectancy, the highest rate of illiteracy and one of the highest rates of unemployment” (Dupuy, 2019, p. 4).

Furthermore, the country ecological balance is collapsing and the consequences of this fact are already, and will every day more, contribute to impoverish the local population. Deforestation, desertification, landslides, floods are just some of the consequences of the unsustainable exploitation of the country's wood resources. These last are used especially for the production of charcoal, which represents the most widely diffused cooking fuel used in Haiti.

In Haiti, we have thought identified an organization that is operating using CE principles for the production of an ecological fuel intended to substitute charcoal and that, in our ideas, constitutes the perfect subject for our study. This organization is called ‘El Fuego del Sol’ (FdS) and its project will be described and analyzed in the case study provided in the fourth chapter of this research.

The first part of this dissertation will be thus dedicated to describing the Haitian current reality. Here, using the available literature we will trace a brief history of the Circular Economy and Social Justice in Haiti Under the Prism of Social Work

country, taking in consideration the historical and current reasons that we think have been responsible to create the problems that are affecting negatively the everyday life of the Haitian people today. Two, are of extreme importance for the understanding of this work and will be defined as extreme poverty, the first, and severe destruction of the natural resources, the second. In the second part of this chapter we will try to understand the relationships that link these two phenomena in Haiti. To do that we will investigate the role of the principal actors involved, that are, essentially, the many international organizations that are working and operating in the country, the Haitian population, and the Haitian government.

Once the geographical, economic, political and sociological frames in which this research develops will be cleared in chapter one, we will begin chapter two introducing and explaining the concept of circular economy. Later in this chapter, the data we collected from the available publications concerning waste generation and management in Haiti will be analyzed. The purpose is to understand in which way and on which scale circular economy could find application in Haiti and if it could represent a useful tool in this country (and in other underdeveloped countries) for social work activities and projects. For these reasons, we will be focused on understanding how circular economy can contribute to limit waste and non-renewable resources destruction from a side and the impact it has on social justice and quality of life, on the other side.

The third chapter will be dedicated to explaining our methodological choices, underlying strengths, and limitations of our method.

The last chapter will be finally centered on the case study. Here we will deeply describe and analyze the organization we have chosen. As it has been introduced already, this organization is working in Haiti using circular economy principles as the base system for its current and future projects. In this chapter what we want to do is to present what we believe a positive example of applied circular economy in Haiti, in order to contribute to the solving of the following question: can circular economy based projects become a strategy for social work activities in underdeveloped realities? Moreover, what we would like to understand is the impact that circular economy driven projects can have in improving social justice in a reality such as that of Haiti.

In other words, what does it matter is to investigate on the grade of interrelation between circular economy principles, environment preservation, enhancement of the local economy and generation of social value (for example by creating new job opportunities) using as a case study the mentioned organization of 'El Fuego del Sol'. The belief behind this research is that it is possible, and necessary, to work using this model in Haiti as in

many other underdeveloped countries and the case study we will provide in the last chapter should contribute to confirm (or refuse) this idea.

By the end, a suggestion will be made: development aid in Haiti should be less and less a monopoly of foreign aid organizations (non-governmental organizations - NGOs and national or international agencies) and should be no longer anchored to the reductive model of emergency/charitable aid. Vice versa, development aid should enter the market to become an economic activity that generates incomes for the locals, cleaner solutions for the environment and, mostly, that is carried out by the Haitians, for the Haitians.

We hope that this work will be a useful read for practitioners who are looking for guidelines and evidence-based pieces of advice for their social activities in underdeveloped realities as well as for those that are genuinely interested in reach the maximum benefits for the target populations from their projects.

Chapter I

The Haitian Socio-Ecological Crisis

1.1 Poverty, Deforestation and of the Other Problems in Haiti

The Republic of Haiti with its 27,750 square kilometers occupies the western third of the island of *Hispaniola*, which it shares on the East with the Dominican Republic. At the North, it is bathed by the Atlantic Ocean and at the West and South by the Caribbean Sea [Figure 1].



Figure 1: Political and Administrative Map of Haiti
(United Nations, Geospatial Information Section, 2019)

The total population of Haiti is today close to 11 million inhabitants (United Nations World Population Prospect - UNWPP, 2018) while in 1981 the Haitians were around 5

million (Cornevin, 1982), symptom of a strong population growth typical of the so-called underdeveloped countries. A great part of the Haitians resides today in the capital, Port-au-Prince, which is the most populous city of the country and counted in 2015, following the *Institut Haïtien de Statistique et d'Informatique* (IHSI, 2015), 2.618.894 inhabitants.

In the last two decades Port-au-Prince alone, became an attractive pole for thousands of peasants as a consequence of the disastrous desertification of the countryside that made many lands impossible to be cultivated anymore. This massive movement of people has contributed to the disproportionate growth of the city and gave birth to many new suburban areas that shared with the countryside only a lack of almost every type of public service. This massive disproportionate growth of the Haitian capital, when compared to the other biggest cities of the country, appears so high that Port-au-Prince has now in result a population that is “over seven times the population of the second largest city of Les Gonaïves (356.324) and nearly ten times the population of the third largest city of Cap-Haïtien (274.404)” (Ghilardi, Tarter & Bailis, 2018, p. 7).

The Haitian society is changing very quickly to what was once a peasant and rural society to an urban one.

1.1.1 Poverty in Haiti: historical reasons

Haiti is a country which hides a long and interesting history. As for the other islands of the Caribbean area its territory has been inhabited for centuries by the indigenous Taino people. The Taino society was complex and was divided into two classes, the *naborias* (commoners) and the *nitaínos* (nobles) and governed by male chiefs known as *caciques*, who inherited their position through their mother's noble line (Deagan, 2004). The Taino have been the first American inhabitants to meet with the Europeans and in the Haitian territory was built the very first European settlement of the Americas, as “*débarqué le 6 décembre 1492, Christophe Colomb fit construire près du site actuel du Cap-Haïtien, le fort de la Nativité*” (Cornevin, 1982, p. 3).

Since their arrival the Spanish colonizer become to exploit the Taino which by the end of the XVI century were almost completely disappeared, decimated by European diseases like smallpox and by the harsh treatment they were subjected by the new occupiers of their territories (Pons, 2017).

At the beginning of the XVII century the Spanish did not yet took control over the entire island and, especially from 1629, the French started to ‘illegally’ occupy its western territories that have been subsequently recognized as a French possession with

the treat of Ryswick in 1647. By that time no more Taino were living on the *Hispaniola* Island and both the Spanish and French colonizer had to import African slaves to replace the former in the work in the sugarcane, cotton and coffee plantations.

One century after the treat of Ryswick, the Caribbean French colony of West *Hispaniola* was considered one of the richest on earth. It is reported that “*au XVIII siècle [...] elle alimente le tiers du commerce extérieur français, fournissant en particulier les trois quarts de la production mondiale de sucre*” (Cornevin, 1982, p. 4). This is also confirmed by other authors who wrote in more recent times. For example, Cheney (2017, p. 4) who reported that “by 1742, the colony produced 42.000 tons [of sugar] against the 16.000 produced in Martinique and Jamaica combined”. The high economic value of this colony, therefore, had no equal. But this richness had also a cost, and while it made the colony earn the nickname of ‘Pearl of the Antilles’ the cost was paid by the slaves that were brutally treated, much worse than in the other European-American colonies (Brown & Brown-Murray, 2010; Ott, 1987).

These conditions brought the enslaved men of the French Saint Domingue, taking advantage of the economic troubles and the political dissension generated by the French revolution in Europe, to revolt in 1791 to their rulers. In 1804, after a decade-long conflict, and after the victory of the African slave-soldier over three Western armies, including Napoleonic France, the independence of the former French colony has been declared under the name of Haiti, the original Taino name of the Island. This fact represented the most important event in the history of the country but, it occupies an important place in the World History as well, being the first, and the only one to succeed, the revolt of slaves to a colonial power that gave birth to an independent nation.

The bloody revolution headed by Touissant Louverture (1743-1803) and Jean-Jacque Dessalines (1758-1806) led to the abolition of slavery and to the independence of the country, but did not put an end to the troubles of the Haitian people.

First of all “*la nouvelle République d’Haïti [...] fut mise au ban de toutes les nations, toutes esclavagistes à cette époque*” (Blancpain, 2010, p. 1). Moreover, as reported by Edmonds (2013, p. 440):

After the success of the Haitian Revolution in 1804, the colonial powers of the time decided that an independent Haiti would pose a threat to the entire system of slavery and colonialism in the Americas. After numerous attempts to recolonize the newly established republic through military force alone were defeated, the international powers of France, the USA, England and Holland put aside their

colonial rivalries in a determined effort to destroy the revolution in its infancy by bleeding it to death financially.

Many, in fact, are the clues that lead us to think that the reason of the poverty of Haiti is not attributable to the Haitian chiefs maladministration of the country alone, but, on the contrary, that it is a social construct, partly wanted by the colonizing nations. These lasts, having lost the battle on the military field, given the supremacy of self-liberating ex-slaves in battle, have committed themselves to keep the Haitian nation in a state of both economic and material dependence.

Relationships with the United States (US), for example, have been since the beginning quite problematic. First, the US government did not recognize the Haitian independence until 1865, when the American civil war ended and slavery was abolished in the US too. Furthermore, by 1915 the US army occupied the country, occupation that lasted until 1934.

The causes of the occupation have been identified by the historian of Haiti François Blancpain (2010) as the following:

- 1- to put an end to the political and social unrest that was shaking Haiti. Indeed six presidents succeeded between 1911 and 1915, the last assassinated by the crowd;
- 2- to avoid any trouble in the area, as the Panama channel was going to be inaugurated;
- 3- to take advantage of France that was momentarily absent in Haiti as it was involved in the first World War in Europe.

With the left of the American Army in 1934, the country's political life returned to be stained of blood and violence and will see the rise of several dictators, like the long-lasting dictatorship of the Duvaliers father and son (that lasted from 1957 to 1986) but, no improvements in the country's quality of life have been registered.

Haiti represents today the poorest nation of the Western Hemisphere (Williams, 2011) and one of the poorest on Earth. It ranks 168 out of 189 countries on the United Nation Human Developing Index (UNHDI, 2018) and has a life expectancy at birth of only 57 years (Pomeroy & Ragone, 2015).

Several problems afflict the country which has sunk, especially during the last century, into a spiral made of poverty, deprivations and human generated natural disasters from which, it seems, it will not be able to get out very soon. Moreover, a disproportionate increase in the population, that as we have seen has doubled in less than 40 years, combined with the total lack of raw materials and access to basic services

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suitable to satisfy the needs of everyone, is only contributing to worsens the situation. In fact, as it is reported in the latest study of the Global Alliance for Clean Cookstoves (2017, p. 36): “rural populations suffer from extremely limited access to basic services; 10% have access to electricity and less than 8% have access to drinking water”.

In addition to all these troubles, on January 12, 2010, a turning point will forcefully mark forever a before and an after in the history of the country:

At 4:53 p.m. local time, a magnitude 7.0 earthquake struck the Republic of Haiti with an epicenter located approximately 25 km south and west of the capital city of Port-au-Prince. Near the epicenter of the earthquake, in the city of Léogâne, it is estimated that 80%–90% of the buildings were critically damaged or destroyed. The metropolitan Port-au-Prince region, which includes the cities of Carrefour, Pétion-Ville, Delmas, Tabarre, Cité Soleil, and Kenscoff, was also severely affected. According to the Government of Haiti, the earthquake left more than 316,000 dead or missing, 300,000 injured, and over 1.3 million homeless (GOH, 2010; in DesRoches et al., 2011, p. 1).

The earthquake that hit Haiti has been one of the most disastrous events of all times, and the consequences of it are still visible today in Léogâne and Port-au-Prince, were many building still lie destroyed, or haven't been reconstructed yet as, for example, the presidential palace.

Extreme poverty, in Haiti, afflict more than

80% of the population (Williams, 2011) and the country has been included, since 1971, in the United Nation list of the Least Developed Countries of the world [Table 1].

Among the states of this list, moreover, Haiti is one of the countries that is achieving the least positive results in the gross domestic product (GDP) growth: “according to World Bank data (2018), countries in the least developed country category

Country	Year of inclusion	Country	Year of inclusion
Afghanistan	1971	Malawi	1971
Angola ¹	1994	Mali	1971
Bangladesh	1975	Mauritania	1986
Benin	1971	Mozambique	1988
Bhutan ²	1971	Myanmar	1987
Burkina Faso	1971	Nepal	1971
Burundi	1971	Niger	1971
Cambodia	1991	Rwanda	1971
Central African Republic	1975	São Tomé and Príncipe ³	1982
Chad	1971	Senegal	2000
Comoros	1977	Sierra Leone	1982
Democratic Republic of the Congo	1991	Solomon Islands ⁴	1991
Djibouti	1982	Somalia	1971
Eritrea	1994	South Sudan	2012
Ethiopia	1971	Sudan	1971
Gambia	1975	Timor-Leste	2003
Guinea	1971	Togo	1982
Guinea-Bissau	1981	Tuvalu	1986
Haiti	1971	Uganda	1971
Kiribati	1986	United Republic of Tanzania	1971
Lao People's Democratic Republic	1971	Vanuatu ⁵	1985
Lesotho	1971	Yemen	1971
Liberia	1990	Zambia	1991
Madagascar	1991		

* The list will be updated when new decisions become available.

Table 1: List of the Least Developed Countries (United Nations, 2018)

averaged 4.83% GDP annual growth between 2011 and 2017, while Haiti averaged 2.75% during the same period” (Ramirez, 2019, p. 2).

That Haiti is moving in reverse it is clear. For example, as it has been reported by Ramirez (2019, p. 2): “Haiti’s GDP plummeted from 3.08% in 2009 to -5.49% in 2010” due to the earthquake. “After experiencing an uptick in 2013 of 4.23%, the annual GDP growth rate in 2014 dropped to 2.81% and continued to fall in 2015 to 1.21%. In 2016, there was a slight increase in the GDP growth rate to 1.45%, but it subsequently dropped to 1.17% in 2017”. From the last data available, in 2017 “economic growth in Haiti slowed again, which has been partly attributed to the poor performance of the country’s agricultural sector which fell by 5.1% over the first half of 2017. In sum, Haiti has experienced continuous declines in growth during recent years” (Ramirez, 2019, p. 2) which, summarizing, means that “in terms of GDP per capita, Haiti has not seen any improvements during the past 20 years”. (Ramirez, 2019, p. 3).

Paul Collier included Haiti in his book “The bottom billion” (2007) as one example of the many underdeveloped and stagnant economies of the world, the majority of them located in the African continent but of which Haiti constitutes the homologous, and perhaps unique, American case. The population of Haiti is, following Collier, part of the bottom billion of people who have not been touched by any sort of development yet, nor by any improvement in their living conditions, while today, at the opposite, four billion of people globally, are finally living and working, with some dignity and hope, in developing countries.

1.1.2 A disastrous and misunderstood ecological situation

The environment of Haiti, partly as a consequence of the impoverished social circumstances described above, became in the last decades one of the most devastated on Earth. As reported “Haiti has dropped from sixty percent forest cover to less than one percent. Haiti has become an environmental disaster and a human catastrophe” (Williams, 2011, p. 20).

If on the one hand, as we shall see, this is a direct consequence of human factors, on the other hand the tropical climate of the country and the general overwarming of the Earth's crust are also strongly contributing to the advancement of the desertification phenomenon in this country. In fact it is likely that “more than 50% of its total area will be in danger of desertification due to climate change, decrease in precipitation, and more intense and frequent extreme weather events” (Sheller & León, 2016, p. 2).

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Deforestation [Figure 2], while is an issue on itself, is also responsible for several other negative consequences, for examples, the ones reported by Williams (2011, p. 20): “with the forest cover gone, floods ravage the country at each rainfall and the topsoil washes into the sea”, while “one of the major environmental hazards [...] is desertification”.



Figure 2: section of the border between Haiti (left) and Dominican Republic (right) where the effects of desertification are particularly visible (Google Maps, 2019)

Desertification is severely affecting Haiti and its people but, as a matter of fact this Caribbean republic alone does not represent an exception as 250 million people globally are directly affected by it (Williams, 2011, p. 21):

Africa, Asia, and Latin America are the most threatened by desertification. Although better known for their rain forests, Latin America and the Caribbean are actually about one-quarter desert and dry lands. Poverty and pressure on land resources are causing land degradation in many of these dry areas.

As reported, poverty and deterioration of the natural environment, therefore, are linked to one another in an inseparable bond where one is responsible for the other and vice versa. This creates a deadly symbiosis, which in the countries affected, such as Haiti, will only push ever further downwards, finally making extremely difficult to reverse the negative trend: “Haiti's widespread poverty is a cause and a symptom of the general deterioration of its natural environment” (Silva, 2011, p. 67). Nevertheless, it is also recognized, in fact, that “the reasons for this deterioration are multiple: poverty level, demographic pressure, agricultural techniques and insecurity regarding land tenure and, therefore, go Circular Economy and Social Justice in Haiti Under the Prism of Social Work

beyond the strict scope of energy” (ESMAP, 2007, p. xv). All factors that, especially in regards of poverty and demographic pressure, strongly affect life in this area of the Caribbean and that, mixed with a high demand for wood and charcoal as it happens in Haiti, brought the country environmental balance to collapse.

However, although all the researchers in this field agree that the Haitian environmental situation constitutes a terrible catastrophe, some confusion is made about the percentage of native forests still present on Haitian soil. For a quick and easy reading of the different data reported in the academic articles about the percentage of remaining forest cover in Haiti, we refer to the table made by Churches, Wampler, Sun, and Smith in 2014 [Table 2].

Peer-reviewed publications	Amount of forest cover reported	Source of data or citation
Bannister (2003)	Under 2% in 1994	UNDP (1996)
Dolisca et al. (2007)	3%	FAO (1988)
Erikson (2004)	<1%	The Miami Herald
Foxx (2012)	<2%	None given
Hedges (2006)	4%	FAO (2005)
Higuera-Gundy et al. (1999)	5%	None given
Hosonuma et al. (2012)	1–25% ^a	FAO (2010)
Huber et al. (2010)	<1%	Paryski et al. (1989)
Koyuncu and Yilmaz (2009)	10%	None given
Mainka and McNeely (2011)	1%	None given
Pellek (1990)	3%	None given
Rudel et al. (2005)	3.2%	FAO (2000)
Williams (2011)	<1%	None given
Wright (2005)	Supports less than 10% of potential closed-canopy forest	None given

Table 2: List of the different data reported in academic articles on the percentage of forest cover remaining in Haiti (Churches et al. 2014, p. 204)

If, as shown in the table, it is clear that no one to date knows exactly how many trees covered spots have been spared in Haiti, a new trend, let's call it ‘negationist’, arose in the academic world. This trend started in 2018 with the publishing of a research with a totally new and revolutionary view of the phenomenon. The title of this study is ‘Potential environmental benefits from woodfuel transitions in Haiti: Geospatial scenarios to 2027’ and the authors are Ghilardi, Tarter, and Bailis who worked on it financed by the World Bank. This research calls into question what has been affirmed in the past that is that the collection of wood for the production of charcoal, driven by the widespread

poverty of the Haitians, is the principal responsible for deforestation in Haiti. The report, whose purpose is to shed light on the production and use of charcoal in Haiti, essentially sees the phenomenon of the wild deforestation of the island in fewer alarmist terms. Ghilardi and his colleagues, starting from the assumption that “deforestation and charcoal production in Haiti are a widely misunderstood phenomena” (Ghilardi et al. 2018, p. 1) express their doubts about the fact that the Haitian original forests have almost completely disappeared. This assumption finds its reasons in the fact that, according to the authors, although in the past it was commonly believed that Haitian forests would have completely disappeared at the turn of the millennium, Haitians continue to produce charcoal in great quantities and, mostly, to find trees to do so. According to the authors of this research, in fact, part of the Haitian charcoal would come from renewable sources, being many of the island's species of trees of rapid growth. Finally, in this report, is expressed the positive belief that in Haiti, at least 30% of the original forests are still lying untouched.

As we disclosed, there is no agreement among the experts on this subject and a great confusion has been made in regards of the amount of deforested lands and virgin forests remaining on Haitian soil (Churches et al., 2014). Furthermore also the causes of deforestation, in the past taken for granted as the consequence in the first place of the production of charcoal to satisfy the internal need of a nation that still relies almost completely on the use of this biomass for domestic use, are also put under discussion by the research of Ghilardi and colleagues (2018). For example, if from a side we have assumptions like: “the volumes of firewood annually gathered exceed the trees’ natural regeneration capability” (Energy Sector Management Assistance Program - ESMAP, 2007, p. 27) from the other Ghilardi, Tarter, and Bailis (2018, p. 1), affirm, in strong contrast with it, that “is perhaps nowhere more evident than the misplaced belief that charcoal production is the principal driver of deforestation”.

At any rate we reserve the right to distance ourselves from this controversy, aware that the massive production and demand for charcoal in Haiti has strongly contributed and is still contributing to the process of deforestation. Furthermore, charcoal, as will be shown later more in detail, has deleterious effects on the organism of the people that use it daily for cooking, the most of which are women. For these reasons, and for others that will appear more clear later on, we will continue to consider the use and production of charcoal in Haiti as a highly negative factor for the country quality of life which, sooner or later, will have to be replaced or however strongly limited in its use.

To conclude, again with the words of Williams (2011, p. 22): “severe environmental problems have been among the roots of Haiti’s social, economic and even political crises”. Accordingly, if we want to improve social justice in that country we cannot avoid considering the environment as the target on which we must allocate our efforts and to which we must direct the design of our strategies.

1.2 Unsustainability: From a Global Trend to a Local Disaster

The actual system of production, as we will see more in detail in the second chapter, is nowadays no more sustainable generating tremendous consequences both in ecological and sociological terms (Wijkman & Skånberg, 2015). To assure to the future generations good quality standards of life, health and finally social justice, accordingly, we need to find global sustainable alternatives for our production processes.

The international recognition of this problem is rooted in the World Summit of 2000 when 167 member states of the United Nations signed the World Development Goals (WDGs). Rectified in 2015, the World Development Goals comprehend 7 central points, or objectives, to be achieved in the next 15 years, that time by 2030 (United Nations, 2014).

As we will see, many of the problems addressed by the WDGs are concentrated in Haiti. For the moment, we report the two that are the most purposive for understanding our point.

The first commitment of the list (WDG1) states clearly: “eradicate extreme poverty and hunger”. The commitment number seven (WDG7) instead is directly related to sustainable development and represent the following challenge: “integrate the methods and concept of sustainability to the management of natural resources by incorporating the principle of sustainable development” (Wysokinska, 2017, p. 102) in order to “develop and apply methods to reverse the loss of natural resources and stop the degradation of the environment and reduce biodiversity loss” (Wysokinska, 2017, p. 102).

Also, the three main international organizations of social workers: the International Federation of Social Workers (IFSW), the International Association of Schools of Social Work (IASSW) and the International Council on Social Welfare (ICSW), recognized the importance to work toward social justice and environmental sustainability. This latter commitment constitutes the 3rd of the four ‘core themes’ identified in Hong Kong in 2011 by more than 3000 social workers and then, officially

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made public with the publication of the document ‘The Global Agenda for Social Work and Social Development: Commitment to Action, 2012’. It is made clear, though, that the savage exploitation of non-renewable raw materials of the last decades is directly related to poverty, economic inequalities and other problems, the most of which occurs especially in developing and underdeveloped countries and, in particular way, in Haiti.

According to this, the ‘Haitian case’ has found a place on the top of the action list of many international aid organizations since, at least, three decades. So, why no significant results have been reached so far in the most ecologically devastated American country, while, also one of the major experts on the sector affirms that “the almost complete deforestation of Haiti is potentially reversible” (Collier, 2009, p. 17)? Let’s start from the beginning.

In developing and underdeveloped countries the economic value of forests constitute the main cause of their disappearing. Ten years ago already, every twelve months 2.5 million hectares were disappearing in central America and 1.3 million in India only (Dolisca, McDaniel, Teeter, & Jolly, 2007), in order to make space for cattle ranching and crop plantations.

Also in Haiti, during its colonial time, trees were chopped down to make space for plantations, mostly coffee, cotton, and tobacco. Accordingly the Haitian deforestation started during the Spanish, and later French rule of the country, but in fact this was only representing the onset of the problem.

Deforestation in Haiti is today considered as a consequence of many factors, including global warming and charcoal production. If from a side charcoal represents in Haiti the most widespread fuel for cooking food from the other side its production constitutes an economical way of sustentation for the local population and, it is reported that (more than ten years ago) “200,000 Haitians [were] employed in the charcoal value chain” (Global Alliance for Clean Cookstoves - GACC, 2007). In fact “charcoal production is a necessity for many rural households, constituting on average 25% of rural income. In the South Department, charcoal production can account for over 50% of monthly incomes” (GACC, 2017, p. 61).

The unsustainability of this process originates from the fact that around ten tons of wood are destroyed for every one ton of charcoal produced. “This represents a loss of resources: households using firewood for cooking use fewer trees than those using charcoal” (ESMAP, 2007, p. 21) while the charcoal is used for daily cooking by the majority of the Haitian urban population. Accordingly “93% of Haitian households rely

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primarily on solid fuel (wood or charcoal) for cooking” (Global Alliance for Clean Cookstoves - GACC, 2017, p. 32) while, on the contrary “LPG is used by only 3% of total households in Haiti, primarily among wealthy families in Port-au-Prince” (GACC, 2017, p. 35).

As it is indicated by the United State Agency for International Development (USAID, 2011):

The consumption rate of charcoal in Port-au-Prince alone is estimated to be approximately 413,000 tons/year, based on a population of 3.5 million with an average household size of 4.9 and a 70% charcoal usage rate. Clearly, the depleted Haitian forest resource base alone is not sufficient to meet current demand.

The result of this unsustainable situation is that the Haitian original forests have almost completely disappeared. Although, as reported, in the scientific world there is no agreement on the number of original forests remaining on Haitian soil, the percentages are howsoever alarming, and vary on average from two to thirty percent based on the different sources.

For example it has been reported that “the forested land cover stood at 98 percent in 1878 but dropped to 6.7 percent by 1978” (Pomeroy & Ragone, 2015, p. 49). From 1978 up to date charcoal production haven’t spare the remaining threes and, by 1998 it appears that “the nation has only 2 percent of forest cover remaining” (FAO, 1998; in Pomeroy & Ragone, 2015, p. 49). And also: “The present vegetation cover is estimated to be 1-2 percent” (ESMAP, 2007, p. 27).

This situation represents, without any doubt, an ecological disaster and clearly constitute a black dot for the signatories of the Millennium summit of 2000 because in the last 15 years, for which high and important commitments on ecological sustainability have been signed, little has been improved in our fragile Caribbean country and, as we have shown, the deforestation advanced inexorably during the course of the committed period. What has been left, today, is a perfect example of how bad things can go wrong when an environment economy, in this case, trees and charcoal production, is clearly no more sustainable. In 1992, Hosier and Bernstein were writing: “Haiti presents an example of one of the most degraded physical environments in the tropics” (Hosier and Bernstein 1992, p. 130; in Pomeroy & Ragone, 2015, p. 52) making easy to understand for how long the Haitian problem has been neglected not only by the local authorities but also on an international level.

The consequences of the deforestation have been identified as the following: “soil erosion and loss, rocky desertification, and water quality decline and shortage” (Pomeroy & Ragone, 2015, p. 60) that, in practice, mean the worsening of the quality of life for the Haitian, especially the rural, population.

This situation as we have shown is today quite complex and it appears that there is not a clear direction to follow in order to reverse the deforestation process. In addition everything tells us that what Lundhal was writing in 1991 is still unchanged and is still valid today, that is a “lack of investment in the resources (e.g., tree planting and husbandry) and overexploitation of the existing resources while government land in the Haitian hinterland is poorly controlled, and as a result any peasant may gather wood from it” (Lundhal, 1991, p. 60; in Pomeroy & Ragone, 2015, p. 51).

Here we approached unsustainability from a global to local perspective. We have then seen how ‘desperate’ is the call of nature in the poorest country of the Western Hemisphere, Haiti, and the consequences that such a natural catastrophe has generated on the everyday life of its people. Now, we are going to analyze the role of the government and international aid organizations in dealing with this problem. Haitian disaster may not be perceived by many of us as part of our problem. But what happened and what is happening in Haiti is, for sure, an alarming signal of the risks that unsustainability can produce. Everything makes us think that, at some point, if we continue to harness the environment in the way we are doing, also our industrialized Western countries would not be spared by similar ecological problems, with all the negative consequences they will generate on the quality of life of its inhabitants and on one of the future generations.

1.3 The Role of the Government and International Aid Organizations

In the previous topic of this dissertation, we have reported the many problems that are affecting Haiti trying to outline their historical causes and international recognition.

Now, what moves our interest is the willingness to understand the effective role of the government and of the many NGOs and other international organizations that operate and are operating in the country of Haiti and that are dealing with the mentioned problems. To clarify this aspect is of particular importance, because, the case study that we will present subsequently will be centered on one organization involved deeply in these dynamics. However, our organization has never requested NGO status recognition but has been registered by the Haitian government as a socio-eco enterprise (SEE). Here

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we will provide to the reader the means to understand the motivations behind this choice. Since the ‘El Fuego del Sol’ enterprise and its contribution in improving the Haitian social justice, economy and environmental degradation will be analyzed in depth subsequently, for the moment we will not dwell further with it.

In the specific, here we would like to answer to the following questions: how the Haitian government deals with deforestation and related problems? But also, quoting Schuller (2007, p. 96): “are NGOs "good" or "bad" for Haiti's development? Are they closer to Haiti's people and less corrupt than the government, or are they tools of foreign imperialism? Are NGOs the solution to Haiti's poverty, exclusion, and centralization, or are they part of the problem?”.

The government in Haiti is scarcely involved in fostering the people wellbeing and part of the reason can be sought in historical causes. For example, as soon as the American army left the country in 1934:

les tentatives [of the government] de modernisation du monde paysan, très majoritaire, se firent de façon impérative, pour ne pas dire autoritaire, c'est-à-dire sans concertation et sans adhésion sincère des paysans, de sorte que tout redevint comme avant, sitôt les Américains rembarqués (Blancpain, 2010, p. 2).

Furthermore, especially in the beginning, the newborn Haitian government “could not build schools, hospital or roads because nearly all of the available money went to pay France” (Edmonds, 2013, p. 441) as a reimbursement for its independence. This has been the compromise that Haiti had to bear as compensation for its freedom. But what happens when the debt was finally paid off in 1947?

The Haitian government is perceived today as corrupted by the majority of the Haitians and has lost, since a long time, the trust of the people. In fact, many of the problems of the country are the result of the lack of assistance publically provided, and, on the contrary, by the extreme level of privatization of all the basic services, that, as a consequence, became almost completely unaffordable for the majority of the people.

As reported by Edmonds “before the 12 January 2010 earthquake, Haiti had the most privatized social-service sector in the Americas, with over 80 percent of the country’s basic services provided by non-governmental organizations” (Dupuy, 2010; in Edmonds, 2013, p. 440). This is confirmed by many other authors, as for example, Klitgaard (2010, p. 9) who states: “In Haiti [...] most social services are [...] provided by NGOs and private sector. In part, this reflects the weakness of Haiti’s government, particularly in rural areas”. Therefore, if on the one hand, the state is practically absent in

providing for the basic needs of its citizens, on the other, at the legislative level, how did it regulate the exploitation of non-renewable natural resources?

The answer can be found in the Energy Sector Management Assistance Program study of 2007, in which it is reported how “concerning the environment in general, [...] some 10 decrees and about a hundred laws” (ESMAP, 2007, p. 38) have been produced in Haiti by the different governments.

As it is reported by the latest study on charcoal production and consumption trends published in 2017 by the World Bank: “the first Haitian government efforts to slow the cutting of trees in Haiti were enacted in 1804, the year of Haitian independence, although they were driven more by agricultural production considerations rather than strictly environmental concerns” (Bellande, 2010, p. 3; in Ghilardi et al., 2018, p. 1).

The evolution of legislation concerning the environment, following the ESMAP study of 2007, can be resumed in four main periods that we believe is useful to report here:

- First period: 1804-1880. Haiti had great forests under intense, little regulated, exploitation;

- Second period: 1880-1950. Resources started to become scarce. First regulation have been produced, like the need for authorization and taxes for cutting, specification of locations and species which can be cut out and taxes on charcoal transportation;

- Third period: 1950-1995. The begins of decadence. Legislators become aware of the negative results of the control over the exploitation of forests and have begun to talk about reforestation;

- Fourth period: from 1995 to nowadays. The increased frequency of natural disasters made clear the failure of regulation and reforestation plans, while a new trend becomes the dependence on humanitarian work, in almost all cases in the hands of foreign organizations.

In conclusion to what has just been said, it can be inferred that the dramatic situation that the Haitian people are experiencing is a consequence not only of the government's ruinous policies but also of the weakness in enforcing these laws, which resulted in a failure in limiting the environmental exploitation and destruction. Let's underline this concept, again, but with more authoritative words than ours:

while the Haitian government recognized early on the related challenges around proper land and natural resource management—and passed corresponding legislation to address these challenges—they were ultimately not equipped to

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effectively and equitably enforce these laws at the national level (Ghilardi et al., 2018, p. 2).

Consequently, if on the one hand, we have in Haiti a weak and absent state, on the other hand we have, as we will argue, a disproportionate presence of non-governmental organizations. These latter took charge in many cases and with varying degrees of success, of ensuring to the population the services that the state failed to guarantee.

The question is, therefore, have the non-governmental organizations, succeeded in what the government has failed miserably for?

The discourse on NGOs responsibilities in Haiti started in the '90s but few studies have been produced on the subject. Two of the works published in that decade are particularly worth to be reported. Schuller (2007) selected them as the most representatives of the two different positions between the academic world. The first one sees the NGOs presence in Haiti in positive terms. It has been published in 1997 by the World Bank and entitled "Haiti: NGO Sector Study". The second one has been published the very same year by the *Centre de Recherche Sociale et de Formation Economique pour le Développement* (CRESFED) and, as the title suggests: "*Haïti, L'Invasion des ONG*", was very critical of NGOs, "calling their apparently sudden appearance and role an 'invasion'" (Schuller, 2012, p. 96).

Other authors have been strongly critical as well of the NGOs massive presence in Haiti and South America, as for example Petras, who, also 1997 published "Imperialism and NGOs in Latin America". In this paper, the massive presence of NGOs in the southern and central American states is described as a way to replicate imperialism and, under certain circumstances, as a way to keep some nation in a state of perennial dependence on the richest nations, to the only benefit of the latter.

The other early critical document we mentioned, has been "*Haïti: l'Invasion des ONG*". In it, the author argued that non-governmental organizations "are tools used by multilateral organizations to impose their vision of development, representative democracy and privatization, what the author [Pierre Etienne] termed 'liberalism in its most savage form'" (Schuller, 2012, p. 102).

In more recent years, other studies have been produced, while the majority of them have come to the conclusion that the massive presence of NGOs in Haiti, 'beyond good intentions', is not having a positive impact on the economy of the country. It is reported by Edmonds (2013, p. 443), for example, that "the relationships between the NGOs and their donors continually undermine the Haitian people's right to self-Circular Economy and Social Justice in Haiti Under the Prism of Social Work

determination, while these organizations are at the same time cultivating and profiting from the poverty they are entrusted to fight”. The author, in this article, is very critical of the current situation that brought Haiti to be nicknamed as an ‘NGOs republic’. Again, following Edmonds (2013, p. 444): “NGOs work in very select communities; atomizing the society and eroding the notion that access to healthcare, education or sanitary conditions are a public good, not something to be delivered by privileged outsiders”.

It is certainly true that many NGOs work with good intentions and their staff is genuinely interested in benefiting the Haitian population. But as argued by the majority of the experts in this field this massive and poorly controlled presence keeps Haiti in a state of pure dependence. A dependence that certainly does not help the country to develop a diversified domestic industry both in terms of production of goods and services, as they are already provided by these foreign organizations. What Haiti needs to finally get up is not the most unbridled economic liberalism, nor the massive presence of well-paid foreign professionals, but to develop its own independent internal market.

As we will see further on, when we will enter into the merits of the organization selected for the case study analysis of the last chapter, the aforementioned organization called ‘El Fuego del Sol’, although it was founded by an American citizen and although it is recognized by the US government as a charitable organization, did not seek, nor wanted a NGO-style structure and consequent recognition of NGO status, but it rather applied and has been recognized as a socio-eco enterprise. Furthermore, ‘El Fuego del sol’ does not import anything from the United States, or from other nations, but produces on Haitian soil, with renewable raw materials from Haiti and, finally, trusting on a huge number of Haitian well-paid people who provide in exchange their labor and workforce. In doing so, and only by this way, FdS was able to distance itself from what was reported in this paragraph, and, consequently, to contribute to the genuine development of Haiti, without running into what is, according to what reported above, a wrong model of long-term humanitarian aid. Only when the aid is carried out with the local people, and not merely for the local people and when we produce in loco and we do not just import prepackaged goods or services, we can “reverse the trend of neoliberal policies and NGO led development” (Edmonds, 2013, p. 447).

Chapter 2

Circular Economy in Haiti, How to Create Social Justice from Waste

2.1 Circular Economy Explained Theoretically

The second half of the 20th century has been the time of mass consumption and, so far, only the most positive predictions make us think that the 21st century will end somehow differently. Mass consumption as an economic-social phenomenon is also known as consumerism and it is typical of industrialized societies. It consists in the indiscriminate acquisition of consumer goods by the mass, behavior that often is aroused and exacerbated by the action of modern advertising techniques, mostly inclined to make appear the publicized needs as real needs, for the sole purpose of continuously expanding production (Tellis, 2003). After the use, usually short of these products, most of them end up in the trash, only to be replaced by other similar and brand new ones, fresh again from production. Furthermore, the continue expands of production is still seen as the right path to be followed by the majority of people, governments and of course, by industry.

It is important to report that if our society is now living following this model, there are more than four billion people worldwide that live at the margins of it (Collier, 2009). They are the people of the so-called developing countries, people whose aspirations and hopes are those of entering in the mechanisms of mass consumption soon; a system that for the moment they have had only the possibility of tasting a bit.

Development, in fact, is often understood as an approach to the consumerist economic model, which, sooner or later, will also become a reality in those countries that, at the moment, are still under development and where great inequalities still affect society. It has been reported that: “as increasing numbers in developing countries move into the new consumer classes, so are the consumption habits of the affluent increasingly adopted, larger houses, meat and dairy consumption, car ownership, and air travel” (Schröder, Anantharaman, Anggraeni, & Foxon, 2019, p. 14). Inevitably, soon enough a wider spread of the mass consumerism way of life will be finally a reality for way more people globally, which, consequently, will lead to an increase in production and therefore

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in waste and environmental impact as “the overall trend globally has been towards less and less sustainable lifestyles” (Schröder et al., 2019, p. 14).

In other words, we are becoming more and more unsustainable globally while, as we have reported, soon enough at least four more billions of people will adopt a consumerist way of life.

This trend is in strong contrast with the desired idea of development that has been defined by the UN World Commission on Environment and Development and described in the Brundtland Report of 1987. In it, it is stated that development must be sustainable in a way “that meets the need of the present, without compromising the ability of future generations to meet their own needs” (UN General Assembly, 1987, p. 43). This means that if in the next few years industrialized and industrializing countries will not change the way of thinking production, soon the earth natural balance will be completely compromised, as far, to not be able anymore to guarantee life on its surface.

Moreover, to the four billion of people of the developing countries mentioned above, we also need to add one more billion, that are the people who live on extreme hardships and that can enjoy only the crumbs of our consumerist society. They represent the so-called ‘last billion’ (Collier, 2009), people who live trapped in failed, never growing states. States, like the one at the center of this research, Haiti, a place where consumption is far from being a mass habits today and probably it will not also tomorrow.

If from a side this last billion of people has still not enter or taken advantage from the consumerist lifestyle, from the other side many of the most negative consequences of the spread of this model materialize precisely in the countries where these people live, as we have reported, regarding the consequences of unsustainability in Haiti, in Chapter 1. For example, moreover, disposable packages typical of a consumerist way of life, such as plastic bags, bottles and straws, polystyrene food packages and others, became recently a real concern for the environment of many developing and underdeveloped countries (Manalili, 2011).

After this premise - we admit not really optimistic - of the future of the globe, one may ask: what are we doing to change? Are the citizens, governments and industries of our Western countries making some effort to improve the global ecological situation? Are we aware, let's say, in Europe and North America, that our current lifestyle will undoubtedly compromise that of our children and grandchildren?

In relation to this it has been reported that :

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at two of the recent UN conferences, the 2011 Climate Change Conference (COP17) at Durban in November 2011 and Rio +20 in Rio de Janeiro in June 2012, the consensus seemed to be, despite the view of many delegates, that change is overdue and indeed that time to make changes is running out, that governments seem unable to instigate change against the will of the corporate world, cloaked under the perceived threat to continuing economic growth (Murray, Skene, & Haynes, 2017, p. 370).

Does this mean that we are globally doomed? Maybe yes, but an innovative answer is recently taking off. In some case as we will see, it has also found adoption by some government while illuminate people are implementing it from a grass roots level: it is called ‘circular economy’ (CE).

2.1.1 The roots of the concept

The roots of the concept goes back to the 1960’s at the time of classical political economists like Ricardo, Smith, Sraffa and Quesnay which started to see the limits of the system of production of the time, described by Sraffa as a one way avenue that leads from “factors of production” to “consumption goods” (1960, p. 93; in Schröder et al., 2019, p. 14). In 1966 the economist Kenneth Boulding introduced in ‘The Economics of the Coming Spaceship Earth’ the idea of the planet Earth as a spaceship that has a limited quantity of both resources and waste disposal capacity. Our survival within this spaceship, therefore, seems to be linked to the ability to make the best use of the available resources, regenerating the materials we use (Boulding, 1966; in Bompan, 2016, p. 19). Another important contribution to the birth of the concept of the circular economy can be found in the 1971 book ‘The Closing Circle: Nature, Man and Technology’ of the ecologist Barry Commoner. In it, the author suggested that the American economy should be the object of a restructuring that must conform to the unbending laws of ecology. The example reported by the author goes back to the origin of life on the planet, which replication has been possible only thanks to the appearance of organisms that developed photosynthesis. These new organisms used sunlight to transform carbon dioxide and inorganic substances into fresh organic matter. As the author explains, this first event was crucial as it allowed the conversion of the first refusal of a form of life, carbon dioxide, into a food substance that is to say, in organic compounds, moreover using a renewable energy: sunlight. The circle thus was closed, a linear process became circular and capable of self-perpetuating. The idea of a closed economical circle capable of self-perpetuation originates also from the writings of the Swiss architect Walter R. Stahel. Stahel had a lot

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of influence on industrial sustainability, especially after the publication of his 1982 article ‘The Product-Life Factor’ which has also been awarded with the prestigious ‘US Mitchell Prize’ (Stahel, 1982; in Leitão, 2015). In this paper are developed the ideas of “product-life extension” and that of a “self-replenishing economy built on a spiral-loop pattern” (Stahel, 1982, p. 72).

2.1.2 Definitions

Consequently, what is it, or what is meant today with the combination of the two words of ‘circular’ and ‘economy’? Many helpful definitions of the circular economy have been produced in recent times. As many as one hundred and fourteen, for example, have been reported and studied by Kirchherr, Reike & Hekkert (2017; in Desmond & Asambaa, 2019, p. 152). However, to better understand what circular economy is and how it works, we will begin with the introduction of its antonym that is the concept of ‘linear economy’.

Linear economy (LE), which represents the actual system of production, is the responsible for “the transformation of natural resources into waste, via production” (Murray et al., 2017, p. 371). In LE “firms make products and the consumers use and dispose” (Michellini, Moraes, Cunha, Costa & Ometto, 2017, p. 2) [Figure 3].

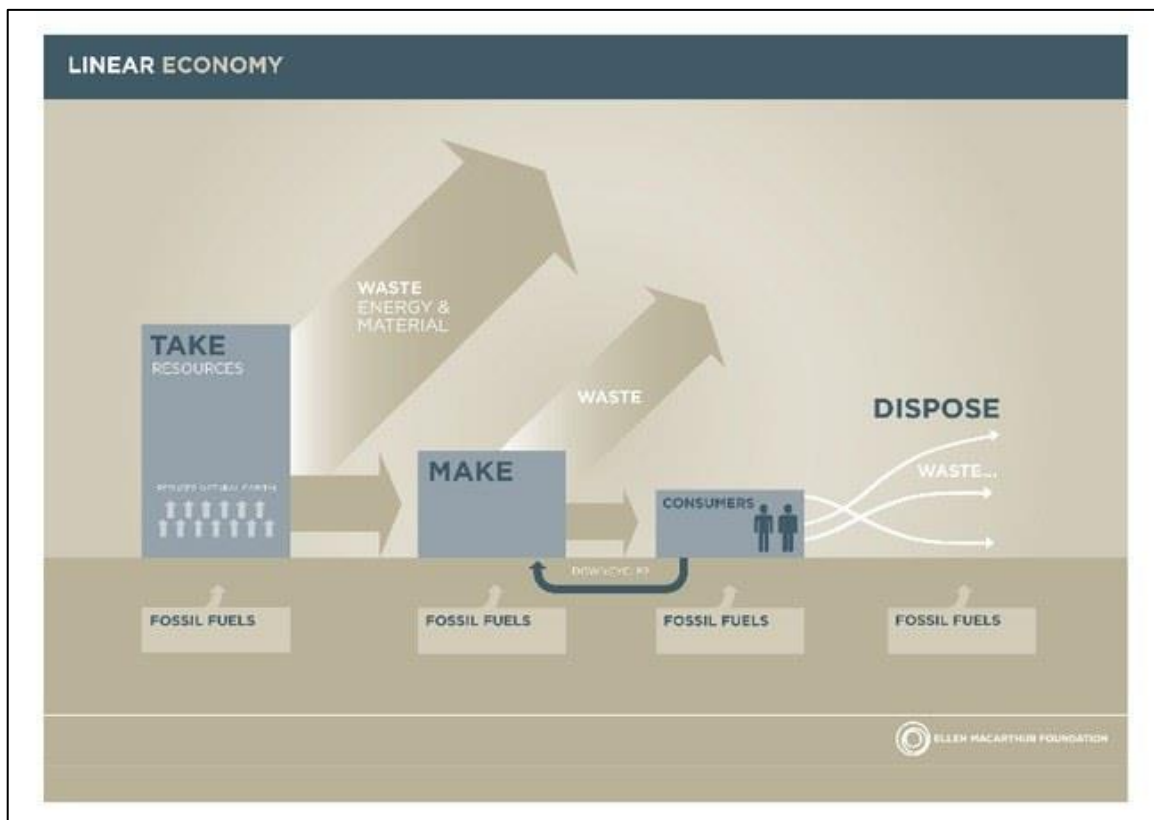


Figure 3: Linear Economy (Ellen MacArthur Foundation, 2012)

This system generates two negative consequences, that, according again with Murray and his co-writers, are “the removal of natural capital from the environment” and “the reduction of the value of natural capital caused by pollution from waste”. A LE is a one-way system of production where the final product is only one: waste.

Today, as mentioned, the earth population has grown and is growing considerably and soon, many new actors from the developing world will have access to the consumerist way of life, while some habit of this baleful way of living has already spread in developing countries, like the use of disposable plastic products. The consequence is that the linear economy system, on a global scale (but also, in many cases, on a local scale), is no more sustainable. In other words “this linear economy model of mass production and mass consumption is testing the physical limits of the globe. It is, therefore, unsustainable and a shift toward a circular economy is becoming inevitable” (Esposito, Tse, & Soufani, 2018, p. 5).

It thus appears that a shift from a linear economy to a circular economy [Figure 4] is today more than necessary. At the forefront in promoting this change, since 2010, is the Ellen MacArthur Foundation (EMF), a United Kingdom registered charity which aims to inspire people, governments and industries to re-think, re-design and build a positive future through the framework of the circular economy.

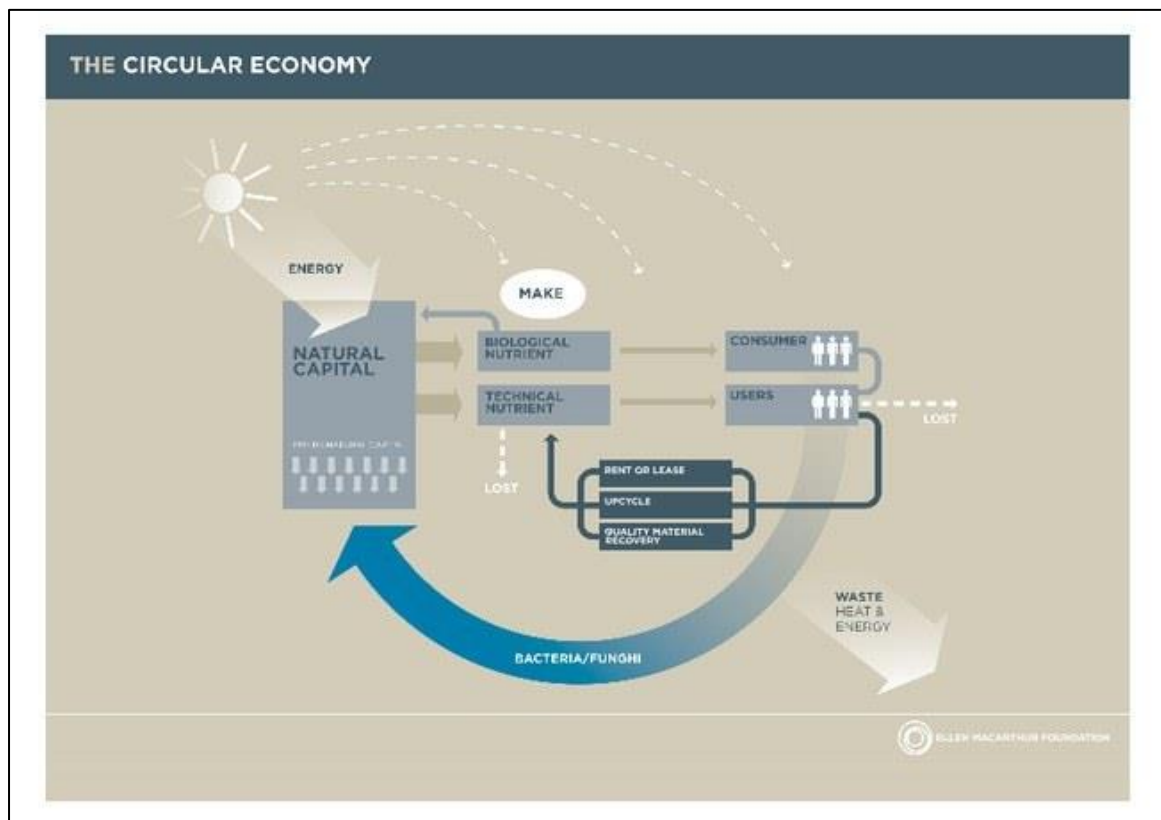


Figure 4: Circular Economy (Ellen MacArthur Foundation, 2012)

On the official website of the EMF a comprehensive definition of the foundation, its mandate and the CE main concept is reported: “the Ellen MacArthur Foundation works with business, government, and academia to build a framework for an economy that is restorative and regenerative by design”.

Circular economy is exactly this, an economy that is regenerative because the last step of the life of an object, the disposal, also constitutes the first step of the production loop. Circular economy is restorative, because it contributes to improve the environment degradation and the social conditions of many, affected by the consequences of the linear economy model. That this happens by design, finally means that every step of the life of the materials utilized in production is taken in consideration before, during the production design with particular attention to the last step, the disposal, that in CE will fall under the responsibility of the producers.

As we have mentioned, many theoretical definitions have been produced over the concept of circular economy and here, before addressing this issue from a practical point of view, we will report some of them. For Murray, Skene, & Haynes (2017, p. 369) for example, “circular economy represents the most recent attempt to conceptualize the integration of economic activity and environmental wellbeing in a sustainable way”. The definition given by Geissdoerfer et al. (2017; in Schröder et al., 2019, p. 5), sees the circular economy model as a new sustainability paradigm and summarizes the main elements of circular economy as “a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops”.

However, the most complete definition has been built taking into consideration many other and previous definitions. It has been proposed by Kirchherr, Reike, & Hekkert (2017, p. 229) and is the following:

CE is an economic system that replaces the “end-of-life” concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes. It operates with the aim of accomplishing sustainable development, thus simultaneously creating environmental quality, economic prosperity and social equity, to the benefits of current and future generations. It is enabled by novel business models and responsible consumers.

While Esposito, Tse, & Soufani (2018, p. 5) argue that “the definition of a circular economy is not set in stone” they also report a series of activities, that, in accordance with

Kirchherr et al., are part of the circular economy model and are: “reuse, repair, recycling, eco-design, sustainable supply, and responsible consumption”.

2.1.3 Adoption by policymakers

Circularity in production and disposal of goods is becoming popular, especially in the last decade, among policymakers. For example, in China, since 2002 circular economy has been adopted by the central government as the new development strategy (Yuan, Bi & Moriguchi, 2006) making of the Asian industrializing country the first in the world to adopt this model at a national scale. Chinese authorities have understood that this was necessary in order to assure wellbeing to the future generation, taking advantage, furthermore, of the high business opportunities that CE can create. Finland adopted the model in 2016 while the same year the Dutch government reported that: “to ensure there’s enough food, water and prosperity in 2050, we need to switch from a linear to a circular economy. [...] The Government wants the Dutch economy to be circular by 2050” (Government of Netherlands, 2016) and, in order to reach this proposal, the Netherlands have developed a wide governmental program too.

Also the European Commission, in 2015 “adopted the circular economy concept as part of the EU’s 2020 strategy initiative to modernize and transform the European economy, shifting it towards a more sustainable direction” (Schröder et al., 2019, p. 5). According to the document that has been released (European Commission, 2015, p. 2):

The transition to a more circular economy, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised, is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy. Such transition is the opportunity to transform our economy and generate new and sustainable competitive advantages for Europe.

Summarizing we therefore have, on the one hand, one of the most industrialized country in the world, China, which, looking for a solution for its serious natural resource depletion and environmental pollution generate by the rapid economic growth, since the early 2000s has produced a great number of documents, studies, researches and scientific works concerning the concept of circular economy, or, as it is defined in Chinese literature, ‘industrial ecology’. The Chinese government finally “recognized that CE could help improve resource productivity and eco-efficiency, reform the management of the environment, and achieve sustainable development” (Yuan et al., 2006) and

consequently has adopted it since 2002. On the other hand, we have Europe, which, although a few years in late in respect of the Asian industrial colossus, has recently considered the opportunities that a circular economic model can bring to environmental protection, innovation and, as we will see, generation of new job opportunities and other benefits. Not the last, is Africa, a massive fast-developing continent, where an international agreement has been reached under the name of ‘The African Circular Economy Network’ (ACEN), which vision, as reported by the official website of the ACEN: “is to build a restorative African economy that generates well-being and prosperity inclusive of all its people through new forms of economic production and consumption which maintain and regenerate its environmental resources”.

Several other countries are implementing and testing alternatives to linear production, and, hopefully, one day circular economy will be more and more adopted by policymakers globally, also, we hope, in the United States of America, a country that, for the moment, seem quite reluctant to undertake a new circular route for the production of goods.

Concluding, we may affirm that things are somehow moving forward as more and more countries are adopting and testing the new opportunities of a circular economic model. In the next paragraph, we will try to explain to the reader, entering more in the specific and with some practical example, how circular economy works in practice.

2.2 Implementation of the Circular Economy Model, a Systemic Approach

As we have seen, the linear economy is no longer sustainable on a global scale. Soon, if we continue to live, produce and consume following this model, we will undoubtedly run into enormous sustainability problems, which negative consequences will impact on the lives of us all, and certainly on the ones of the generations that will come.

Starting from the assumption that a change is overdue, there are two possible solutions, as reported by Bompan¹ in his book "*Che Cosa è l'Economia Circolare*" (2016). Bompan identifies first, an ‘utopian solution’, defined as de-growth, which consists in consuming less, therefore producing less and perhaps, at an extreme level, in developing broad national plans for birth control. About population control as a possible key to a sustainable future wrote also another author, de-Shalit, coming finally to the

¹ Emanuele Bompan is an Italian geographer and journalist, active since 2008 in environmental reporting, cooperation, development and international politics.
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conclusion that this practice would be, firstly, inefficient, and secondly, immoral². The alternative to de-growth is instead described by Bompan as more realistic and more capable of success. This is especially because it will not hinder the market economy as it would develop inside it. It consists of the transformation and substitution of the linear production model with the circular one and, as it has been introduced, is usually defined as ‘circular economy’.

In recent years, the market is realizing that the linear model is presenting more and more problems, first of all, that of the scarcity and availability of many raw materials, with a consequent increase in final products prices. The market, therefore, in some case is already autonomously turning its attention towards that almost infinite resource that has been accumulating over the years, starting from the post-war period to the present, which is the trash and waste of our consumerist society. The use of these materials in production, in itself, is already part of the so-called circular economy method, which, however, has many more resources, probably infinite, than those lying in our landfills.

In the title of this paragraph we mentioned the fact that the circular economy model is systemic, let’s see why.

To begin, again, we will make an analogy with the linear economy model. In a linear economy, products cease to be the producer's responsibility at the very moment they are sold (or, at least, as soon as their warranty expire). Let's think, for example, of a mobile phones factory. Mobile phones are designed and assembled in order to reach maximum cost saving, so as to guarantee a competitive final price on the market. No company, however, in the design phase, envisages the manufacture of easily-disassembled phones, so as to facilitate their disposal or their repair by third parties or by the company itself. Today many mobile phones are not even supplied with interchangeable batteries so that once the battery has reached the end of its life, consumers are practically obliged to change the whole phone. This happens precisely because, in a linear economy, producers have no interest in designing products that can be easily dismantled, as they themselves will not have to deal with the disposal of the products they sell when they reach the end of their life. Furthermore the producers to reduce costs of production, do not have any interest in making, for example, phones that are highly durable, upgradeable or designed to last virtually forever. This is because

² Avner de-Shalit is Professor of Democracy and Human Rights at the Department of Political Science at the Hebrew University of Jerusalem. For a deeper argumentation on the subject of ‘birth and population control’ we refer to his text "Global Sustainable Development in the 21st Century" (2000, pp. 187-198).
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consumers are attracted by low costs, even if this means low durability and the market has adapted to it. Once a mobile phone present a problem, let's say, a broken speaker, consumers are encouraged to throw it away in order to buy a brand new one, only to the benefit of the producers.

What has just been reported, concerned the durability of products in the era of the linear economy. Let's analyze instead what concerns the possession of goods, in a linear consumerist economic model. Let's imagine for example a big condominium building in a random European city. The condominium consists of, we can say, fifty apartments, where as many families live. Every family possesses a drill that they use once a month (or even less). The same drill, of poor construction quality, remains unused probably twenty-nine and a half days out of thirty. The result is that in a single condominium we would have fifty drills, which are used by the owners only once a month and which often, moreover, break and must therefore be replaced with other drills that, since are rarely used, will be purchased trying to save the most money possible, which means that the drill bought will be again of low quality, and, sooner or later will break again. As the drill under question has been produced in order to be cheap, it is probably not even designed to be easily repaired. Furthermore, the factory will not supply the necessary spare parts, the cost of which, in any case, would be slightly less than that of a new drill. So, when it will break, the drill will be thrown away ending its short life in a landfill.

Those examples make clearly appear the limitations of a linear economy system, being the absence of systemic thinking in production, a strong limitation for repair, reuse, refurbish or recycling, again to the only benefit of the producer companies.

Now, let's imagine, instead, an ideal society where the market is organized according to the circular economy model. In this society, products are designed and built in a holistic and systemic way. In other words, every single step of the life process of a product is taken into consideration during its design. We will, therefore, have companies that will be more responsible for their products, which consequently will be of higher quality, as they will have to last longer. As they are lasting longer, these products - let us take back the example of the mobile phones and drills - will not have to be replaced so often as they can be repaired if some of their parts break, or updated if they become obsolete. Subsequently, let's imagine that to create profit, at this point, the manufacturing companies will reserve for them the ownership of the products placed on the market. The consumers, paying a monthly fee, will have now access to the use of these products. What we would have, consequently, would be better quality products with longer life

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cycles, which, once replaced and then withdrawn by the manufacturing companies, would be easier to be dismantled or to be repaired. This, in the case of mobile phones and drills would finally “reduce the amount of electronic waste that ultimately goes to landfill and incineration, at the same time recovering high-value metals, minerals and rare earths” (Desmond & Asamba, 2019, p. 167).

Let's now imagine, more concretely, that this service is provided by drill companies to drill users. In the condominium of our previous example instead of fifty family-owned drills of poor construction quality, we would have a limited number of shared condominium drills, as already happens, for example, with washing machines in some European Nordic country. With a small monthly subscription (that could be included in the condominium fees) users would have access to the use of a drill, available whenever they need it, which will finally be designed to last, as the responsibility for its maintenance, in this case, would fall on the manufacturer. Fewer drills would be produced with all the positive consequences that this carry for the environment.

Furthermore, being the new products of superior quality, their design and manufacture would require the same amount of workforce of the previous model of production and, as these drills are now repaired, reconditioned and dismantled by the producer, what we would have, consequently, is the emergence of new jobs opportunities.

Finally, consumers would not have to deal anymore with the disposing of products at the end of their lives or their repair, because as it has been said, this would be now the responsibility of the producing companies.

Therefore, in a circular economy the focus is on the ‘using value’, linked to the products as a service; to replace the ‘exchange value’ of products, typical of the linear economy.

It is important to notice that this would be a win-win method, where every actor involved would gain: consumers would enjoy better quality products, ready to be used and to which they would not have to provide maintenance; producers, that would be required to change patterns of production in a more systemic, sustainable and ecological way would save their economic revenues; workers would benefit of new job opportunities and, above all; the natural system, which would see fewer broken drills or mobile phones ending up in landfills or incinerators - just to stay on our examples - and less non-renewable materials drawn for their manufacture.

The economic advantages of the transition to a circular economy in our European industrialized societies have been calculated in detail by the McKinsey Centre for Circular Economy and Social Justice in Haiti Under the Prism of Social Work

Business and Environment under the commission of the Ellen MacArthur Foundation. The results of these very promising studies were published with the title ‘Towards the Circular Economy Vol. 1’ in 2012 and ‘Growth Within. A Circular Economy vision for competitive Europe’ in 2015. In these works, pieces of evidence are reported to sustain that a transition to a circular economy would allow European manufacturing alone to save 600 billion euros starting from 2025. Furthermore, this change would allow an 11% increase in European GDP by 2030, a reduction in the emissions of 48% and an increase in income available to families of 18%. Moreover, has been calculated that in the next 5 years, 100 thousand new jobs would be generated (also in Bompan, 2016, pp. 77-78).

It is important to report, to conclude, that a shift toward a circular economy needs to be introduced and promoted both with top-down and bottom-up approaches.

From a side the shift must be facilitated on a massive scale by government policies, industries, international and national organizations while from the other it will be also mandatory, and maybe the development of a broad educational project would help, that every citizen will change behaviors in his daily life choices and, consequently, will apply concepts like reuse or repair, that never have been so far from the way of life of mass consumption of these times, especially in the Western world.

The change may be slow and the road uphill, but the gains, in all the above mentioned fields, would make this shift more than worthwhile. The risk is that as some point soon, or we will adopt this new system, or we will have no more raw materials to exploit while trash will be scattered everywhere. By that time, the earth natural balance will be so compromised that our planet will be probably no longer able to ensure human life on its surface.

2.3 Circular Economy in Contexts of Underdevelopment: the State of the Art

Until now, in this second chapter, we have addressed the topic of circular economy and its applicability in advanced economic systems, in particular, with reference to the European reality. We have seen how, in an industrialized context like the European one, the abandonment of a linear economic system in favor of a circular one would bring many benefits in different fields.

However, the central interest of this work is not to evaluate or not the benefits of the application of the circular economic model in advanced and industrialized Western countries for which many studies have been produced already, but instead, to explore Circular Economy and Social Justice in Haiti Under the Prism of Social Work

how this system can be designed to be applied, and bring benefits, in one of those countries of the so-called Global South: Haiti.

In this country industrialization is in its primordial state, being Haiti essentially a peasant economy, nor, of course, industrialization is quickly evolving as it is happening in many developing Asian and African economies today. Furthermore, Haiti is also finding many difficulties in attracting foreign investments, due to its political instability and lack of infrastructures, the same motivations that keep tourists away from this potential Caribbean paradise.

In particular, therefore, what we would try to understand by this research is how the circular economic model can find applicability in a stagnant, underdeveloped economy and how it could help in attain economic and ecological benefits from a side, but, most than all and with the point of view of the social work discipline, to identify and evaluate the social benefits that such a model can generate.

If, therefore, as we have seen, the concept of circular economy has developed in contexts of strong industrialization (see China) and is finding more attention in advanced societies, (in Europe the leaders are Finland and Holland), up to date very little has been produced in terms of scientific studies in regards of the applicability of circular economy in contexts of underdevelopment, or rather, in societies where industrialization is still in its infancy. For this reason, data on circular economy projects in the developing world is very scarce and mostly inexistent.

To the author's knowledge the first work of this kind is represented by the 2016 publication of the Tearfund agency³ entitled: 'Closing the loop. The benefits of the circular economy for developing countries and emerging economies' (Fernandes, 2016). To it followed later, in 2019, two more publications: 'The circular economy in the global south' and 'Circular economy: waste-to-wealth, jobs creation, and innovation in the global south'. The first is a book and, reporting the words of its curators Schröder, Anantharaman, Anggraeni, & Foxon (2019): "[it] wants to examines the relevance of the circular economy in the context of developing countries, something which to date is little understood". The second work is instead an article. In it, the authors Colon, Jayasinghe & Dasanayake (2019) query:

³ Tearfund is a Christian relief and development agency based in Teddington (UK). It was founded in 1968 by the Evangelical Alliance.

Is there space within the CE dialogues for bottom-up CE approaches that address existing ecological and social considerations? Can CE discussions move beyond industry and economic gains, and into the rationale of increasing local livelihoods and keeping materials out of the local waste stream?

It follows that in those three publications, a broad range of case studies are presented, including Argentina, Brazil, China, Colombia, India, Indonesia, Kenya, South Africa, Sri Lanka and Thailand. It therefore appears immediately clear that although the several case studies reported are concerning developing countries and fast growing economies, none of them is dedicated to those countries included by the United Nation in the so-called 'List of the Least Developed Countries' (LDCs). The list was updated at December 2018 and comprehend today forty-seven countries, being Haiti included in it since the very beginning. It is in these countries, precisely, where the people of the 'last billion' to which we referred in chapter one struggle everyday to survive.

Our work, therefore, would like to go a little further in respect to the three studies mentioned above, asking for example if and how a circular economy model could find its own application even in the LDCs, where very little is produced, the governments are highly inefficient and where the economy is subjugated, in most of the cases, to external factors. Haiti, in fact, represents a real specificity: it is the only American state of the LDCs list. A state that has much more in common with many African countries than with its Caribbean neighbors and which bases its survival on humanitarian aid, both in regards of social services and in relation to the availability of primary goods, which in Haiti are largely imported.

Now, someone could dispute that a state that produces little or produces nothing, does not require, or in any case does not need to consider among its priorities, that of closing the circle, bringing production and consumer's waste, disposed goods and other materials, again at the beginning of the production cycle. A criticism of this kind, however, would not take into consideration the fact that circular economy must not be intended only as a way to fix or alleviate the problems generated by the linear economy and therefore applicable only to the growing economies.

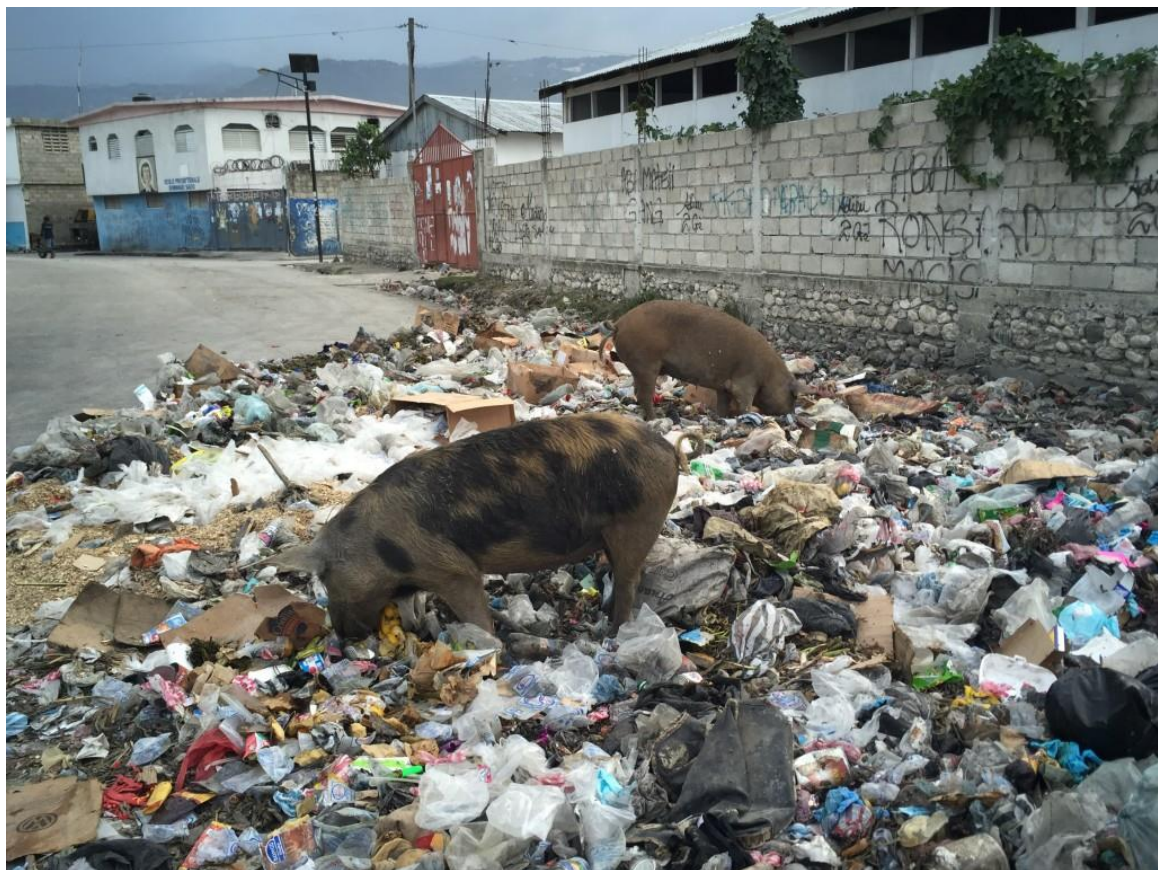
Although, the circular economy is, and must be intended as a new way of thinking and doing business, both from a top-down perspective and - as it is of more interest for this work - from a bottom-up or grassroots level. If in the industrialized world circular economy can be the opportunity to change production patterns in a more sustainable way, in the LDCs circular economy can constitute the opportunity to start production, where it

was not existing. It follows that, also a country as Haiti, can gain a lot from a bottom-up approach to CE.

Furthermore, as it has been reported, the consequences of this industrial prioritization of the CE discourse are that “grassroots stakeholder inclusion or civic inclusion in CE dialogues are sometimes excluded, and opportunities for inclusion and increased CE activities at grassroots social enterprise levels for livelihoods are missed” (Conlon, 2019, p. 148).

This work, therefore, aims to contribute to develop a reflection on this matter, for the benefit of those people who live of extreme hardship in underdeveloped countries and that needs, in some way, to be prioritized.

2.4 Waste: Problems and Opportunities in Haiti and the Caribbean



**Figure 5: Pigs that feed on abandoned garbage. It is a very common scene in Port-au-Prince
(Ph. Bryan Krahn)**

As we have seen, one of the basic principles of circular economy is to put waste back at the beginning of the production cycle. Now, it is universally recognized that “increasing

solid waste generation (SWG) is a major concern worldwide, with least developed countries particularly affected due to ineffective waste management systems” (Bundhoo, 2018, p. 1867).

Unfortunately, to find data on the solid waste generation and management in Haiti, as in the case of the other LDCs, is a rather difficult undertaking as it has been reported: “[the] most of the studies on solid waste management have focused on developing or developed economies while studying on least developed countries are scanty in literature” (Bundhoo, 2018, p. 1867). This is particularly true for Haiti, for which only few focused studies have been produced (see Booth, Funk & Haase, 2010; Noel, 2010; Philippe & Culot, 2009).

Furthermore, for obvious reasons, the interest on this topic seems to have vanished after the 2010 earthquake, to then begin to slowly re-emerge in more recent times in studies that, in any case, treat the topic of the Haitian solid waste generation and management only indirectly, being focused, the first we have been able to find, on the small island developing states waste management (see Mohee et al. 2015) and the second in the least developing countries waste management (see Bundhoo, 2018). Consequently, even if both these groups consider Haiti between their boundaries, these researches did not report specific data on this country.

Therefore, despite this lack of updated data regarding Haiti, which may be filled by further studies in this direction, we will, however report a series of statements that, in light of what has been written so far on the topic, we can still consider true.

To begin, it is worth to mention that in Haiti, as in the other LDCs, the generated solid waste is not properly managed. As a consequence of that, solid waste constitute a hazard both from the ecological than from the public health points of view. Moreover the inability of the local authorities to properly collect waste gave birth to several illegal habits for waste disposal, that can vary from dumping, burning or simply throwing waste away in drainage canals or open fields [Figure 5].

The risks of this situation have been reported by Bundhoo (2018, p. 1867):

Besides the social and financial impacts, solid wastes, if left untreated or improperly managed, may have severe environmental impacts such as the generation of methane gas through anaerobic degradation of organic waste components and its subsequent consequences on global warming and climate change as well as increasing likelihood of fires, production of leachate resulting in pollution of groundwater supply and the onset of vector-borne diseases from mosquitoes.

Furthermore, in the case of Haiti, it is necessary to consider how the specificities of solid waste composition can vary considerably from urbanized areas to rural areas and, within industrialized areas, from neighborhood to neighborhood, in relation to the economic incomes of its inhabitants. Food habits of people are mostly oriented by the level of their economic revenues, consequently, lower classes would produce more organic waste due to the fact that they consume more fresh food while upper classes would produce a higher quantity of plastic and paper waste when compared to the firsts, as they are more used to pre-packaged food.

In regards of the average quantity of solid waste generated in LDCs, Bundhoo (2018, pp. 1868-1869) reports that “the SWG rate for LDCs averages 0.56 kg/capita/day”, while, about the composition of this waste, the “solid wastes in LDCs consist mainly of organics (52%) followed by recyclables (26%)”. Now, as we said, we do not have, to the author’s knowledge, availability to specific recent data in regard to Haiti. However, in the absence of evidence proving the contrary, we would consider that today at least a quarter of Haitian waste is recyclable (plastic, paper, metals and glass) and, we are inclined to suppose that at least in the Port-au-Prince area, this percentage may also be higher. This assumption is also supported by the fact that in 2010, relatively to the city of Cap-Haïtien, it was reported that “the recyclable matter for the whole city represented 26.6%” of the total (Philippe & Culot, 2010, p. 76).

While none of the authors referred in this paragraph has mentioned circular economy models for the management of recyclable and organics waste materials, the all of them seems to agree that “these wastes have very interesting characteristics that could be exploited in a valorization perspective [as they could] provide raw materials for manufacturers” (Philippe & Culot, 2010, p. 77) and “despite the several challenges faced by LDCs for effective waste management, there is a huge potential for job creation in this field through waste collection, transfer and transport, recycling, composting, anaerobic digestion and even sanitary landfilling” (Bundhoo, 2018, p. 1875).

To conclude, we suggest that the time to start an investigation toward the opportunities and benefits that CE can generates in Haiti and in the other LDCs has come.

2.5 Circular Economy and Social Work in Haiti and Underdeveloped countries

In assessing the planning, implementation and, consequently, evaluation of the positive effects of circular economy projects in Haiti, we cannot but start from a multidisciplinary

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approach. In fact, if on the one hand we cannot but pass over an economic approach, on the other we have to go through disciplines such as development studies, anthropology, sociology, psychology, political science, and international social work.

As shown in chapter one, the role of non-governmental organizations (NGOs) in Haiti is still under study, dividing the scientific opinion between who think that foreign NGOs are good for Haiti's development (World Bank, 1997) and who think and sustain that the bewildering backwardness of the country is a direct consequence of its dependence on charity held by foreign NGOs (CRESFED, 1997; Pierre-Louis, 2011; Farmer, 2012; Schuller, 2012; Edmonds, 2013). In any case, after so many years of humanitarian aid projects, the social and economic stagnation that is still affecting the country of Haiti, makes us think that the aid model offered by NGOs, although moved by good intentions, has finally proven to be unsuccessful in guaranteeing or facilitate a long-term change.

This is why we would like to understand if the discipline of social work, in the years to come, can have a more central place in the planning and implementing of long-term projects of community development in Haiti as in the other underdeveloped countries of the LDCs list. In fact, we cannot avoid to mention that social work, as it has been defined in 2014 by the International Federation of Social Workers (IFSW) "is a practice-based profession and an academic discipline that promotes social change and development, social cohesion, and the empowerment and liberation of people", all of people, and so, it cannot avoid considering the least developed countries as the main recipient of social workers activities.

Although social work was born in our developed societies and today, in most cases, still devotes its main efforts to these societies, global interconnectedness is calling this discipline to look more and more and with greater attention to the underdeveloped realities where, unfortunately, most of the problems addressed by the discipline are concentrated.

In a hyper-connected world system like the one in which we live today, the problems of societies are, in fact, no longer disconnected. An example is that of the recent immigration movement which reflects the connection of the contemporary world and which is putting a strain on social workers in the industrialized world who, in the last two decades, have seen the recipients of their activities multiply and expand to other people, people coming from far away and carriers in many cases of great fragilities.

What we mean is that the discipline of social work can no longer afford to work only on a local or national scale but must necessarily go through a global vision of the world and therefore increase its interests to other societies, because from their well-being also depend on ours. The professional social workers must, therefore, possess today an immensely greater formation than that of their predecessors, so as to be able to work both with people of different backgrounds, and in very different environments.

In fact, many authors claim that a social work curriculum must be intended today as more international and “call for a global commitment [of the discipline] to support sustainable human development and encourage the global interaction of social workers” (Guo, Marshall, Glasser, & Spillers, 2016, p. 5).

In doing this, social work must be aware that to take adequate roots in its new soil, must avoid the “over-dependence on models originally generated to cater to the needs of the peoples of the developed world” tell us as far as in 1990s Ibrahim A. Ragab, Professor of Social Work and Social Policy, Formerly of Helwan University and Al-Azhar University, which criticize the discipline of being too much attached on models developed for the Western society that are then simply transplanted to the developing world.

As reported by Ragab, the spread of the social work discipline in developing realities, has always suffered from too much dependence on foreign models, that does not respect, nor take into account, local culture of developing countries. To this problem, the Egyptian professor suggests a solution that is (1990, p. 41):

To begin this process [the development of the discipline in developing or underdeveloped countries], the profession must first decide which aspects of practice are universal (i.e. transcending cultural and national boundaries) and which are particular to every cultural and national unit. Clarity on this issue is essential for any effective planning for reform.

Now, the aim of our research goes far from wanting to evaluate and understand, in these nearly 30 years that separate us from Ragab's writing, what has been done to develop and to adapt the discipline of social work to other cultures and their specific patterns and problems. In fact, in our case, an analysis of the university courses held in Haiti, of the writings produced by Haitian students and professors of social work, a more careful evaluation of the works, projects and publications of the Haitian *Enstiti Travay Sosya ak Syans Sosyal* (Institute of Social Work and Social Science) could really add useful information to this discussion.

A study of this kind could help understand if social work theory and practice in Haiti are going in the right direction, but it also would be a huge job of research. In any case, such research could really add value to all those studies that aim to improve the living conditions of the Haitian population and we hope that at some point, the local expert would have more international and national recognition. This is also because, it is appearing more and more clear, and in some way mandatory, that if we want to help the Haitians we must do so with the Haitians and not only for the Haitians. Therefore a greater collaboration, starting also from greater knowledge of the local school of social work, would be beneficial for everyone.

Furthermore, the incorporation of international content into social work curriculum in social work education would also be beneficial, both locally and internationally. For example it has been reported (Guo et al., 2016, p. 5) that: “international social work can be used to refer to working with immigrants and refugees from other nations in one’s home country, or it can be used to refer to conducting social work to help with social issues faced by citizens of other countries in their home nations”.

Therefore, going back to our question, could our discipline of social work be the bearer of a new method of local development, through the implementation of circular economy projects? If the Haitian social workers, in collaboration with foreign social workers with international and intercultural skills, would develop a specific circular economy based practice for Haiti, could the results be positive, long-lasting and moreover integrated by local culture? Furthermore, would these projects be able to self-finance themselves, by entering a market economy?

What we believe, in light of the positive feedback we got from the project we analyzed (see chapter 4) is that circular economy can find its place in Haiti and bring positive results, bearing a certain degree of local autonomy in stark contrast with the model of aid that until now has seen universal diffusion in the country, that of charitable help, of short duration, dependent on external financing, and with limited effects in the long term period; a model that has been responsible, for many (see Buss & Gardner, 2005; Kregel, 2009; Katz, 2010 etc.), to keep Haitian people in a state of perennial dependence from external help.

Returning then to the sustainable development goals (SDGs) promoted by the United Nations (UN), although the circular economy model was not explicitly mentioned in the UN text, it is interesting to notice that, as it has been reported “circular economy practices could assist in the implementation of the sustainable developments goals, as *Circular Economy and Social Justice in Haiti Under the Prism of Social Work*

some scholar and practitioners have argued” (Schröder et al., 2019, p. 204). If this is true for the developed world, it becomes even more true for the developing one, where many of the problems generated by unsustainable practices are already strongly affecting the quality of life of the local population.

The scientific validity of this is based in particular on a research made by Schröder, Anggraeni, and Weber in 2018. The results of the literature review and consequent matching exercise that has been accomplished in order to determine the relationship between CE practices and SDGs have shown that circular economy, potentially, can contribute directly in achieving a significant number of SDGs.

Let’s see the major ones that have been reported:

- SDG 6: Clean Water and Sanitation;
- SDG 7: Affordable and Clean Energy;
- SDG 8: Decent Work and Economic Growth, that through CE practices, is also connected to the more generic SDG 1: Eradicating Poverty ;
- SDG 12: Responsible Consumption and Production, that is the very goal of CE and sustainable lifestyles;
- SDG 15: Guarantee Life on Land and Biodiversity Protection, which is central in Haiti.

Briefly summarizing, the circular economy practice has been found to be directly linked to at least 21 targets of the Sustainable Developing Goals, while other 28 could still benefit indirectly from it (Schröder et al., 2018).

Furthermore, as argued by Preston and Lehne (2017; also in Schröder et al., 2019, p. 204) “circular economy practices can support the SDGs through extending product/material life cycles, changing utilization patterns, looping through additional use cycles and using renewable, recyclable or biodegradable materials”.

In conclusion, therefore, it appears evident that the implementation of the circular economic model should be encouraged on a massive scale, both in industrialized, developing and least developed countries. Since the objectives of the circular economy and the consequences of its implementation are in line with many of the objectives of the social work discipline, this latter should - and we believe that has the means to do so - make of this practice part of its own local development strategy.

To plan and implement targeted circular economy projects, attentive to local cultural differences, can be the way through which social work could reach many of its goals, not least, that of fostering social justice.

Chapter 3

Case study of an Organization who is operating in Haiti following the principles of Circular Economy: Methodological Options

3.1 The Problem and Objectives of the Research

Haiti is a country that is facing many difficulties being the widespread poverty the main evident one. Extreme poverty, in Haiti as in many other countries worldwide, is the major factor that makes the population still rely on solid fuels for cooking: wood and charcoal. Other cleaner alternatives like liquefied petroleum gas or electricity are far away to become the preferred methods for cooking in Haiti, for obvious reasons of high costs. A recent study has shown, in fact, that the 93 percent of Haitians still use wood or its derivatives to cook their daily meals (GACC, 2017).

This reliability on solid fuels for cooking has a negative impact on many aspects of the life of the Haitians. If from a side tree harvesting for make charcoal has been seen for many years as the main driver for deforestation, from the other charcoal and wood cooking are the major responsible for household air pollution which “is the 2nd highest risk factor for premature deaths in Haiti at over 8.000 deaths in 2015” (GACC, 2017, p. 27).

To find an ecological alternative to charcoal and to improve traditional cookstoves efficiency has been the central objective of many organizations that operate in Haiti as worldwide. The main challenge that the organizations that are working in this field have to face, is however not limited to finding alternatives to charcoal, but on finding alternatives that can be culturally accepted and therefore, that can be adopted to the detriment of the traditional methods. The same is true for cookstoves: over the years many improved models have been designed worldwide, but few have seen wide diffusion, due to the presence of a significant number of barriers that can be of a financial, market, quality, political, infrastructure, awareness and socio-cultural nature and that, by the end, contribute negatively to their adoption (Mehetre et al., 2017).

The objective of this research, consequently, is to contribute for the debate toward the applicability of circular economy projects in underdeveloped realities. In this work will be reported the case of an organization that developed and that is currently producing an alternative to wood charcoal, which a wider diffusion seems to be possible, and has already begun, as its products are meeting the needs and cultural behaviors of the target population. To describe this organization can be seen as (and actually is) a research objective *per se*, in the belief that Knowledge is a sum of different specific cases that by consequence are worth to be studied and described in the way we are going to do so. Science, in fact, advances in a cumulative process of knowledge and this work wants to add a piece of this knowledge. A case study alone may will not be enough to explain a phenomenon, but surely is an important piece of knowledge that will contribute to the understanding of a phenomenon.

However, the objective of this work is not limited to this aspect but also to the need of understanding something more, that is related to this field but that has been little investigated since now and to which this research wants to contribute specifically. Our second goal (but not for importance), consequently, would be to contribute to the solving of the following question: is it possible to directly contribute to improving social justice in an underdeveloped country like Haiti with a project that is based on the circular economy principles?

We hope that the reader, if will not find in our argumentation and in our case study an exhaustive answer to this question for obvious reasons of generalization issues, will at least learn something more in this direction, something that he could later elaborate adding from his own experience and that consequently, he will be able to generalize.

3.2 The Analysis Model

Many concepts are addressed in this research and here we will clarify their meaning, with a special regard for those that are linked the most to our objectives.

Our work is focused on one aspect of human existence, a condition that still affects billions of people around the world: poverty. Poverty is a familiar word for people and a word that is used extensively, but its definition is not as clear as we can think. This is due to the fact, as reported by Spicker (2007, p. 229) that “words acquire meaning from their use, and words that are used extensively are liable to acquire not a single meaning, but a range of meanings”. Furthermore “the specific meaning we attach to the word Circular Economy and Social Justice in Haiti Under the Prism of Social Work

poverty depends upon the underlying concept of poverty we have in mind” (MacPherson & Silburn, 1998, p. 17). This underlying concept is built on our experiences and cultural background and can vary a lot from person to person.

About the definition of poverty, thus, we agree with the following affirmation of Spicker:

Debates on poverty have been bedevilled by an artificial academic formalism, which has insisted that there must be an agreed core of meaning, that contradictory examples showed that certain uses were ‘right’ while others were ‘wrong’, and that disagreement was based not in a difference of interpretation or the focus of concern, but in a failure to understand the true nature of the problem. Poverty does not, however, have a single meaning. It has a series of meanings, linked through a series of resemblances.

It follows that to define poverty we can use many different metrics and as many as twelve have been identified by Spicker (2007). Here, for the sake of brevity, we will not reports the all of them, for which we refer to the figure below [Figure 6]. Spicker (2007, p. 240), finally get to the conclusion that “poverty needs, then, to be seen as a composite concept, embracing the range of meanings”.

However, while poverty can be evaluate and consequently described in many different ways based on the metric we privilege, one is the most comprehensive and it is the one placed at the centre of the figure of Spicker: unacceptable hardship. The people to which our research is dedicated, the Haitians, suffer of unacceptable hardship every day.

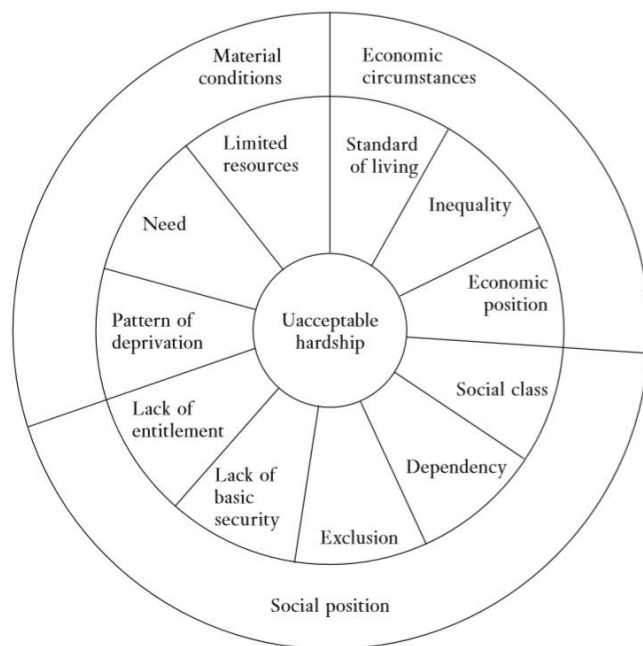


Figure 6: Family resemblances between different concepts of poverty (Spicker, 2007, p. 240)

Furthermore, if defining poverty is a hard task, the same is true for its measuring. Measuring of poverty, in fact, has generated a large literature⁴ (Sletten & Egset, 2004) but a comprehensive argumentation on this aspect, as well, goes beyond the scope of this essay. While Haiti has experienced a stagnation interspersed

⁴ For a comprehensive view on the debate see Ravallion, 1998 and Deaton, 2001.
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with periods of decline in GDP per capita at least since the 1950s (Sletten & Egset, 2004) its population is surviving deprived of most basic services, that the government is not able to provide, such as access to drinking water and electricity just to make an example. To evaluate poverty, however, one can use a monetary indicator, that is based on a monetary definition of poverty. For example “the World Bank uses a monetary measure to define extreme poverty, setting it as those who consume less than the equivalent of US\$1.90 per day, based on a formula for purchasing power parity across nations” (Greeley, 2019, p. 2). In Haiti most of the population fall under this category, as, at least 75/80 percent of the population was living with less than 2 dollars per day before the 2010 earthquake (Amuedo-Dorantes, Georges, & Pozo, 2010; Dupuy, 2010), after which, GDP per capita, as we demonstrated, fell considerably⁵.

It is universally recognized that “growth is necessary for poverty reduction” (Shepherd & Diwakar, 2019, p. 1). Nevertheless Haiti has experienced very few periods of growth in the last half a century while the trend has been usually that of de-growth. For this reason and as we argued before in this work, Haiti does not fall under the category of developmental states, which is used to describe those countries of the Global South that are recently interested by a rapid process of growth and industrialization, but, at the contrary, Haiti fell under the category of the Least Developed Countries of the world (United Nation, 2018).

In this work we propose a new method of development which is sustainable because is based on the circular economy principles and that is intended to address not only the ecological and economic issues that are affecting Haiti, but that sees among its priorities also the social problems of Haiti, that often are left behind in circular economy discourse. It is a model of sustainable, economic and social development, addressed to a country which, up to date, seems to have not started to develop in any direction. This make of it a very desired solution for Haiti. Sustainable development has been defined in the already mentioned Bruntland report of the United Nations as a strategy for “maintaining [or in Haiti, to start] an economic advancement and progress while protecting the long-term value of the environment” (Emas, 2015, p. 1) to which, in our case, we will add the creation of a local circular economy based on the transformation of a local resource, widely available in Haiti as in the other underdeveloped countries:

⁵ If in Haiti at least two people out of three live with less than 2 dollars per day, the most recent estimates show that globally 10% of the population is living in the same economic conditions (World Bank, 2019, in Greeley, 2019).

waste. Waste, is the last step in the life of a product which value has been underestimated and only recently, with the spread of the concept of circular economy, has started to be taken in more consideration. In underdeveloped and developing countries the majority of products and goods available are imported. If in the least developed countries of the world the concept of circular economy is applied to a local grassroots new model of business, the value of waste will generate a circular path to the only benefits of the people who live in these countries. New job opportunities will consequently arise while trash, usually improperly managed and widely available, will be reprocessed and will start a new life under new forms.

Notwithstanding in past and contemporary scientific literature the application of circular economy in underdeveloped realities and in the least developed countries of the world has not been taken in consideration, until now. This research wants to fill this gap starting a discussion on this topic. The main contribution we will provide, is the presentation of a case study on an enterprise that works in Haiti, transforming and upcycling local waste into a new product to be sold locally. The organization is a socio-economic enterprise, which is intended to address social and ecological issues from the inside of the local economy, and not from outside and in contrast with it, as the most of the non-governmental organizations active in Haiti do. If in results we will discover that the circular model implemented by the organization analyzed produces positive changes in Haiti in the three fields of ecology, economy and society, the so called ‘three pillars of development’, the theoretical assumptions we generate in the first chapters will be confirmed by our case.

In any case, being this work of exploratory nature, further studies in this direction will be needed to generate more concrete answers and to have a more wide overview on this topic.

3.3 Type of Research: a Case Study

In the fourth and last chapter of this work a case study will be presented. However, before we get into the matter, we believe it is important to make some clarification on what we intend by case study as this concept definition is not set in stone. In fact it has been reported that “almost every author on the topic ‘case study’ presents his own definition” (Swanborn, 2010, p. 13) and that, furthermore, also the “case study methodology

constitutes a difficult and confusing field because many research traditions use the same expression, ‘case study’” (Swanborn, 2010, p. VIII).

To make even more confusion, the term may refer to the process of research as well as to the end product of such a process. The British educational thinker L. Stenhouse, for example, suggested the use of the term ‘case record’ for the final result of a case study research (1985), “but this suggestion has not been followed” (Swanborn, 2010, p. 10).

Summarizing, “case study is not a term that is used in a clear and fixed sense” (Hammersley, Foster & Gomm, 2000, p. 2) and therefore, some clarification on what we mean with it in relation to our research, is due to our readers.

The case study is one of the main science research strategies along with survey and experiment. It has been defined by Robson (1993, p. 146) as “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon [that is, in our case, the FdS organization] within its real-life context [the Haitian reality] using multiple sources of evidence [that are, for our concrete case, websites, written documents, videos, an interview and more]”.

Others authors instead, partly disagree with this definition as for example Stake (2005, p. 443) who stated:

case study is not a methodological choice but a choice of what is to be studied... By whatever method we choose to study the case. We could study it analytically or holistically, entirely by repeated measures or hermeneutically, organically or culturally and by mixed methods, but we concentrate, at least for the time being, on the case.

The same author also defines the case study as “the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (Stake, 1995, p. XI).

Howsoever the focus is, accordingly, on the ‘case’, so that a definition of what the case is or represents, become very important to understand the case study in its peculiarity. The English word ‘case’ originates from Latin ‘casus’ that originally meant ‘event’, ‘fall’, ‘accident’ and, thus, ‘case’. The case, or phenomenon, it is generally a social event, but it can be also a person or, as it is in our study, an organization. It can be, furthermore and even more generally, something that it is happening. It is important to say that the case study is, as the word itself describe it, a study of a case, while the case has to be intended as “a single instance of a class of objects or entities” (Nunan, 1992, p. Circular Economy and Social Justice in Haiti Under the Prism of Social Work

79) or even better “one example, or a very restricted number of examples, of a social phenomenon” (Swanborn, 2010, p. 38).

Another key point to understand the case study it is that the phenomenon (or better, the case) needs to be studied ‘in its real-life context’. The contextual aspect became fundamental in a case study research and allow us to make a very important distinction between the case study and, for instance, the experiment as this latter is mostly developed in laboratories or, anyway, in artificial contexts that are created by the researchers.

Another important distinction between the two is due to the fact that “in experiments, the researcher creates the case(s) studied, whereas case study researchers construct cases out of naturally occurring social situations” (Hammersley, Foster & Gomm, 2000, p. 3).

In Yin book “Case study research, Design and Methods” (1984), one of the most mentioned works while speaking of case study, the author explain that we should prefer this method “in situation when:

- I- the main research questions are ‘how’ or ‘why’ questions;
- II- a researcher has little or no control over behavioral events; and
- III- the focus of study is a contemporary (as opposed to entirely historical) phenomenon”.

Anyway, there is a disagree on the third point as, for example Swanborn, dissents with it. Swanborn, in fact, opened the possibility to apply the case study on past phenomena as he reports with this affirmation: “with regard to phenomena in the past, a retrospective approach is fitting, and can be put into practice in a case study, although observation as a research technique is excluded” (2010, p. 13).

In any case, all the mentioned authors agree that the case study “refers to researches that investigate a few cases, often just one, [but] in considerable depth” (Hammersley, Foster & Gomm, 2000, p. 3).

However, another point of disagreement between the researchers, maybe the most significant one in the case study field, regards the generalizability of a case study research. The positions are two, split between the defenders of the generalizability, even if at different levels and in different ways according to the different authors, and the defenders of the case study as a descriptive study of the unique. The two types of research are named by Swanborn (2010, p. 38) as ‘pars pro toto’ (a part representing the whole) for the first type and, alternatively, when there is no intention of generalization, ‘stand-
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alone cases'. To summarize, the first kind of researches propose the case study as a study of a single case, where the final objective is to deeply describe, yes, the phenomenon under investigation but without excluding the research of general laws that, by extension and under a positivistic point of view, can be applied to others similar cases. The most known authors that defend this position, or that see the case study as a generalizable approach, are Yin (1984, 1994), Flyvbjerg (2006) and Gerring (2007).

The defenders of the case study as a descriptive study of the unique instead, perceive every studied case as a unique piece of knowledge, that, as a consequence of all the different variables that constitute it and differentiate it from, for example, another one (even when there is a close degree of similarity), but that cannot be generalized nor can be founded, in its roots, general laws that can be used to explain a similar phenomenon. This ensemble of ideas, which however, at least in its most extreme forms has been criticized and corrected (Flyvbjerg, 2006), it is defended by a minority in the scientific world and mostly by authors of the previous generation such as Campbell & Stanley (1966), Cronbach (1982) and Bissex (1987). In this regard, Stake (1994; also in Chih-En, n.d., p. 109), made a point that is worth nothing: "when the commitment to generalizability is too strong, the researcher may risks neglecting important features that might help to understand the case itself", but, from the other side, to deny a priori the idea that similar cases can be regulated by common rules, also can result in a loss of part of the information out-coming from a case study work.

To conclude, in our work we will present a case study of one organization that is operating in Haiti using the circular economy principles. We will do so, in order to investigate if CE projects held in an underdeveloped country such as Haiti can foster social justice along with the other benefits they eventually bring. We decided finally to go for the case study in the belief that, while what we will discover will be of specific interest for Haiti, a certain degree of generalization of our findings will be possible in light of what we reported here and so, we hope that our case will be useful to understand other projects held in Haiti or in other underdeveloped realities. Our case study, in conclusion, we believe is of extreme importance to increase the knowledge of the applicability of CE in Haiti for two reasons: the first is that it will "be a direct and satisfying way of adding to experience and improving understanding" (Stake, 1978, p. 7) of this unknown field of investigation and the second, in the belief that 'Knowledge' is always composed by the sum of particular cases, in providing one of these cases for the readers review.

Now that some clarity has been made over the concept of case study, in the next paragraph, we are going to explain how and why we have chosen our sampling.

3.4 Sampling

In qualitative research, sampling procedures are quite different than in quantitative research. For example experts of the subject agree that this process can be more creative for qualitative studies but that, “however, qualitative researchers should not take sampling procedures too lightly, and if they do, it will affect the richness and the appropriateness of the data” (Ishak et al. 2014, p. 29). Anyhow, many qualitative researches simply avoid to explain their sampling procedures or, in any case, “the question of sampling [in qualitative studies] often seems to receive less attention in methodological discussion than questions of how data is collected or is analyzed” (Curtis, Gesler, Smith, & Washburn, 2000, p. 1001) resulting this in a reduction of the quality of the research.

To underline the importance of a deeper attention for sampling procedures in qualitative works and in cases selection Stake (1994, p. 243, in Curtis et al., 2000, p. 1002) affirms that, if qualitative research requires cases to be chosen, then: “[...] nothing is more important than making a proper selection of cases. It is a sampling problem”.

In any case, as sustained by the conclusions of the Curtis et al. article (2000, p. 1012), “a simple ‘blueprint’ for qualitative sampling could not be imagined, since each study requires a specific strategy”.

In result, how can we deal with these assumptions, in order to do a good sampling choice? The answer can be found in this statement of Devers and Frankel (2000, p. 264):

In essence, the researcher must make the design more concrete by developing a sampling frame (i.e. criteria for selecting sites and/or subjects) capable of answering the research question(s), identifying specific sites and/or subjects [that can also be organizations], and securing their participation in the study.

Furthermore, the two authors suggest that researchers, when producing qualitative studies, should utilize (in most of the cases), the ‘purposive sampling’ method. Purposive sampling is a sample procedure that bases the selection choice on the grade of ‘information richness’ of the possible cases. This means that cases rich in information are preferable in a sampling procedure. Purposive sampling strategies differ from probability

or random sampling strategies, that are methods of sampling most commonly used in quantitative research.

Summing up, our sampling choices have been guided by these ideas and here we will report how we proceeded for the selection of our case study.

As reported, the research questions of our study are, summarizing, the following: 1- Can circular economy find application in Haiti (and more generally, in the least developed countries)? 2- If yes, how can it contribute to foster social justice?

The first step, thereafter, has been the one of developing our sampling frame. Given that one of the country main problems is its dependency from solid fuels for cooking, and that a lot has been written and investigated in this field, we consequently decided to look for organizations that operates in this sector, as, to produce sustainable alternatives to charcoal can be the perfect activity for CE practices in Haiti.

Consequently, what we needed, was an organization operating in Haiti in the charcoal value chain in a green, sustainable and circular way. Secondly, as the topic of our work is the one to investigate benefits for the local population in terms of social justice, we decided to exclude all those organizations that do not employ Haitian staff or that, does not see among their personnel a great number of Haitian nationals. If we would have chosen a foreign organization that counts only foreigners among the staff, we would have consequently not respected the purposive sampling method. To consider or to pay attention to those organizations could have helped in another kind of researches, but, has not a central purpose for this one.

What we have found, has been essentially that at least two organizations are operating in Haiti in the charcoal value chain, applying to their projects concepts that are typical of the CE, and that both employ a great number of Haitian nationals (while they have been founded by US citizens).

The first organization is called ‘El Fuego del Sol’ and it is based in Port-au-Prince, municipality of Pétionville, while the second organization is called ‘Carbon Roots International’ and it is based in Quartier-Morin, a small, rural municipality of the North department.

Our first intention has been consequently to do two case studies, one for each organization. As they were located in two very different environments, we thought that was going to be very meaningful to analyze and compare them both.

The next step was to contact the heads of the two organizations, and to submit a request for a possible collaboration in providing information for my research. With the *Circular Economy and Social Justice in Haiti Under the Prism of Social Work*

CEO of 'El Fuego del Sol', Kevin Adair, we were in personal contact since the summer of 2018, and he immediately guaranteed his availability to collaborate. The second organization, on the other hand, has not responded to our e-mails, nor to the contact requests that have been sent via their official website.

This led our choice, that consequently, in the absence of a feedback from 'Carbon Roots International' has been of including only one case study to the research. We decided, in any case, to leave a door open for a while, waiting for answers from 'Carbon Roots international' that in any case, never arrived.

Aware of the limitations that this would have generated to our research, we finally decided to include as well a short paragraph dedicated to this organization, where some important aspects would have been analyzed too.

To evaluate the choices we made, and have a better picture of the strengths and the weaknesses of our sampling, we decided to double check our procedure using the well-known 'checklist' of Miles and Huberman (1994 p. 34). The list is composed of six attributes or advices that a qualitative researcher should keep in mind while addressing sampling procedures. This list has been interpreted later by Curtis et al. (2000, p. 1003) and in our text we freely consider both versions.

What we are going to do is to report the six attributes and see how many of them are respected, enhanced or limited by our choices. It is important to clarify that a research does not need to respect all the six points in detail, and examples of this are reported in Curtis et al. (2000).

1- The sampling strategy should be relevant to the conceptual framework and the research questions addressed by the research. Our case is highly relevant as it concerns an organization that is currently operating in Haiti, using CE principles to address Haitian ecological and social problems. This organization is producing economic revenues from its activities and, involving many Haitian workers in the process, redistributes these revenues locally.

2- The sample should generate rich information on the type of phenomena which need to be studied. We believe that being our case a good expression of the phenomenon that we want to analyze, it will provide rich information on this subject. Moreover, even if with limited means (we were not able to establish a first-hand contact with a second organization), we will include a comparison with another organization, which, being located in a rural area, will allow us to discover something more about the differences of

similar projects that are due to the environments in which they operate, typically urban the first, and rural the second.

3- *The sample should enhance the 'generalizability' of the findings.* Our sample is composed of only one manifestation of the phenomena we are interested in. This could be seen as a limiting factor to generalization. However, since we intend 'Knowledge' as the sum of specific cases, the case study we will provide may indeed be useful material for other researches, but in order to arrive at some conclusions concerning other realities, it will be necessary, however, to provide other specific case studies.

4- *The sample should produce believable descriptions/explanations.* Our sample would produce believable description and explanation taking in consideration that we will use as reference selected material available online: official websites, articles, academic researches, organization's papers, video documentaries, radio interviews and so on. Secondly, interviewing the CEO of the organization, we will add useful first-hand information to our descriptions and explanations. The weak point of our research lies in the fact that we will not be able to conduct research on field, through participatory observation and that we will not get in contact directly with local Haitian workers, due to limitations such as time, budget, distance, and language.

5- *Is the sampling strategy ethical?* This is not a problem for our research as it will permits informed consent and the ethical nature of the relationship with the informant will not compromise the results.

6- *Spend some time on whether your sampling frame is feasible.* Feasibility of our frame is ensured by the availability of many information on our case available on the web and by the first-hand data we will collect with the interview. However, as for the previous point, field investigation will not be possible, due to time, distance and budget limitations. Furthermore, as to include the organization 'Carbon Roots International' to our research would have mined the feasibility of our sampling frame, since we had no feedback from it, we decide to leave it out and concentrate our efforts on the 'El Fuego del Sol' organization.

Now that we explained the strengths and limitations of our sampling procedure we will, by the next paragraph, get into the detail of the data collection.

3.5 Data Collection

This research has been written with the use of qualitative data exclusively. While most of the data we used to redact the first three chapters have been collected through bibliographic research, for the fourth chapter we used also different sources, whereas peer-reviewed articles have been used as well. Some of the scientific articles we employed for the case study have been written by the CEO of the analyzed organization, Kevin Adair, and have been useful to understand his point of view on the matter as to add information on the organization. The first of the two analyzed, for example, is an internal study that has been later published, which goal was to measure El Fuego del Sol (FdS) improved cookstove emissions in the field under typical usage and collecting personal exposure data to be compared with the traditional Haitian cookstoves and cooking habits (Adair, 2018). The second study, that for the moment is in the process of publication, has been kindly made available for our review by Adair. It regards the applied implications of the Behavioral Economic in the developmental field work.

Furthermore, data has been collected through the official website of the FdS organization, through documentary videos, texts, and charts that are available online along with other sources.

In addition to this material, who is writing, in the summer of 2018 has undertaken a one-month trip to Haiti, a period during which he was hosted for free in the FdS facility. The trip has been possible thanks to the invitation of the organization itself. The purpose of the trip was that of probing the field in order to get a first idea of the organization and to evaluate if it could have constituted a good subject for our case study. These motivations have been revealed since the beginning to our hosts and we believe they did not constitute an obstacle to the interaction with the staff of the organization.

Unfortunately our research study was still in its infancy when the journey to Haiti was undertaken and, consequently, on that occasion, we did not have the foresight to collect more information than those we collected through the simple observation and interaction with the locals.

In any case, this brief experience of participant observation has been in some way very useful, as it brought us in contact with many native-Haitian workers, employed directly by the organization. With these people and with their families, we had the opportunity to spend time, sharing thoughts, opinions and hopes for the future. Furthermore, during the Haitian stay, we have been able to observe, and in some case to

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take part, in some of the organization's activities. At the end of this experience, in fact, we were of the opinion that a case study of this small eco-social enterprise would surely have brought useful material for our research and for those who, after us, will have had to deal with the same issues.

Besides, more data has been collected by interviewing the CEO of the organization, Kevin Adair, which has always been very helpful in collaborating with us. Ten meaningful questions have been addressed to our informant [Appendix 1]. To communicate has been chosen the Zoom® communication software. Zoom® has been preferred as it allow to record the conversation, while the other available application, Skype®, does not provide such a service. The interview lasted for one hour and fifteen minutes, with the camera turned off under the request of our informant. The following days emails have been exchanged to confirm the points not clarified during the interview.

The reasons why we have chosen to utilize the internet method of interview (very similar, in this case, to the telephone method of interview), moreover, was supported by the fact, as it has been reported, that internet interview methods and traditional interview methods generate similar findings (Ross et al., 2005; also in Hunt & McHale, 2007). The advantages, in terms of cost, we believed could have justify the disadvantages, such as the loss of some non-verbal information that we could have collected with a classical face-to-face interview.

Finally, informed consent praxis was accomplished for our interview with Kevin Adair. Furthermore, Adair has been made aware of our research intentions since the beginning and the fact that we were working to evaluate and describe the organization he founded and currently leads, in order to understand more about the applicability of circular economy practices in contexts of underdevelopment, was clarified to our informant.

3.5.1 Issues and weaknesses

During the collection process we found a series of issues in regard to our data that are worth to be mentioned. Here we will accomplish with this task.

The main weakness of our data is due to the fact that in this research, that wants to investigate the role of circular economy in fostering social justice in Haiti, the voice of the Haitian people will not be systematically collected and, consequently, reported. This limitation is due to many reasons. From a side the distance to Haiti and the high costs to travel to that country from Europe did not helped. From the other side, the fact that the Circular Economy and Social Justice in Haiti Under the Prism of Social Work

majority of the Haitians that works for our organization and that could have brought useful information to our study does not speak English or French, but Creole only, which is the official language of the country and the only language widely spoken in Haiti. French, while it is recognized as well as official, is spoken only by few people, usually by the elites only. Furthermore, a great part of the Haitians which important opinions could have been taken in consideration in this study, have very little familiarity with the written language and limited access to the internet, and this has constituted another important limit to our investigation.

In conclusion, to interview or to submit a written questionnaire to the Haitian people involved in the production of sustainable green solutions to charcoal, would have been a hard task to be accomplished here. Accordingly, on-field investigation, such as for example, participant observation or collective discussion, and other methods, would have required an extremely large amount of efforts and would have gone beyond the real economic possibilities of this study.

This does not mean that data collection methods as the ones here reported are impossible to be fulfilled and that the voice of the Haitian that are involved in these dynamics could not be heard. Maybe, future researches in this field, with better resources than ours, could deeply investigate this subject and/or evaluate our conclusions by triangulating our results with the results obtained from other methods of investigation.

3.6 Data Processing

In our research we had to deal with different kind of data, coming essentially from scientific articles, websites, documentaries and other videos, and an interview. While the all of these data are in their essence of qualitative nature and, considering the type of our research (case study) and the questions we address, no computer software to automatically process our data has been used, as simply it was not necessary for our scope.

However, data have been analyzed in order to identify themes, patterns, and concepts that will contribute to the understanding of our hypotheses and to answer to our questions. Meaningful extract of the sources we analyzed have been reported and discussed in the text.

Chapter 4

The ‘El Fuego del Sol’ Social-Eco Enterprise: a Long Term Circular Perspective to Create Social Justice in Haiti

4.1 Foreword

For the preparation of this chapter we used data we were able to find online, except for the interview to Kevin Adair, CEO of the organization, which is original. In particular, the official website of El Fuego del Sol (FdS) has been our main source of data as it reports much of the information that have been used for the writing of the following case study. On this website, in addition to the essential information reported, a series of links

helped us expand our research with further material. In particular we refer to the ‘media’ button, through which visitors can link to more data in regard of the organization, such as press articles, videos, documentaries and a radio interview. Through the ‘media’ button, one can also be redirect to another website, called ‘Medium’



Figure 7: The author (second-left) in company of three employees of FdS. Summer of 2018. Pétiion-Ville (Port-au-Prince), Haiti

were many articles and papers written by Adair are made available.

Besides, we have been able to visit the organization in July 2018 [Figure 7], and in this occasion we personally met with both Kevin Adair and the general manager of the organization, Frantz Fanfan. Subsequently, regular contacts have been maintained with Adair, and during the last year opinions and updates have been exchanged using

alternatively both the telecommunication applications Skype® and Zoom® and by email. Consequently, some of the statements, ideas and arguments that will be made and reported in the following case study have developed thanks to this professional relationship that we kept with the founder of El Fuego del Sol while others are rooted in the experience we had on the field, during our stay in Haiti.

4.2 The ‘El Fuego del Sol’ Organization

4.2.1 Origins

The ‘El Fuego del Sol’ organization, as the name suggests (from Spanish, the fire of the sun), was not born in Haiti but instead in the neighboring Dominican Republic (DR). Its roots date back to 2005 when an American citizen arrived to the island from Chicago, Illinois, with the plan to begin an organization working on water purification. His name is Kevin Adair and at the Illinois Wesleyan University he pursued two majors, experimental psychology and theater. Adair, after speaking to the locals about the daily needs in their lives that required improvements, “found time after time again that [instead of water purification] cooking was cited as a serious problem. With a joint Haitian-Dominican-American founding team, El Fuego del Sol was born” (El Fuego del Sol, n.d.) and the direction to be followed was now clear.

The staff of El Fuego del Sol started, consequently, the developing of a program for building, distributing and selling solar ovens in the DR and this explain the reason behind the Spanish name that has been chosen for the organization. “The Grupo Jaragua & FdS project reached over 200 families with clean-cooking sun ovens promotion, introduction, training and follow-up” (Adair, 2019, p. 31) it is reported in the latest paper written by the founder of the organization. Despite the success of this initiative, however, soon a big limit to a widespread adoption by the target population of the solar ovens became evident, the fact that they could not be used in the absence of sun, at night, or on rainy and cloudy days. Furthermore solar ovens are quite expensive as the final selling cost is around three hundred dollars each, a price that was not affordable for Dominican families, and the ovens distribution was happening thanks to donors in the US. Being one of the core principles of FdS the one that say “where traditional NGOs provide gifts, FdS creates long-lasting employment opportunities” (El Fuego del Sol, n.d.), it was now mandatory to change and the time for change was mature.

The success achieved with the project of solar ovens should not have constitute a limit for a radical change in the project. The desired solution should have guaranteed to the Dominican families to cook at any time of the day, but mostly, should have also been produced locally in order to contribute to create stable jobs, and above all, it should not have been simply donated, but purchased by the latters because convenient to them. This would have guarantee the adoption of the solution and the self-financing of the project. Besides to be locally produced by local workforce, the new technology should therefore have entered the market and consequently take the distance from traditional developing aid methods, which are mostly based on donations. Donations, as many claim⁶, while constitute an initial and temporary relief in cases of need, are long-term highly counterproductive, as they damage local markets and create dependency and not empowerment. Aid models based on donations “do not always contribute positively to the democratization process” while “the unintended consequence of promoting this model has been the growth of a culture of ‘organised dependency’ at the grass-roots level” (Sahoo, 2013, p. 258).

To paraphrase an old popular saying, that has been usually not listened enough in developmental aid, and especially as we have seen in the second chapter, in Haiti; to produce a long lasting change one has to find a way to teach how to fish: this will feed someone for a lifetime. Traditional methods of aid, unfortunately, still continued to provide fish, instead of teaching how to fish.

4.2.2 The beginning of the briquettes project

Looking for ecological alternatives that could have met the above requirements, FdS started in Villa Jaragua, a Dominican city close to the border with Haiti, to produce ecological briquettes made of recycled paper, cardboard and sawdust [Figure 8], to be associated with imported cookstoves from China. The briquettes would have replaced wood and charcoal biomasses for the cooking of food. These cookstoves were not yet made locally, but represented the first step in the path for the substitution of the

⁶ The anthropological study of gift practices received a great contribution with Marcel Mauss and his famous work *‘Essai sur le don. Forme et raison de l’échange dans les sociétés archaïques’* (1924). In it, the author argued that gifts, as are intended by the Christian culture, we can say as charity or ‘free gifts’ without expectations of return, are in contrast with the idea of gift in ‘archaic’ or ‘traditional’ societies. This can led to a series of issues when the ‘free Christian gift culture’ become part of the developing/charitable aid model. Many authors have later argued that donation methods, in developing and charitable aid, are counterproductive. For example see: Stirrat & Henkel, (1997); Sahoo, (2013); Wydick, Katz & Janet, (2014).

traditional inefficient and unhealthy cooking methods with more efficient ones. The imported cookstoves were specifically made to cook in combination with the ecological non-carbonized pressed briquettes locally produced. This method, being much more efficient than the traditional one, contributed in saving trees both because less biomasses were needed to cook a meal and because the utilized biomasses came from waste materials such as paper, cardboard, sawdust and others. Furthermore, the briquettes-cookstoves system was much closer to the cooking habits of the Dominicans in respect of the solar ovens system and consequently was much easily adopted. The briquettes, locally made with local waste, created job opportunities while helping to improve local environment. The path to be followed was finally established.



Figure 8: A briquette made of paper, cardboard and sawdust, (FdS, 2019)

4.2.3 Moving to Haiti

In 2012, after two years since the start of the briquettes project in the Dominican city of Villa Jaragua FdS moved to Port-au-Prince, Haiti, under the invitation of the World Food Project (WFP). This started a collaboration which continues to this day, whose preamble can be resumed by the following statements of Benoit Mazy and Joseph Davidson (2012, also in Adair, 2019, p. 31):

Every day, schools burn 85 grams of charcoal per served meal. WFP's school feeding programme in Haiti is covering approximately one million children, which means the amount of charcoal burned per day reaches 85 tonnes... The use of charcoal is very costly, and the current cooking method creates indoor air pollution and significant health issues for cooks. WFP has worked towards mitigating this impact to protect the environment, reduce the costs of cooking school meals, and improve cooking conditions for cooks.

The WFP was then looking for a viable solution to substitute wood and charcoal for the preparation of the meals of the kids in the Haitian schools. This organization was aware already of the non-carbonized briquettes technology and started, with a Brazilian funding, to buy, stock and distribute more clean cookstoves imported from India in many Haitian schools (WFP, 2012). What they needed, consequently, were now huge quantities of briquettes to be used with the cookstoves they were distributing. When the WFP learned about the success of the briquettes project of FdS in Dominican Republic, offered to start a big pilot project to provide briquettes to the Haitian schools of Port-au-Prince. This has constitute the opportunity to scale up and expand that FdS was waiting for. More briquettes would have signified less charcoal around and the saving of many more trees. But also, as it is important for our research, the creation of many more job opportunities for the locals. FdS accepted the offer.

To start the new operations in Haiti, FdS received a three months grant of USD 18.300 from the UN affiliated agency International Organization for Migrations (Adair, 2019). This funds have been spent “to rent our first facility, build our first [improved] briquette press and hire 20 employees who were selected by the International Organization for Migrations (IOM) since they were still negatively affected by the 2010 earthquake” reports the CEO of FdS (Adair, 2019, p. 32). The latter, in his latest study, also reports an extract of an email who received in 2013 by Tobias Metzner, IOM Coordinator, that is worth to be mentioned here as well: “...IOM worked with FdS in the context of a livelihood project to engage twenty victims of the Earthquake in sustainable jobs. Kevin was very willing to [pay the workers] a living wage, almost twice the minimum wage, and a profit share model”.

A great start, from the point of view of our research. Looking for improvements to social justice in Haiti, we found already that this collaboration between WFP, IOM and FdS had, since its inception, created twenty new jobs opportunities that have furthermore been offered to people in a fragile situation as they were still negatively affected by the earthquake of 2010. Moreover “seven of those original workers are still with FdS today, six years after the IOM funding of that program was completed” (Adair, 2019, p. 32). To these workers, while over time some of the 20 original ones have followed their route and left the organization, many new ones have been hired. From the last data available that have been shared with us by Mr. Adair during the interview, FdS could count in 2018 on twelve full time employees plus thirty part time employees among the Haitian nationals, for a total of forty-two people.

4.2.4 A Socio-eco enterprise

The deep attention to social aspects, which FdS promises to improve through its environment-oriented projects, self-financing itself thanks to the revenues generated from the sale of its products, makes of this organization what it can be defined a Social-Eco Enterprise (SEE). As reported by the funder, grants are also considered, but “FdS utilizes grants to achieve efficient start-up and scale up of operations, but then funds the programs long-term from program based income” (Adair, 2019, p. 32). While being a SEE, El Fuego del Sol also holds US IRS 501(c)(3) status, that allows donators from the United States to deduct the amount of their donations to FdS from the taxes paid to the US government. Therefore, even if FdS has a charitable recognized status with the US government, so as not to have to give up any possible donation which in this field are very important, it never applied for any NGO recognition with the Haitian government. The reason of this has to be found in the fact that FdS method, as we will see, while keep similar objectives, is in fact very different from that of the classic NGOs from which it would also like to take a certain degree of distance. For this reason the best way to define FdS is not as an NGO, but, as we have reported and as it is wanted by its founder, as an enterprise, and more specifically as a social-ecological one.

Moreover, as indicated in the official website “FdS Haiti follows international fair trade standards in all operations in Haiti, the DR and the US. FdS requires all suppliers and business partners to follow fair trade standards as well. We are deeply committed to being ethical, sustainable, and impactful in all that we do” (El Fuego del Sol, n.d.).

4.2.5 Awards and accolades

FdS has also been recognized locally and internationally for its ecological and social work. The list of awards and accolades, available on FdS website, is also reported here, for the reader review:

- SOCAP Social Entrepreneur Award - 2014
- Semi-Finalist, Buckminster Fuller Award - 2014
- Semi-Finalist, Echoing Green Award - 2015
- Green Grab Presenter, MCN - 2015
- Energy Globe Award (National Winner for Haiti) - 2015
- Winner, Inter-American Development Bank Ideas Award - 2015
- Presenter, Inter-American Development Bank INE - 2016
- Regional Winner, Digicel Entrepreneur of the Year Award - 2017

4.3 The ‘Listen. Lead. Listen Again’ Strategy

Before to enter into the specifics of the briquettes project we will mention some of the ideas that are at the bottom of the FdS developmental aid method. These are the core concepts of FdS and are useful to understand on which theoretical bases it operates. Furthermore these ideas can explain the success of this organization in a field where many others have failed.

Adair, briefly presenting the organization he leads, at the beginning of his paper ‘Change is hard, a unified theory of Behavioral Economics: applied implications, multiple sectors, and developmental field-work’ (2019, p. 4) states:

The project is El Fuego del Sol - Haiti (‘FdS’) – a Haitian Social-Eco Enterprise. The method is a co-created, poverty-reduction, and job-creation model, working with local partners to introduce/implement globally-available technology solutions that are culturally acceptable for Haitian people. And, the philosophy is ‘Listen. Lead. Listen Again’ (LLLA).

The focus therefore falls on the fact that the innovations and solutions that FdS introduces and implements must be culturally accepted by the target population, in this case the Haitian people. To improve acceptance, consequently, FdS applies the philosophy of ‘Listen. Lead. Listen Again’ to its method. However, before to enter the detail of it we will introduce the readers to a second core concept of FdS. It is a concept that in the author’s ideas underlies all human behavior and which development has been influenced by the behavioral economics (BE) discipline: the concept is ‘Change is Hard’ (CIH). Adair, in his paper argue that the concept of CIH is far superior to other proposed concepts to be an effective unifying core concept of the behavioral economics. Here, however, we will not enter into the specific of the debate on which concept can be better considered the basis, or the unified theory, of the behavioral economics discipline⁷. Nevertheless, following Adair, we argue that “Change is Hard, appears to be a more accurate BE core-concept” (Adair, 2019, p. 5).

⁷ For a better argumentation on this debate, consult Xavier Gabaix (2017), which propose as the Unified Theory of the Behavioral Economics discipline the concept of ‘limited attention’ or Richard Thaler, the founder of the behavioral economics and the author of ‘Misbehaving’ (2015) which criticize Gabaix concept and propose, in the radio episode of Freakonomics n. 304, on air on July 11, 2018 [Available at: <http://freakonomics.com/podcast/richard-thaler/>], the concept of ‘the world is hard’.

That change is hard, for example, can be observed in the everyday life of the people around us and, if the reader of this work began to think for a moment about this matter, he would surely be able to make dozens of examples drawn from his personal experience with the people he lives with, and why not, from himself. People are often reluctant to change the behaviors they are used to, to change the ideas they have interiorized, to change the lifestyles they assumed. This conservative behavior is well known in behavioral studies and can be explained by two heuristics. The first one is called ‘Status Quo Bias’ and the second the ‘Sunk Cost’. Status quo bias is a strong influencer in decision making. When people have a decision to take, they tend to favor their status quo, or, to disproportionately stick with it, as is emerged in many decision-making experiments (Samuelson & Zeckhauser, 1988). The sunk cost strongly influences the people decision making as well. While the terminology has been borrowed to traditional economy, the sunk cost heuristic can be described as “a maladaptive economic behavior that is manifested in a greater tendency to continue an endeavor once an investment in money, effort, or time has been made” (Arkes & Ayton, 1999). Both these heuristics govern the ability to change of human beings and strong limit it.

Given these premises, at this point the reader will ask, what does the concepts of ‘Change is Hard’, ‘Status Quo Bias’, ‘Sunk Cost’ and the discipline of Behavioral Economics have to do with Haiti and developmental aid?

To answer, we will use again Adair’s words (2019, p. 5):

Once ‘Change is Hard’ (CIH) can be comparatively verified as the Unified Theory of Behavioral Economics, then its implications can be explored in relation to: core values of Behavioral Science, current advances in international developmental models, recent field implementations that ignored CIH, a prominent field implementation directly based on CIH, and a CIH-based plan for the long-term co-created development of the Caribbean island-country of Haiti.

Change is hard, thus, and development aid should keep this well in mind when introducing new technologies that require a change in the behavior of the target population because status quo bias and the sunk cost can strongly limit the spread of any new technology. This is particularly true also when it is evident that the change would bring many benefits, some people are usually still reluctant to change their habits⁸. This is again because ‘Change is Hard’ and this concept can be used to explain the failure of

⁸ For a broader argumentation and for examples of this we refer to Adair (2019).
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many projects along the little degree of adoption of new technologies that many NGOs had to face in Haiti and wherever they were operating.

The question that follows is: how can we overcome the CIH obstacle? The answer of FdS is, with the ‘Listen. Lead. Listen Again’ method. As Adair reports this method has been developed at the very beginning of FdS history, when the former arrived to the Dominican Republic with the idea in mind of creating a water purification solution for the chosen community, “but [-continuing with his words-] when we asked people their first priority for a specific improvement in their life, no one mentioned water. The majority of the responses were about cooking fuel. Wood was difficult to collect; charcoal cooking was illegal; and propane was too expensive” (Adair, 2019, p. 4). The ‘Listen. Lead. Listen Again’ philosophy has been developed thanks to that experience and since then it has constitute the starting point of every FdS activity. Resuming, it is composed of an infinite cycle of three single steps, that are (Adair, 2019):

Phase 1- LISTEN: to ask people what they want or need to make their lives better, listening closely to their answers;

Phase 2- LEAD: to suggest and introduce innovations, technologies, operations, services and solutions that local people would not have access to without the participation of the organization;

Phase 3- LISTEN AGAIN: to listen again in order to learn which of the innovations suggested are most likely to be culturally-adoptable, and then create a design-feedback-loop based on those responses.

Summarizing, a project, to be sure of reaching a certain degree of success, must predict with certainty that its innovations and technologies will be accepted by the target community. If this does not happen the project will results with no doubt in a complete failure.

Despite this, in the context of developmental aid, organizations usually introduce changes in the communities they choose to help, which changes, from a Western point of view, seem perfect to solve the problems that they intend to address. Once the investments are made and the necessary amount of money of the donors is spent, armed with good will, the staff moves to the field to introduce the new technologies to the locals. At this point, usually, the staff finally realize that the target community is very reluctant to adopt the new solutions. Once the members of the organization have left the country, furthermore, the donated and not requested technologies are abandoned, sold or utilized for other purposes than the ones previewed by the donors/implementers. In other

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words, when the project ends and all persons responsible for the change leave the country, the locals return to behave as they have always done, resulting this in a waste of money, energy and time for the developers of the project and in no improvements in the life of the target people. The history of international development aid abounds with such examples.

To escape these drawbacks, FdS has developed the ‘Listen. Lead. Listen Again.’ method and it is hoped that in the future, humanitarian and development aid organizations will consider this method before, and during the implementation of their projects.

Furthermore, in order to be successful and accepted by the target population to which is addressed, FdS briquettes project is holistically designed “to be equal or superior to charcoal across all available metrics” (Adair, 2018, p. 8). The metrics have been identified and reported by Adair (2018) and are: 1- Less CO exposure in the kitchen; 2- Less PM_{2.5} exposure in the kitchen; 3- Less pollution to Haiti’s air quality; 4- Boils water faster than charcoal; 5- Highly effective for Haitian cuisine; 6- Less expensive than charcoal fuel; 7- Replace Haiti’s charcoal dirty jobs 1:1; 8- Creates new safer and ergonomic jobs; 9- More ecological: saving the trees; 10- Greatly lower charcoal footprint; 11- Upcycling underused resources; 12- Efficient agroforestry; 13- New forestry for unused lands; 14- Effective stove/ease of use; 15- Design/feedback loops; 16- Multiple income streams for Haiti.

4.4 The Involvement of the Haitians

El Fuego del Sol wanted, since the beginning, to include local people and local communities in its projects. This mission is reported directly in most of the documents of the organization as in the website, in the press, in the video documentary ‘Chabon’⁹ and many other media. During our interview with Adair he also confirmed this belief: development aid must be long term and furthermore it must create long-lasting opportunities on the ground. Furthermore, as reported on the FdS website, two of the goals of the organizations are: 1- To foster growth and 2- To empower local people. Both things that can be reached creating job opportunities and offering those jobs to the most needed among the locals.

⁹ The video documentary ‘Chabon’ is born from a collaboration between ‘El Fuego del Sol’ and the ‘Grupo Jaragua’. Produced and directed by Sam and Jack Powers in 2018 had its premiere screening on January 31st, 2019 at *Haiti Communitere* in Haiti and will be displayed for the first time in the US, in Chicago in September 2019.

The major partner of Adair, that now is occupying the position of general manager of FdS, is Haitian born, emigrated with his family to the Dominican Republic when he was a child. His name is Frantz Fanfan and he is working with FdS since the beginning. Once FdS moved to Haiti, Fanfan, who hold Dominican citizenship, agreed to go back to live in his native country where to continue to follow FdS activities and where to contribute to environmental and social issues through the projects of the organization. This is one of the first history of empowerment of local people that FdS made possible, but not the last. Frantz Fanfan is now recovering from a tough medical operation he had to undergo and we all hope, and wish to him, a speedy recovery.

As we reported, when FdS moved to Port-au-Prince, it hired twenty local people that were selected by the International Organization for Migrations among applicants that were still negatively affected by the earthquake of 2010. Seven of these original employees are still working with FdS today, six years later. This must be recognized, it is a great achievement for FdS being that job stability is universally recognized as an essential aspect of social sustainability. In fact, it has been argued that the organizations that seek to achieve social sustainability in relation to their internal human resources, or people in the organization, should provide their employees with job opportunities which should not be influenced by uncertainties (Lourenço & Carvalho, 2013). This, unfortunately, is hard task in Haiti as economic and market crises, which may result in high levels of job instability, are very common.

In the interview, we asked to Kevin Adair how many people are employed today by FdS. Being that part of the activities of FdS are seasonal, we will refer to the year of 2018 as we believe it is better to have full year data for 2018 than incomplete data for 2019.

In 2018 FdS offered twelve (12) full-time positions and thirty (30) part-time ones for a total of forty-two (42) people directly financially benefits from FdS work. Furthermore, as Adair reported, in 2018 forty percent (40%) of the total were women, while in the management team two out of five also were women. This year, Adair affirms, this situation has not yet changed.

FdS also has a program to encourage and facilitate people with disabilities and at the moment one of the FdS worker is assisted by a wheelchair. On this subject, Adair added that while they have a program, they receive very little application from people with disabilities. For the future, FdS would like to find the way to encourage more disabled people to apply for a position.

Adair also reports that no statistical data or record is registered about the sexual orientation of the hired workers and adds that FdS policy is to hire blindly on this subject. Furthermore FdS has a specific policy for harassment at work including sexual harassment while, focus on the workplace are on efficiency, equality and safety.

In regard of the age range, the youngest Haitian worker hired by FdS in 2018 was seventeen years old, whereas three workers in the full-time group and five workers in the part-time group were over fifty-five years old. The age of all the rest of the workers is included in these boundaries.

4.5 The Briquettes Circular Project

The production of the FdS briquettes as already mentioned, started in 2010 in Dominican Republic. The method, initially, was slow and the major improvements have been made in Haiti, especially with the introduction of a new improved press that allowed faster production. Now, El Fuego del Sol is working with three of these presses. Furthermore, in Haiti, the imported inexpensive cookstoves to be associate with the briquettes to reach better performance have also been substituted with locally made, FdS designed, improved gasified cookstoves that now reached the eighth generation, while FdS is working on the development of a ninth generation one.

4.5.1 How does it work

The production of the briquettes takes place through a process that the organization of our study defines as 'Fuego del Sol's Ecological Cycle' [Figure 9]. This process is in line with most circular economy principles as we will argue, however circular economy (CE) is not mentioned directly in any of the documents of FdS that we analyzed. The reason of this can be found in the fact that when FdS developed its ecological cycle, the concept of circular economy was still in its infancy and the scientific literature about this subject was still somehow scarce.

During our interview, we asked to Adair if he was aware of the circular economy concept and of the popularity he is going through in this historical period, especially in the industrialized countries, while a small but promising light is turning on, also with

regard to the developing countries¹⁰. Adair knew very well the principles of the circular economy and those, very similar of the so-called ‘Cradle to Cradle’¹¹ approach. However, having developed the briquettes production process at the beginning of 2010, when circular economy was not yet popular as today, we can affirm that the missing of some of the specific words of the circular economy method in the FdS documents is a purely verbal issue while the principles of circular economy are well present, although FdS arrived to them, in many cases, on its own, without going through the specific literature that is growing exponentially only in the last few years.



Figure 9: Fuego del Sol's Ecological Cycle (El Fuego del Sol, n.d.)

¹⁰ Although, for countries like Haiti, the ones that are at the bottom of the human developing index, the opportunities and possible benefits of this method are still to be discovered despite the fact that the premises are more than positive. This dissertation aims to start a discourse that tie developmental aid to circular economy and social work.

¹¹ ‘Cradle to Cradle’ is an approach to the design and planning of systems of production that consists in the adaptation to the nature of the models of the industry. According to the ‘Cradle to Cradle’ approach, industrial cycles must preserve and enhance the ecosystems in which they develops and become, like the latter, regenerative by themselves. This approach differs from the current production method, which is defined as ‘Cradle to Grave’. These ideas have been developed by McDonough and Braungart in 2003 to which we refer.

The production of the FdS briquettes is a classic example of upcycling whose definition is: “the creation or modification of any product from used materials, components and products which is of equal or higher quality or value than the compositional elements” (Sung, 2019, p. 371). The briquettes are produced from recycled paper, cardboard and sawdust, that otherwise would finish their life in landfills, burned, dumped or abandoned. The transformation of these discarded materials into a new, more valuable one (as a substitute of charcoal is, in Haiti), is what make of this process an upcycle. Upcycling, here we open a parenthesis, is quite different from recycling. The latter, for example, is not a desired solution for the circular economy, as, usually, recycling is a process that transforms used materials in something less valuable, where the majority of the energy used for the production of the first goods is lost during their transformation process. An example of it are the incinerators, a recycling solution widely adopted in North America and Europe. Incinerators produce energy through the combustion of many complex materials as, for example, plastic. Since plastic is derived from petroleum, which is extracted with great efforts from the subsoil, and then transformed, burning it in an incinerator results in a substantial loss of energy, and above all, results in the destruction of a material which would be potentially able to stay in the cycle longer, through its transformation into something new, of equal or greater value. In support of this, for example, it was reported that “detailed analysis shows that incinerators waste more energy than they produce, primarily because what [they] incinerate needs to be replaced by new products” (Global Alliance for Incineration Alternatives - GAIA, 2018, p. 1).

One of the better known principle of CE, is the one that sees the materials kept in the cycle as long as possible. Now as we shall see, the materials used for the production of the FdS briquettes, otherwise destined to landfills, are instead transformed into compressed non-carbonized blocks to be used as a substitute of charcoal. A possible criticism of this process could come from the fact that, by this way, the raw materials of which the briquettes are composed, are not kept in the cycle for as long as possible, but at the end of each single cycle they disappear, transformed into fire to cook the daily food of many people in Port-au-Prince. However, such a criticism could also find an argument in the fact that the paper of which the briquettes are made could be transformed back into paper, and this would also help to save trees. The answer to this eventual critique is not obvious. But a realistic one must point out a factor, namely that the paper present in Haiti is not produced locally with local trees (we would only miss a paper mill in Haiti, to give the final blow to the last forests of this area of the Caribbean!) but it is totally imported.

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Being imported, and since, exception made for the FdS briquettes, alternative methods of upcycling of the discarded paper in Haiti does not exist, the options for its possible disposal are basically two. The first is to burn, bury or leave the paper in abandoned building lots as usually happens in Port-au-Prince and around. The second, instead, could be to collect large quantities of paper to be sent abroad for transformation and recycling as already happens, especially with more valuable materials such as aluminum and plastic. At this point a great quantity of this paper would anyway end up in an incinerator in the United States, China or somewhere else or it could be transformed and return to have an economic value equal or higher to the first. But this would happen abroad and, indeed, not in Haiti, where people would continue to use charcoal and wood to cook the 90% of their meals. While the first solution, the dumping/burning one, would see no gains for the locals, the second solution would see only an infinitesimal gain for Haiti, which would come from the sale at low prices of the used paper to some country with a good waste disposal facility.

The best solution for the treatment of the paper waste of the Haitian capital is thought to be the one offered by FdS. This has also been recognized and constitutes the reason why many international organizations which are located in Port-au-Prince, such as the United Nations and many international embassies rely on FdS for the disposal of their waste. The majority of these organizations are even available to pay a little extra (if compared to other disposal companies' low fares) for the disposal of their waste with FdS because, when entrusting it to El Fuego del Sol, they know where it will end up. Many other disposal companies in Port-au-Prince are not as reliable. For example, during our stay in Haiti we felt that no one really knows where the waste entrusted to a waste treatment company will end up, maybe dumped or burned, maybe in the ocean.

The first (and consequently also the last) step of the cycle is thought to be the collection of waste for the production of the briquettes. Briquettes are composed of paper and cardboard but not entirely and, after being shredded, these materials are mixed with sawdust that is collected mostly from furniture manufacturers, including coffin makers. The collection of waste, in many cases, also coincides with the delivery of the briquettes as the facilities from which these materials are collected, are also buyers, so as the truck of FdS can usually download and upload during the same trip, saving great quantities of gasoline and time. The same happens for the client schools. If from a side the schools are the principal buyers of briquettes for the cooking of the meals of the kids, from the other

are also providers of paper waste that is collected and separated from other waste, and then entrusted to FdS.

The second step begins when the truck get back at the FdS facility in Pétion-Ville, Port-au-Prince. Here all the materials collected are separated. While paper, cardboard and sawdust are used for the production of the briquettes, FdS collects also other materials, such as plastic. Plastic for the moment is compressed, shipped and sold out of the country but FdS is looking for alternative solutions that would allow upcycling in loco. One of the ideas is to transform plastic PET bottles into bags for the transportation of the briquettes, but that could also be sold and used for the stocking of rice or animal food. This could represent one of the next projects of FdS.

Third step sees paper, cardboard and sawdust to be pulverized and mixed with water in huge plastic containers. To do it, normal drills are used. These drills are fitted with large whips, similar to those of electric shakers, but much larger. Occasionally, to the mix is added agricultural waste, when available.

The fourth step sees the liquid biomass slurry pressed on an ergonomic industrial manual press. The molds of the press will give to the FdS briquettes the characteristic square shape with the hole in the center. The briquettes are then dried, using a renewable energy that is very abundant and free in Haiti and all over the Antilles: the sun light. The briquettes dry on many shelves in the courtyard of the facility for a few days.

The fifth step start the following day, when the truck is filled with many bags of briquettes. As soon as the upload is completed the truck is ready to leave the facility for the morning delivering/collecting trip around the capital. As the briquettes are delivered, the truck is filled again with discarded materials, to be transformed, once again, into briquettes.

4.5.2 Improved cookstoves to save lives

The FdS non-carbonized briquettes, as we have seen, are produced with waste materials such as paper, cardboard and sawdust. Their production, furthermore, is accomplished partially with renewable energy resources, as it is the sun light that is utilized to dry them up. This makes of the briquettes the long-desired ecological alternative to charcoal and wood biomasses that Haiti needs. Furthermore it generates as we have seen, a long list of positive consequences in the country, being the first and most evident one the fact that the production and use of the FdS briquettes does not impact at all on the local already degraded environment. Trees are saved and waste is reprocessed, while some people, as *Circular Economy and Social Justice in Haiti Under the Prism of Social Work*

far as forty-two in 2018, can economically gain from this process, as they are employed by FdS. Other people, who relied on charcoal for cooking, can save money switching to the briquettes, while the switch will contribute to all the above mentioned improvements.

However, one more negative consequence of the use of charcoal for cooking is also addressed by El Fuego del Sol. It regards the impact that cooking with open fire has on human health, and here we will report the solution to this issue that has been elaborated by El Fuego del Sol.

Haitians, as many other people around the world¹², cook with open fires, both indoor and outdoor their houses. Cooking with charcoal and wood inside the house strongly contribute to creates indoor air pollution (IAP), a fact that is further exacerbates by the inefficient stoves that are utilized and by “the lack of ventilation that characterizes many of the kitchen in rural areas of developing countries” (Balmes, 2019, p. 1980). The smoke released by the combustion of wood, coal and charcoal “commonly contain up to 1000 micrograms for meter cube of particulate matter (PM) and much greater values have been reported” (Balmes, 2019, p. 1980). Other studies confirm and indicate that “the rate of particulate matter, [...] over twenty-four hours, is usually between 300 and 3000 micrograms per meter cube ($\mu\text{g}/\text{m}^3$) and can sometimes rise up to 10,000 $\mu\text{g}/\text{m}^3$ during the cooking activity” (Sana, Meda, Badoum, Kafando & Bouland, 2019, p. 2). Particulate matter, also defined as particle pollution, is described as follow:

a mixture of solids and liquid droplets floating in the air. Some particles are released directly from a specific source, while others form in complicated chemical reactions in the atmosphere. Particles come in a wide range of sizes. Particles less than or equal to 10 micrometers in diameter are so small that they can get into the lungs, potentially causing serious health problems. Ten micrometers is less than the width of a single human hair (AirNow, January 31, 2017).

The effects on human health to the exposition of particulate matter are deleterious, and, as reported by the Global Alliance for Clean Cookstoves (GACC, 2017, p. 27), indoor air pollution is the 4th highest risk factor of mortality in Haiti, and the 2nd highest risk for premature death, at over eight-thousands premature deaths in 2015. Worldwide, the air pollution that is emitted from the burning of solid wood fuels is estimated to be the responsible for 4.6% of the global burden of disease (Lim et al., 2012). Exposure to

¹² According to the most up-to-date estimates, the number of people who rely on biomasses for cooking worldwide is around 3 billion (Sana et al., 2019).

indoor air pollution leads “to acute lower respiratory infections, chronic obstructive pulmonary diseases, lung cancer, cataracts and other illnesses” (GACC, 2017, p. 29).

Women, on top, are the most affected by respiratory diseases as on average they usually spend more time cooking than males, while also the children are seriously affected, as they often stay in the kitchen with their mothers during the cooking process (GACC, 2017). Furthermore “awareness of the health impacts of current cooking practices appears to be limited in Haiti” (GACC, 2017, p. 30).

It has been reported that health issues are little considered in cookstoves and fuels projects in Haiti, being the most of them addressed to environment-related issues when dealing with charcoal and wood biomasses production and use (GACC, 2017; WFP, 2012). El Fuego del Sol, however, has dealt with this problem since the beginning. To create safe cooking conditions is a FdS priority as it is reported on the home page of the official website: “[we are] working to improve environmental, economic and health conditions in Haiti”. In our analysis of the FdS organization, we addressed already the environmental and economic improvements made possible by the briquettes project. Here, in order to have a complete picture of the social justice-related gains in Haiti, we will address the last of these desired changes, the one related to health.

To address health issues FdS has developed and introduced in Haiti an improved cookstove that now reached the 8th generation [Figure 10]. This cookstove has been designed to be more efficient in respect of the Haitian traditional methods of cooking but also to have limited harmful effects on human health. In particular, this is due to the fact that “the FdS stove incorporates a chimney” (Adair, 2018, p. 1) and “if a chimney is added to an indoor biomass stove, indoor air pollution drops to almost zero” (Partnership for Clean Indoor Air, 2012, p. 27; also in Adair, 2019, p. 1). FdS cookstoves are made out of steel sheets and, furthermore, are also designed to be easily produced and assembled/disassembled and repaired in loco.



Figure 10: FdS 8th generation cookstoves (Adair, 2018)

Tests to prove the superiority of the generation-eight FdS cookstove over the traditional Haitian ones have been accomplished by a FdS selected team of experts and the results, reworked in the form of a scientific article, have been submitted to peer-review and then accepted and

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published (Adair, 2018). For the tests both the Dylos 1700 PM_{2.5} and the Lascar EasyLog USB Co air-impurity monitors have been used and the measurements have been repeated at different distances from the stoves (ten meters, three meters and half a meters from the cooking pots) and in different households. Further data has also been collected in the kitchen of an orphanage, some month before the installation of three FdS cookstoves donated to it by a sponsor. The PM emissions data collected for kitchens where traditional cookstoves are used have been later compared with the PM emissions data collected in other kitchens, where FdS cookstoves are instead installed and utilized. The PM emissions that have been monitored in the Haitian households tested with the Dylos and the Lascar air-impurity monitors have been to 4 to 12.5 times the World Health Organization threshold (Adair, 2018). Particulate matter level was so high that, close to the pot, on the air-impurity monitors an alarming message was appearing: 'evacuate'. Please note that Haitian cooks are exposed to these levels of pollution every day, for many hours a day. The FdS stoves instead, thanks to the chimney and the better performance resulted from the gasifier combustion of the non-carbonized briquettes, have released zero (0) CO and PM emissions in the kitchen environment during the cooking process. This makes the FdS cookstoves, consequently, far superior not only when compared to the traditional three stones method of cooking widely adopted in Haiti, but also to the traditional cookstoves and the many other improved cookstoves that have been developed and promoted by other companies.

Of course, FdS cookstoves have a cost, and the reason why the majority of the Haitians still cook with open fires inside their houses, is because they cannot afford better or more expensive solutions. The first step, consequently, has been to provide FdS cookstoves to those institutions that buy briquettes for the cooking of the meals of the kids, in schools or orphanages, or to the enterprises that use briquettes for the cooking of the meals of their employees. The cost of the generation-eight FdS cookstove, initially sustained by the client institution, will then be amortized by the savings generated by the shift from the more expensive charcoal to the cheaper briquettes. In support of this, the World Food Program released a document in 2012, where the need to switch to the briquettes in Haiti has been deeply analyzed. In it has been estimated that "cooking with briquettes costs 35 percent less than cooking with charcoal" and furthermore that "cooking costs could be further reduced by increasing cooks skills and briquettes quality" (WFP, 2012, p. 30).

While the real challenge for the future is to bring a generation-eight improved cookstove in every Haitian household, for the moment the majority of them have been sold to institutions. Institutions usually need to cook meals for many people all together and the cooks who work in these facilities are usually exposed to PM pollution for many hours along the day. In this regard, indeed, it is reported that schools “represent a significant amount of charcoal and wood consumption due to the number of schools providing feeding programs for students” (GACC, 2017, p. 39). The schools and orphanages, (to this lasts, FdS cookstoves are generally donated by sponsors) and the factories that use the briquettes for the same purposes, have normally also adopted the FdS cookstove to be associated with the briquettes because, if from a side it is economically convenient, from the other its adoption also improve the safety of the staff along the others ecological benefits (WFP, 2012). El Fuego del Sol, in any case, to incentivize more families to adopt an improved cookstove, has recently released smaller and cheaper versions of the original one, which demand is growing. This is also confirmed by Adair (2018, p. 2) who states “FdS builds stoves which are customized to all sizes of Haitian cookpots”.

Finally, being the focus of this case study centered on the improvements to social justice that have been made possible by the project of the organization ‘El Fuego del Sol’ we believe that to improve health conditions for the cooks is essential to reach this goal. Health issues and social justice are related one to the other and, as a matter of fact, we can affirm that improving health conditions and provide safer working conditions at home as at the workplace, equals to improve social justice.

4.5.3 Numbers and production data

On the different media we analyze for the writing of this case study, numerical data were reported in regards of the FdS briquettes project. Here we refer to the most significant for the scope of this case study.

In the FdS-Haiti official website three data are indicated, which results from internal estimates. The first regards the number of trees saved. It is reported that, up to date, thirteen thousand (13.000) trees have been spared thanks to the operate of the organization.

The meals cooked with briquettes and FdS cookstoves are estimate in more than six hundred and fifty thousand (650.000) and this number is growing every day up. During summer however, FdS production of briquettes slow down for some month, due

to the fact that most of the schools that are served are close for the summer vacations. Briquettes production will therefore start again at full speed from the beginning of September.

The whole amount of reprocessed materials, recycled and upcycled directly by El Fuego del Sol has been estimated in one hundred and thirty (130) tons, including paper and cardboard waste, sawdust waste, plastic waste and aluminum waste.

During our stay in Port-au-Prince, observing the enterprise activities and interacting with the FdS staff, we notice that FdS was also collecting organic waste derived from the production of the local, Heineken™ owned, factory of beer. These wastes, which are donated by the factory to FdS, still conserve a certain degree of nutritional level. The staff of FdS, as we were on site, was looking for ideas on what to do with it, being the amount of this kind of waste growing exponentially due to the parallel growing of the ‘Prestige brewery’ under the new Heineken™ property. One idea that came out during the long discussions on the topic, was to mix this malt and barley waste with mineral salts to be then pressed in small cylinders to be used as animal food. This project, still in its pilot state today, could become one more circular business-driven activity for the future and, once the finished product would be tested and analyzed by experts, it could find its space in local markets as food for pigs. This waste was not count in the reported estimate, but maybe will be in the nearby future.

Data on the spread and adoption of FdS cookstoves/briquettes system in Haiti are not systematically registered by the enterprise and consequently are difficult to be traced back and reported. However, Adair refers that the World Food Program, when the Haitian briquettes project started in 2012, implemented around five-hundred stoves imported from India in more than seventy schools all over the country which were used in combination also with the FdS briquettes. The project lasted only three years, unfortunately, but FdS continue today to provide and sell briquettes to many of the schools that were initially included in the project (Adair, 2018). Moreover, in 2019 FdS got an important stove commission. The industrial park of Port-au-Prince bought as much as twenty-three cookstoves from FdS to be used by nine cooks to prepare the meals of more than two-hundred people per day. FdS, of course, will also regularly provide the briquettes to be used with their stoves.

Briquettes, as already reported, are made by FdS with the use of three manual presses. FdS employees, working three by three to each press, are able to produce twenty-five briquettes in around one minute or little more. Time for drying instead take long and

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constitute a delicate step in the production as, if not well dried, briquettes can generate white smoke during the burning. Usually briquettes must be left under the sun for a couple of days before to be stock in huge bags that contains one hundred briquettes each.

4.6 The ‘Carbon Roots International’ Organization: Similarities and Differences

The briquettes of El Fuego del Sol are non-carbonized. This means that during the production process they are not burned, nor subjected to high temperatures in order to reach carbonization. However other solutions exists and briquettes made of waste can also be carbonized, similarly to what happens for the production of regular charcoal. This process is called pyrolysis. One example in Haiti is that of the briquettes produced by the ‘Carbon Roots International’ (CRI) social enterprise. This enterprise is located in a rural region in the North of the country and was founded by Eric Sorensen, a US citizen. Today, it employs many Haitian nationals and contributes positively to social justice, creating job opportunities for the locals and competitive prices for charcoal, which allowed Haitians families to save money from cooking. It is active in Haiti since 2010 and following what it is indicate in its official website CRI constitutes today the largest charcoal company in Haiti.

The CRI charcoal briquettes [Figure 11] are made from agricultural waste, mostly *bagasse*, that is the fibrous waste left from sugar cane processing. For this reason these briquettes are called ‘green charcoal’ by the enterprise responsible for their production. The CRI process of production is the following:

CRI purchases agricultural waste from local farmers and small-scale processors, and transports it to a production factory in northern Haiti where the waste is carbonized into charcoal dust. This dust is then mixed with binding agents, pressed into briquettes using commercial machinery, and dried until hard and durable. Finally, the green charcoal is packaged and sold under the ‘*Chabon Boul*’ brand name at retail boutiques, wholesalers, and through a growing network of independent women retailers (CRI, n.d.).

Green charcoal, as it is reported in the CRI website is “the cheaper, cleaner and longer lasting alternative to wood charcoal”. Furthermore, it is also stated that one of the qualities of the green charcoal is that “doesn’t require a change in stove or cooking methods” (CRI, n.d.).

Here, we will argue that carbonized green charcoal is not the best solution for the substitution of wood charcoal in Haiti, despite the fact that the objectives set by the CRI enterprise, in line with those of the FdS enterprise, are very appreciable in the Haitian context.

The first problem of the carbonized briquettes is that not all the waste can be subjected to pyrolysis and so, part of available waste in Haiti would be discarded. As for example, paper and cardboard. The FdS non carbonized briquettes, instead, can be made out of everything: paper, cardboard, sawdust, bagasse, coconut shells, rice husks, corn husks and any other type of agricultural waste can be used and mixed for their production.



Figure 11: The Carbonized ‘green charcoal’ of CRI (CRI, 2019)

The second problem of the carbonized briquettes is due to the fact that carbonization is a very inefficient process. To make charcoal the majority of the energy and of the mass of the starting material is destroyed and, for example, traditional silks have a productivity range of 10-20% in converting wood to charcoal (ESMAP, 2007; Njenga et al., 2013). This means that, hypothetically, if ten trucks of wood arrive to a charcoal production site, only one or two will leave loaded with charcoal. Improved silks can reach better results, but would never be able to exceed 40-50% of the mass of the starting material. In result, more than half of the material is lost during the production of any kind of charcoal, both traditional and ‘green’.

Besides, is true that green charcoal briquettes can be used with traditional Haitian stoves as it happens with normal charcoal, as affirmed on the CRI website, while not carbonized briquettes must be burned in a proper cookstove to work properly. However this solution is proved today to be highly undesired due to the negative effects it generates on human health. Traditional cookstoves use, must not be seen anymore as a solution, in Haiti as everywhere else in the world. This is because, to cook with charcoal on a traditional stove generates high levels of particulate matter, that is a serious threat for human health, as we reported. Many death are related to this cultural behavior. Green charcoal can be then used as a substitute to charcoal on any stove available in Haiti, but this solution does not address at all the health aspects of the issue, while FdS briquettes, if

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keep the initial disadvantage of needing a particular cookstove to work with, they make the emissions released in the kitchen fall to zero.

One last aspect must be taken in consideration while analyzing the differences between carbonized and non-carbonized briquettes. It regards the fact that to produce carbonized briquettes is a complex process and furthermore, much more costly, as the necessary machinery to make the pyrolysis possible are highly expensive. Haitians would not be able to replicate the model with their own efforts. Non-carbonized briquettes, instead, are more easily manufactured. Machineries to produce non-carbonized briquettes are less expensive and include a drill and a manual press only. Furthermore, in the absence of a mechanical press, this process can also be performed by modeling the briquettes by hand, one by one (WFP, 2012). So little is necessary to produce non-carbonized briquettes and likely every Haitian would be able to produce briquettes for own consumption, or to set up a little briquettes production in the nearby future, if this model and the improved cookstoves become the practice, rather than the exception.

To conclude, and in light of what mentioned above, we reserve the right to affirm that the best solution, especially according to a long-term perspective, appear to be that of the non-carbonized briquettes. Benefits includes more efficiency, a wider range of waste to be used and ease of production. Carbonized briquettes can maybe keep more appeal for the Haitians as they are closer to the Haitian culture of charcoal cooking, but, they share with charcoal the same problems, and, long-term speaking, they does not appear to be the best solution to substitute wood charcoal in Haiti.

4.7 The Role of Circular Economy in Improving Lives and Social Justice in Haiti

To conclude, at this point and in light of what has been reported above, we think that our case study sustains a positive response to our initial question: can circular economy find application in Haiti and contribute to foster social justice in that country? Of course, we are aware that one case alone is not sufficient to answer to such a question with certitude. However, we believe that this case study constituted the starting point needed to break the ice on this topic, a mandatory step to open an important discussion on this subject. We expect that this research will be inspirational to other researchers that aim to further develop these positive results and to conduct similar investigations to expand our findings.

We hope, furthermore, that the example we have reported, that is our case study on the ‘El Fuego del Sol’ social-eco enterprise, at least made clear that this way of intend sustainability in developmental aid is very promising. The field of international development can gain a lot from the lesson of El Fuego del Sol. To be successful and to bring positive long-lasting changes in any of the Global South countries, an organization must consider new models of aid. To set up a good project, the implementers must stop to think what they can donate to the target populations and must start to think what they can produce, with the help, of the target population. The beneficiaries of a project must never be left anymore on a side in decision making activities, they must be heard at every step and be considered as active players of the process. Production is the key for the future of developmental aid and must therefore pass through waste upcycling, being waste, as we reported, a widely available resource in underdeveloped realities. Waste, as it is usually badly managed in the Global South, is also worth to be collected and reprocessed, as otherwise it will ends up in landfill, rivers, empty building blocks, burned or dumped with serious consequences for human health. Waste has also a negative impact on tourism, when is scattered everywhere and Haiti is an example of this. In a circular economy-designed project, waste become a valuable thing that is worth to be gathered, transformed and upcycled. This will contribute from a side to remove waste from the environment while from the other it will generate many more desired benefits, as for example the creation of job opportunities for the locals, that is the key for moving forward in those underdeveloped countries as Haiti. A circular economy project must be holistically designed to address many problems of a country at the same time, as in our case the dependence on charcoal for cooking in Haiti, but also the health of the cooks, the deforestation and the cutting of trees, the lack of clean, legal jobs and more. The possible benefits of a circular economy project can multiply exponentially and extend to other fields, to all gain of the target population. Finally, these benefits will also reflect, above all, on social justice, favoring better living conditions for all. To sum up, in the light of our findings and argumentations we can affirm that circular economy, if applied to developmental aid projects, under certain circumstances could contribute very positively to the social justice of the country/community to which the projects are addressed. This can happen in Haiti, and, by extension, in any other country that keep similar conditions. To confirm or to deny this statement, we invite researchers, and in particular social workers, to commit themselves in carrying out new studies in this field, and in the future, to provide more case studies to be compared with the one of this thesis.

Conclusion

This work has been written with the will to raise a problem and open a debate, even before wanting to generate answers. The problem concerns the lack of studies aimed at deepening the role of the circular economy in Haiti and in the other countries of the ‘least developed countries list’ of the United Nations. Although in the last few years the applicability and the role of this new method of thinking about production has been studied, debated and implemented more and more often in the industrialized countries or in those countries subjected to rapid industrialization, its application in the least developed countries of the world has not yet been taken into consideration, at least not by the academic world. Studies on circular economy, for the moment, concentrate their efforts to address the needs of the producing countries, but lack to address those of the countries that are at the bottom of the human development index list and that needs, in the author's opinion, to be somehow prioritized. What it is also argued in the text is that the current circular economy discourse is too often direct to environment, production, industries and goods at the expenses of the social dimension of it. This gap, furthermore, is not only present in literature, but in academic, media and political business attitude as well (Lourenço & Carvalho, 2013). What is missing is the human aspect of circular economy, being the humans, and not only the economy and the ecology, the final potential beneficiaries of this concept and one of the means through which the objectives of circular economy can be reached.

The first goal of this essay was therefore to highlight the lack of attention of circular economy scholars to the so called underdeveloped world. In it, more than one billion of people globally (Collier, 2009) struggle everyday to survive, while developmental aid, driven by non-governmental organizations and international agencies, in too many cases has failed to reach its goals. The social work discipline, we claimed in this paper, must include international competencies to its curriculum and pay more attention to these realities, not only in light of what is stated in ‘The Global Agenda for Social Work and Social Development’ but also because we believe that no one better than the social workers can contribute to fill the missing social dimension of the circular

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economy discourse and practice. To accomplish with the goals of the agenda in the underdeveloped nations, moreover, we proposed to consider the opportunity to shift from short term-NGO driven-gift aid, to long term-holistically designed-circular economy projects. These lasts, while are based on the principles of the circular economy and sustainable development, must also be inclusive of the local communities and must generate incomes from the products/services they produce/provide. We believe that this model can constitute a win-win solution which benefits could reflect on many aspects of the addressed society, being the last, but not for importance, the fostering of the social justice that this model makes possible. Social workers with international skills, moreover, in the years to come must find their place in the frontline of this grass-root process of change of the international development aid model.

In the last chapter, we provided a case study of a project that operates in Haiti and that was designed to respect the above mentioned requirements. When we started the analysis of the 'El Fuego del Sol' social-eco enterprise, we did not know where we would have ended, but now, after an all-round comprehensive analysis of this project, after a one month trip to Haiti spent visiting the facility of the organization and sharing time with its staff and workers and after many months reviewing documents and data about it, we can finally affirm that the project we described positively sustains our starting assumptions.

Furthermore, an open question has constitute the background of all our work of research: can a sustainable developmental project governed by the principles of the circular economy become an applicable and replicable tool designed to improve the environment, the economy and ultimately to increase social justice and empower people in a given underdeveloped context? While the premise were positive and the results we reached with this research are even more, to answer to this question we would need other and further studies and more case studies to be compared with our one. However, at this point, we believe that circular economy and sustainable development, really have the opportunity to become, in the near future, the path to be followed in the field of long-term developmental aid, the kind of aid that aim to empower people, save the environment and support the economy of a country in need. But, this would happen only if these ideas arise and if they will receive more consideration by the people involved in developmental activities, development anthropologists and social workers for first. We hope that this work has given its contributions in this direction.

To conclude, we will report the words of Ban Ki-Moon, Secretary-General of the United Nations from January 2007 to December 2016, who stated: "Sustainable Circular Economy and Social Justice in Haiti Under the Prism of Social Work

development is the pathway to the future we want for all. It offers a framework to generate economic growth, achieve social justice, exercise environmental stewardship and strengthen governance” (Ban Ki-Moon, n.d.). Circular economy can be the way to reach all these proposals.

Appendix

June 26, 2019

Interview with Kevin Adair, CEO of El Fuego del Sol – Haiti

Premise:

The purpose of this interview is to collect further data for the writing of a case study on the organization of El Fuego del Sol (FdS) of which you are the CEO. Please, while answering, try to be as much detailed as possible.

Our study is concerned with demonstrating that circular economy projects could eventually bring many benefits also to fragile countries such as Haiti. In particular, we are interested to understanding if projects like the briquettes one of FdS, among the other benefits, can concretely contribute to improve social justice in the community/country in which they are implemented.

You are free to not answer to any of the following questions. Please let me know when you do not want to answer to a specific question and we will switch to the following one. Your answers or extracts of your answers may will be included in a master degree thesis written for the University of Coimbra, Faculty of Psychology and Educational Sciences, Master degree in Social Work. If you do not agree with it, please let us know.

The interview is composed of 10 open-ended questions, no limit of time is imposed to your answers.

Thank you for your availability and for your collaboration.

Niccolò Ghione

Questions:

1- Can you tell us something about you, like your cultural background, higher studies degree, meaningful life experiences, etc.?

2- We know that FdS can be described as an Eco-Social enterprise. Can you introduce us to the FdS organization and let us know why it falls under this category?

3- When you designed the non-carbonized briquettes made of recycled paper and sawdust, have you been

inspired by some other similar project you knew? How did you get the idea? Please argue.

4- Why did you choose Haiti in general and Port-au-Prince in the specific, for your project?

5- We notice that the method you are implementing for the production of the briquettes is circular, can you tell us how and when you get inspired by circularity? Have you ever heard about Circular Economy?

6- One of the ultimate goals of El Fuego del Sol is to 'empower local people'. Can you tell us more about this aspect?

7- Can you spend some word in describing the staff of FdS? How many people work for FdS? To which sex, age, nationality and cultural background they belong?

8- Do you think that FdS is contributing to improving life quality and social justice in Haiti? How?

9- What is your vision over the future of Haiti, in relation to its charcoal dependency and how do you see the future of the organization you lead?

11- There is something that was not mentioned or that you would like to add?

Appendix 1: Questions addressed to Kevin Adair, CEO of El Fuego del Sol.



CEO

From Page 1

At Illinois Wesleyan University, he pursued two majors, experimental psychology and theater. He earned special departmental honors on the way to both bachelor's degrees.

Another influence was Buckminster Fuller, inventor of the geodesic dome, who epitomized the "less is more" movement. Fuller taught at neighboring Southern Illinois University and was gone before Adair went to school, but he left his mark on some of the Wesleyan faculty, Adair said.

"So I had the concept of what I wanted to do, but I was looking for the right location and project," he said.

Adair was working at a resort in the Dominican Republic in 2005 when the idea occurred to him to start up an enterprise using the best elements the Caribbean climate had to offer: labor, sunshine and scrap metal. With startup funds from the United Nations World Food Program and the International Organization for Migration, in 2007 he founded a company called El Fuego del Sol ("fire of the sun") and turned a 2-acre Dominican ranch into a corporate headquarters and factory, employing local people to make and sell solar-powered stoves — "sun ovens" — capable of generating 350 degrees Fahrenheit from the sun's rays.

Five years later, the World Food Program asked Adair to move the company to neighboring Haiti, which shares the same island with the Dominican Republic.

Haiti, the poorest country in the Western Hemisphere, had suffered a devastating magnitude 7.0 earthquake in 2010 that killed more than 300,000 people and left 1.6 million homeless. Haiti's official

jobless rate hovers around 14 percent, but the actual figure is elusive, with any job at any wage being considered employment.

With the move to Haiti, the company changed the design of its stoves. With more than a half-million tons of charcoal being burned every year by Haitians — charcoal made from millions of trees mostly smuggled in from the Dominican Republic — Adair saw a pressing need for change.

FdS Haiti began making briquettes out of a slurry of paper, cardboard and sawdust waste.

Eleven years later, FdS Haiti is one of the largest sustained recycling efforts on the island. The briquettes have been declared 30 percent more efficient than charcoal and unquestionably more eco-friendly.

As the first large-scale paper-products recycler in Haiti, FdS has recycled more than 130 tons of paper, cardboard and sawdust into briquettes, according to the company's website, www.fdshaiti.com. It also reprocesses waste motor oil into efficient diesel fuel and is on target to become Haiti's highest-volume reprocessed eco-fuel producer.

Adair said the best thing about his double life is that he can sustain both without doing damage to either, or to himself.

"They work quite comfortably together," he said. "They sustain themselves without my constant presence. I can come and go, and I greatly enjoy my involvement in both."

Adair says he abides by this leadership principle: "Listen. Lead. Listen again." That's probably good advice, whether you're running a company or commanding the farm show midway, juggling a set of bowling pins from the seat of a unicycle.

Annex 1: Newspaper article appeared in 'Butler Eagle' on July 31, 2018.

Useful Websites List

AFRICAN CIRCULAR ECONOMY NETWORK: <https://www.acen.africa/>

AIRNOW: <https://airnow.gov/>

CARBON ROOTS INTERNATIONAL: <http://carbonrootsinternational.com/>

CENTRE DE RECHERCHE ET DE FORMATION ÉCONOMIQUE ET SOCIALE POUR LE DÉVELOPPEMENT: <http://www.cresfed-haiti.org/>

EL FUEGO DEL SOL: <https://www.fdshaiti.com/>

ELLEN MACARTHUR FOUNDATION: <https://www.ellenmacarthurfoundation.org/>

GLOBAL ALLIANCE FOR CLEAN COOKSTOVES:
<https://www.cleancookingalliance.org/home/index.html>

GLOBAL ALLIANCE FOR INCINERATION ALTERNATIVES: <https://www.no-burn.org/>

INSTITUT HAÏTIEN DE STATISTIQUE ET D'INFORMATIQUE: <http://www.ihsi.ht/>

INTERNATIONAL ASSOCIATION OF SCHOOLS OF SOCIAL WORK: <https://www.iasw-aiets.org/>

INTERNATIONAL COUNCIL ON SOCIAL WELFARE: <https://www.icsw.org/>

INTERNATIONAL FEDERATION OF SOCIAL WORKERS: <https://www.ifsw.org/>

INTERNATIONAL ORGANIZATION FOR MIGRATION: <https://www.iom.int/>

UNITED NATIONS WORLD POPULATION PROSPECTS: <https://population.un.org/wpp/>

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT:
<https://www.usaid.gov/>

WORLD FOOD PROGRAMME: <https://it1.wfp.org/>

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