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Alternative Ways of Growth and Institutions: A focus on Brazil

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INTRODUCTION

The purpose of this work is to analyze economic growth and the possibility to turn into a green and sustainable direction. The studies on economics will converge on an analytics about institutions, since institutions represent the engine that orients economic strategies. Markets and independent actors nowadays more and more influence economic policies, however governments still remain the ones who push the button. Especially when we consider important countries with geopolitics fundamental role. It is more difficult for a country like the United States of America, or Russia, to start a path of renovation of its energetic strategies in a green direction rather than for a country such as Uruguay. The first ones indeed have very much to lose, and a risky investment for the future may not be seen as worthy if it could compromise the current delicate balance of power. Small countries like Uruguay on the other way could improve their position being avant-gardes but without having unfortunately the capacity to actually drive the others in their directions. Maybe they could inspire someone, but the process will develop slowly and in a confuse way.

So, no chance for a sustainable turn in economic growth policies in the close future? Here I will try to answer this question with a focus on the importance of institutions in a state for it to turn green. How fundamental is to have sane institutions to undertake a path of sustainable development? My path in understanding these kinds of processes will start with an analysis of the current model of economic growth. What is generally called business as usual is now called into question by the current economic crisis, in a similar way to how the traditional economic capitalist system was challenged at the end of the First World War. Communist revolutions and dictatorship spread around the world as a reaction to the collapsing system. Orthodox capitalism fell down, had to adapt, democracy was questioned in Europe and liberal United States utilized Keynesian strategies to exit their worst economic crisis in history. A new capitalism, more controlled, more social came out from the Second World War and imposed itself as the dominant model. It evolved, the economic boom allowed it to become more liberal again. Hayek concepts outraced Keynesian ones and in the 80's Regan and Thatcher policies promoted liberalizations and privatizations. At the beginning of the 90's, with the end of the cold war, neo-classic capitalism was not just the dominant model, but the only

model. The victory of capitalism, as Hernando De Soto (1999) simply suggests in his “The Mistery Of Capital”, may be explained in a very easy way. Capitalism has been the only known model that could make capital multiply. To many, capital corresponds to wealth. A particular paragraph will take care of such delicate relation. For now, it is possible to say that for many years an increase in capital (GDP) has meant an increase in wealth. Capitalist western states were rich, so the rest of the world started its way to capitalism to become rich. Apart from China and few other exceptions. As we know, spreading capitalism has not helped poor countries to become as rich as the rich ones. Rather, in many cases the gap increased. De Soto in his book explains why. In a very synthetic way, his answer is ‘the quality of some institutions’. Good institutions and the warrantee on property rights are the keys to make capital effectively worthy and then investible. Poor countries do not ensure, in part or at all, such warrantees. But capitalism has perfectly worked in the so-called western countries, until now. The international financial crisis in 2008 was the worst since the great depression in the United States. In Europe the crisis has started a little later and has not ended. Japan took a deflation and high debt path not so optimistic. The US has gone out of the crisis devaluating the dollar and making public debt, highly financed by the Chinese. The only non-capitalistic power which basically has not felt the crisis. This is not a critic to capitalism itself, life conditions in China and other communist countries are of way poorer quality than in capitalistic western countries. Capitalism has given a lot to the world and to western powers especially, but this short analysis is questioning the possibility for this kind of capitalism to still give a lot.

The first chapter of this work will be dedicated to the description of the current economic model and to the importance of growth for the fulfillment of the system. Then, there will be introduced three paradoxes calling into question the model: the Jevons paradox, the well being paradox and the paradox of growth. The last one leaves us in a standstill situation, claiming that growth is fundamental for our society, but at the same time it is physically unsustainable.

The second chapter will take care of listing two possible way outs from the paradox of growth. The first one will be the quite utopian concept of alternative to growth, based on the “vivir bien”, an old Andean philosophy recently introduced in the constitutions of Ecuador and Bolivia. The second concept is the one of alternative growth, based on sustainable development. In this part of the chapter sustainable

development will be first described theoretically and then pragmatically. Indeed, after the theory behind this possible model, four kinds of sustainable economics will be introduced: green economy, circular economy, sharing economy, knowledge economy. These four interconnected ways of pursuing sustainable development will be analyzed in all their features, showing how policy maker could be implementing them.

The third chapter will focus on the window of opportunity now on stage in Latin America, giving three reasons why the continent could be suitable for testing and adopting sustainable development as a mainstream model. Three characteristics will be provided, starting from the failure of capitalism, up to the seeking for international autonomy and relevance, and finally the astonishing quantity of natural resources available on South American soil.

Chapter four will be the case study. Among all the Latin countries I decided to analyze the most important one, Brazil. Being member of the BRICS and an ascending energetic power, Brazil could be what Uruguay cannot be: a country whose policies could have a spill over effect at top levels. I will study energetic green policies in Brazil and the project of sustainable cities, project started in the middle of the past decade with the city of Curitiba. Then, I will comment on the quality of Brazilian Institutions, focalizing three issues: Corruption, quality and access to education and legal protection of property rights.

In the final Chapter I will draw the conclusions, putting side-by-side sustainable policies and institutions and examine their relation. Do the formers depend on the latters? This is the core question of this dissertation and the answer could open new scenarios for the effective advancement of sustainable development.

CHAPTER I

1.1 The current model

Things are going well. Very well actually, if you take the perspective of most people leaving in the so called developed countries. It is usually well known that poverty is an issue around the world but the human being by its nature is keener on watching on his yard and his neighbors. No fault on this, just a common fact. Capitalism after the end of the cold war is the only viable option – with few exceptions, China overall – but it has not been as successful in the whole world as it has been in western powers. Later on in this work I will briefly report why, according to Peruvian economist Hernando De Soto, capitalism has not been so successful in many parts of globe, focusing on Latin America. For now, I am going through the current model, known as business as usual, exploring its features trying to counter the statement that opened the chapter. Things are not going that well. Business as usual will lead us to a paradox, the paradox of growth, that is the troubled sea we are sailing in. the aim of this work is to analyze possible exit options, both from a theoretical point of view, both into their correlations with institutions and governance.

Moving on to the core of this first paragraph, the main character of business as usual model is growth. First we will analyze the features of the current model and the scheme of growth, later on it will be the turn of some criticism to this model.

The current idea is that we need to grow. Tim Jackson (2006) perfectly explains, in few words, why: "Modern society is organized around a particular model of how to pursue human well- being. Baldly stated, this model contends that increasing economic output – growth in the gross domestic product (GDP) – leads to improved well-being: a higher standard of living and a better quality of life across society"[1].

The main reason we need to grow is related to well being. According to the current theory the more we earn better we are. This connection may seem elementary and difficult to contest. Indeed, anyone can say that with more purchasing power it is possible to acquire more goods to satisfy one's needs. In rough words, money does not mean necessary happiness but does buy things that make us happy. Business as usual is founded on the direct relations between income and well-being. The second and basic reason why GDP has to grow is social stability. If a country does not have

[1] Jackson T. (2006), *Beyond The 'Wellbeing Paradox':wellbeing, consumption growth and sustainability*, CES Working Paper 06/06, p.7

a positive growth it goes into a recession. Technically, two trimesters with negative growth means that a country is into a recession. Leaving in the period of one of the worst economic crisis in history, maybe the worst since the one of 1929, not just economists but any common person knows both in Europe and in the United States, what it means mean to live a recession. Banks do not elapse loans, entrepreneurs do not invest, companies shout down and workers lose their jobs and cannot purchase goods and repay debits and mortgages with banks. The circle becomes vicious. Trust in the economy and in the markets drops down and consumes drop down. If people do not consume industries are not required to produce and could close, making the circle more vicious and hard to exit from. In addition, how we will see in the following paragraph an important agent on the path of growth is innovation and technology. However, as Tim Jackson (2009) points out in another work:

"...neither can we see novelty as entirely neutral in the structural dynamic played out through capitalism. In fact, there is something even more deep-rooted at play here, conspiring to lock us firmly into the cycle of growth. The continual production of novelty would be of little value to firms if there were no market for the consumption of novelty in households"[2].

Jackson's words here helps us understand that also technological innovation - leaving aside its role as a pusher for growth for now - during an economic crisis could stop as soon as innovating is not economically worthy anymore. A stop in innovation means a stop in improving people's quality of life, than a reduction in well-being. Of course here we are talking about private research and development, however during a crisis also state-lead R&D usually reduces its efforts. States to counters the effect of the crisis on the real economy should pump money into the economy, increasing their public expenditure revising their budget to limit the rise of their public debt. First things to be cut are usually long term programs such as the one of research and development. Economic crisis are to be avoided and the only way, according to the current economic model, is keep growing.

It is not the purpose of this work to understand how a vicious recessive circle begins, neither whose responsibilities they are. The key point here is to highlight that according to our model, growth is necessary. And growth means also that we

[2] Jackson T. (2009), *Prosperity without Growth. Economics for a Finite Planet*, Earthscan, p.97

produce and consume more and more, being on a straight never ending line. If we drop from this line, we enter into the circle, not best case scenario for sure.

José "Pepe" Mujica, former president of Uruguay in a famous speech delivered at +20 Rio Summit in 2012 clearly points out the weaknesses of the current economic model stressing some issues that may appear trivial, but perfectly show the picture as it really is. It is not still the time to focus on the negative aspects of the model, but president Mujica in a part of his speech refers to consumption and the need we "must" have to consume. He affirms: "But if life is going to slip through my fingers, working and over-working in order to be able to consume more, and the consumer society is the engine; because ultimately, if consumption is paralyzed, the economy stops, and if you stop economy, the ghost of stagnation appears for each one of us, [...] Thus, a light bulb cannot last longer than 1000 hours. But there are light bulbs that last 100,000 hours! But these cannot be manufactured, because the problem is the market, because we have to work and we have to sustain a civilization of "use and discard", and so, we are trapped in a vicious cycle"[3].

Use and discard is an economic necessity, since if we produce less, people have less chance to work, and they do not have income, consuming less and so on and so forth, ending up entering into the vicious cycle.

Consumerism is not then just a bad cultural practice of our time as someone could argue. Tim Jackson (2009), for example, gives part of the responsibility to the consumer and in general the modern consumer, to whom novelties are appealing. In addition novelties and goods are part of the construction of the status of a person, more and more related to the income of the subjects. However, according to basic Sociology, the research of the status and the purchase of goods representing it have always been present in human history. Museums have plenty of necklaces, rings, jewels and crowns that noble and important people in the past used to wear to emphasize their status. Roman queens used to appear on the coins of determined year with a precise hair-style that used to influence fashion at that time. During the medieval age it was common to buy precious objects from the east, nobles wanted to build their residence to display their opulence. Municipalities raced to have the best and more beautiful cathedrals. Showing off and the research of a status are and have always been part human customs and usages. The issue here is another one. Now we have around 7 billion people all around the world that consume to satisfy

[3] Mujica J. (2012), speech at +20 Rio Summit

their needs, both primary needs and the ones to demonstrate the reached status. However, to make people work, the items we buy must have certain characteristics: they have not to last long, they must not be able to be repaired and they must go out of date pretty quickly. If a product does have these characteristics is a good product for the model, it ensures the straight never ending line to be followed. Many elderly people nowadays complain about the quality of the products they buy because at their times a fridge or a laundry machine used to last ten or more years. Nowadays they have to replace the stuff they buy at a rate they are not accustomed to. In addition if they try to have the object fixed up, usually the cost of fixing it is not convenient, paradoxically it might also be more than the purchasing price. Why? Because we have to produce. And we have to buy. The only things that now are getting fixed are precious items or antiques, things for collectors and experts, not daily life goods. In addition, with the appearance of informatics quite everywhere it is very easy to manufacture products that after a certain time automatically stop working. They simply stop serving, having being built just to operate for a specific amount of time. Many computers, for instance, may not be updated forever. Their operative systems, years going by, will not support any further upgrade making it impossible to use the programs the owner need. The owner then replaces the computer, even though the machine itself is still working.

Consumerism is not by itself a bad cultural practice. It is induced by an economic model based on growth, that necessitates consumption as the engine for the model to sustain itself. Consumers however, starting from the industrial need to use and discard, have been accustoming to this practice, behaving as a totally use and discard society, also when there is no need to dispose some items. It is more economical, it is easier and less laborious to buy and use disposable items and the markets know it. So the economic necessity of growth and consumption has started another vicious circle, the one of the degeneration of consumerism.

Still president Mujica in his bright words expresses his concern about this kind of degeneration: “Because we have created this civilization in which we live: the progeny of the market, of the competition, which has begotten prodigious and explosive material progress. But the market economy has created market societies. And it has given us this globalization, which means being aware of the whole planet”.

The market society now is a state of mind and it is not just an issue of western

countries, but of the whole world. Because if capitalism has not been successful in the rest of the world this does not mean that market society and consumerism is not present in the whole planet. The failure of capitalism was in the distribution of profits and most benefits. Multinationals and great capitals are mainly from western world or accumulated in few hands in developing countries, but that does not avoid the masses from consuming. Maybe it prevents the middle class from saving, investing and incrementing their capital but everybody in the whole globe is part of the market society, of the consuming society. In the next paragraph I will draw the scheme on how, from an economic point of view, the current market economy should work to follow the path on the never-ending line. After that, I will try to focus on all the obstacles and problems this model presents, concluding that business as usual is not anymore an option for our future. Indeed the current model leads straight into a paradox, which is the paradox of growth. The rest of the chapter will look for possible exit options and viable ways to avoid the paradox.

1.2 The scheme of Growth

Persistent growth in an economic model is the result of a direct relationship between capital (K-on the x axis) and labor (L on the y axis). The increase of one of the two elements, or both of them, results into the rise of the output, meaning that we have a positive growth.

So, in a hypothetic world where we are able to increase both factors of production, limitless growth would be ensured forever. The issue is that in the real world things do not and could not work in such way. That resources are limited is no news and also the economists who have drafted the model do know it. Labor, as a factor of production, does not entail the issue of limited resources, but the result is that also labor, if incremented in an infinite way, could not ensure a forever going growth. Now, I will first take into account the "problems" of factor of production L and its limited efficacy in the long run. Then, I will target factor K, explaining, according to the model, what should be capable of ensuring growth in the long term considering that both factors cannot be infinitely increased. To be perfectly correct, in fact, labor could be increased constantly since human population is constantly growing. Clearly, the increase of the rate of labor would lower and lower but still, until population is augmenting, labor should be able to be increased and the model should

work, even though slowly and with a rate of *quasi* zero. But labor is a tricky factor of production since it has diminishing marginal returns, meaning that the sum of every unit of labor after a certain threshold will give lower per unit results of output. This could be true also for capital, but the issue here is that labor could give negative marginal results. In few words, the result of the sum of n units of labor, after a determined threshold, would not just produce less, but would cause a loss in output. Meaning that the aggregate output would be more if less units of labor would be utilized.

A brief example shall clarify. Let's take the kitchen of a restaurant of average measure, comprehensive of four cooking stations. We start with one chef. To increase the restaurant's productivity we increase gradually the staff first with an assistant, then with a cleaner so that the chef can cook faster and more easily. But still, 3 stations are unutilized. So that the restaurant employs three more chefs, all of them sided with the two other kinds of employees. The productivity will increase; maybe we can join a director to improve the efficacy and the quality of our personnel. But what happens if the restaurant employs another chef? He could help, but without having a stove in his hands the output of his job will be less than the output resulted by the hiring of the forth chef and his staff. Now, let's take the hypothesis of filling the whole kitchen with employees. Good ones, bad ones, it does not matter. Imagine an entire room filled with people. Not only their contribution to restaurant's productivity will be zero, but also the new ones who have filled the kitchen would nullify completely the supply of the first four chef hired by the restaurant. This is true also on a wide scale; in a finite environment with finite resources it is not profitable to increase labor endlessly and perpetually. The earth, of course, even though quite bigger than a kitchen, is still a finite environment with finite resources.

Said that an unlimited increase of L would allow the system to keep going, let's move the attention on factor K, the capital. Capital, of course, may mean different things and it is a complex and broad concept. However, all sorts of capital, from real estate to savings to stock, *etcetera,* are generated from natural resources through more or less intermediaries. So, the K we refer to, is represented by the natural factor, the one that is undoubtedly finished. One could argue renewable resources are an option, but still, to exploit the sun or the waterpower we need to build power plants with other, limited, materials.

Therefore, given the assumption that capital, as natural resources, is limited, as well as labor, it cannot be increased in an unlimited way, and the system reaches a stalemate. How do we provide an infinite growth with limited factors of production? The answer economists have given to this question is: technology. Innovation should be able to allow us to keep growing maintaining constant the two factors of production. From now on, we will call technology as factor A.

In our system Research and Development become key factors in the pursuit of growth, so they are key factors for the stability of the social order. But, how much can we really rely on technology? Factor A is seriously a viable option that ensures business as usual a bright and long future?

In fact, things do not really work like that. The first issue we face when we talk about technology in an economic system is that is a factor really difficult to quantify. It is more an idea than a real factor like the other two. It has been working until now, so we believe it will keep working. However, R&D has not a delimited path, its results may be aleatory and the costs extremely high.

For the purpose of this dissertation, the R&D we care most in the energetic and industrial one. However, all kind of research is important to make us understand how difficult it is to keep pace with people's present and future needs. As far as this is concerned, it results particularly interesting a study by the health department of the British government about antibiotic resistant bacteria, which threatens life of many people in the UK and the world in general. Prime Minister David Cameron pointed out the risks in one of his declarations and instituted an ad hoc research team led by economist O'Neal to face the problem. According to UK press release, the Welcome Trust, a global charitable foundation that spends more than £700 million a year on advancing human and animal health, will finance the project. On the other hand, what stands out is the fact that an economist has been nominated to lead a health program. The words of Doctor Jeremy Farrar, director of the trust, help us clarify: "This is not just a scientific and medical challenge, but an economic and social one too. I am thus delighted that an economist of the stature of Jim O'Neill has agreed to investigate these issues, with an eye on the incentives, regulatory systems and behavioral changes that will be required to resolve them.

The Welcome Trust is proud to fund and host Jim O'Neill and his team as they conduct this vital work"[4].

Also medical research has economic implications, since preventing pandemics and other kinds of mass disasters is fundamental to maintain stability and growth. Epidemics would cause de-growth and negative growth would cause instability as shown before, entering into another kind of vicious circle, where usually many people lose their life other than their jobs.

Anyway, even though health is probably of major concern by most of the population, energetic and industrial research and development are also key for their life, although less apparent.

The economic concept, which should ensure growth in the next future, is called decoupling. In few words, decoupling means doing more with less. In technical terms, decoupling entails that for each unit of input, thanks to technology, the output resulting increases. The objective is to obtain more keeping the factors of production constant. Technology is the engine, which allows producing more and more, but how long this engine will run there is no certainty. In addition, the axiom saying that technology will make us save resources is not that taken for granted. Let's take the example of energy. We measure the amount of regular energy employed (green energy excluded) counting CO2 emissions. In analyzing these numbers it is important to make a distinction: relative decoupling and absolute decoupling. Relative decoupling means just producing more output per unit of input. This important achievement does not entail, however, that the global amount of emission is going down. If total emissions also lower, than we would be talking about absolute decoupling. Absolute decoupling is the real aim to make us save resources, relative decoupling is just an important industrial result, which makes production more efficient.

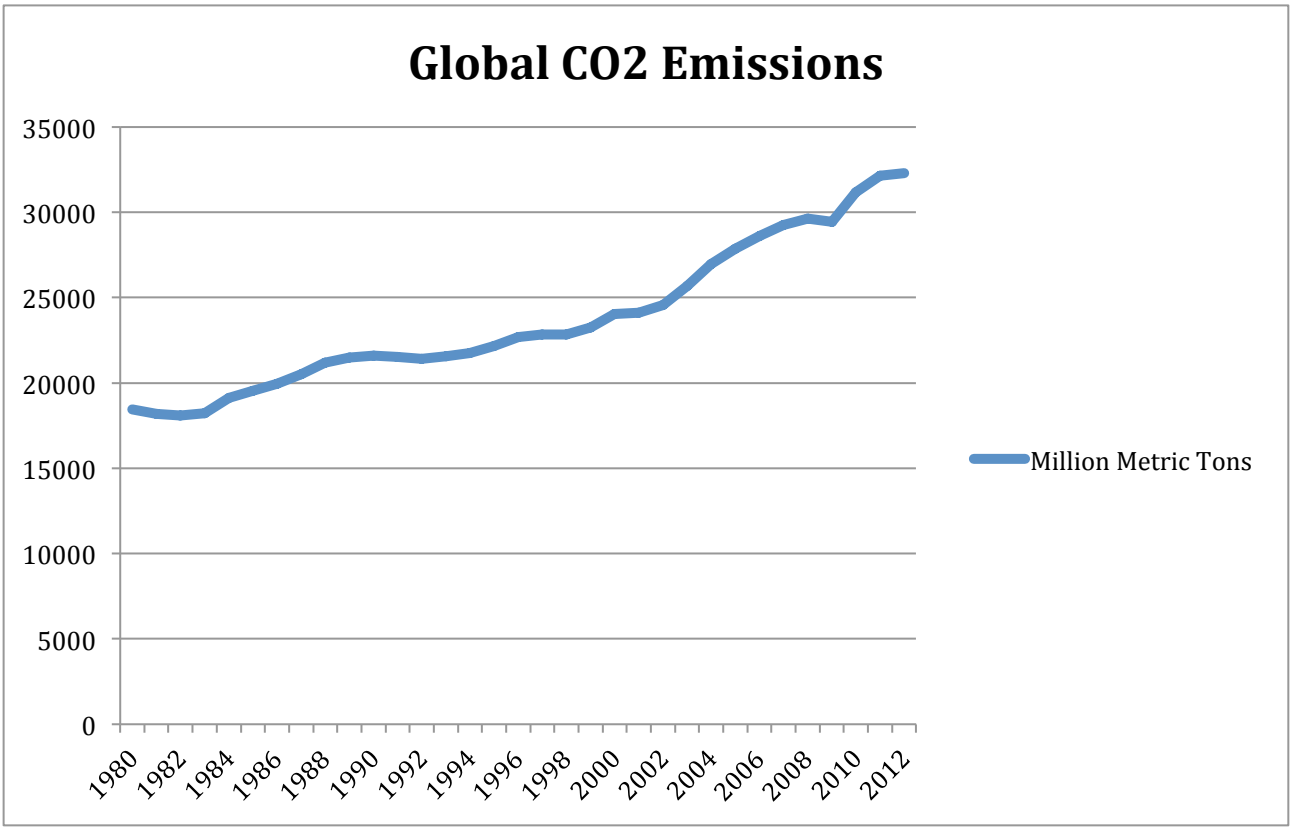
1.3 Jevons Paradox

The previous paragraph presented the theoretical functioning of the current economic model. Now we are going to list three main criticisms to the model, all interconnected to each other, but which start from different points. The first will be the so-called Jevons paradox, a criticism to the performance of decoupling and the

[4] https://www.gov.uk/government/news/prime-minister-warns-of-global-threat-of-antibiotic-resistance

solution technology is for the self fulfillment of the system. The second will be the well-being paradox, a criticism to the core concept of growth and the benefits it really provides. Finally, this will lead to the final paradox, which is the paradox of growth, showing a standstill between current market society necessities and the physical limits of the planet.

According to graph 1, in the last years total world emissions of CO2 have been increasing, with all the negative polluting and climatic negative aspects springing from it.



Graph 1. Data from http://www.eia.gov/

So technology is ensuring in the short run growth, but it is not helpful in saving resources, which are going to end in the future. How long is such future far? Do we really have to worry about it? Leaving moral philosophy apart for now, according to Tim Jackson (2009), if all countries were to consume at the same rate as the United States, many raw materials would finish in twenty years. Truth is that the world does not consume at this rate, but globalization and mass media today shows the rest of the world the opulence of western powers. People of the rest of the world would like to have better condition of life, like their European, Australian or Japanese peers. Starting to save resources is not only a lifejacket for our future with regard to nature, but also a way of preventing a war to grab scarce raw

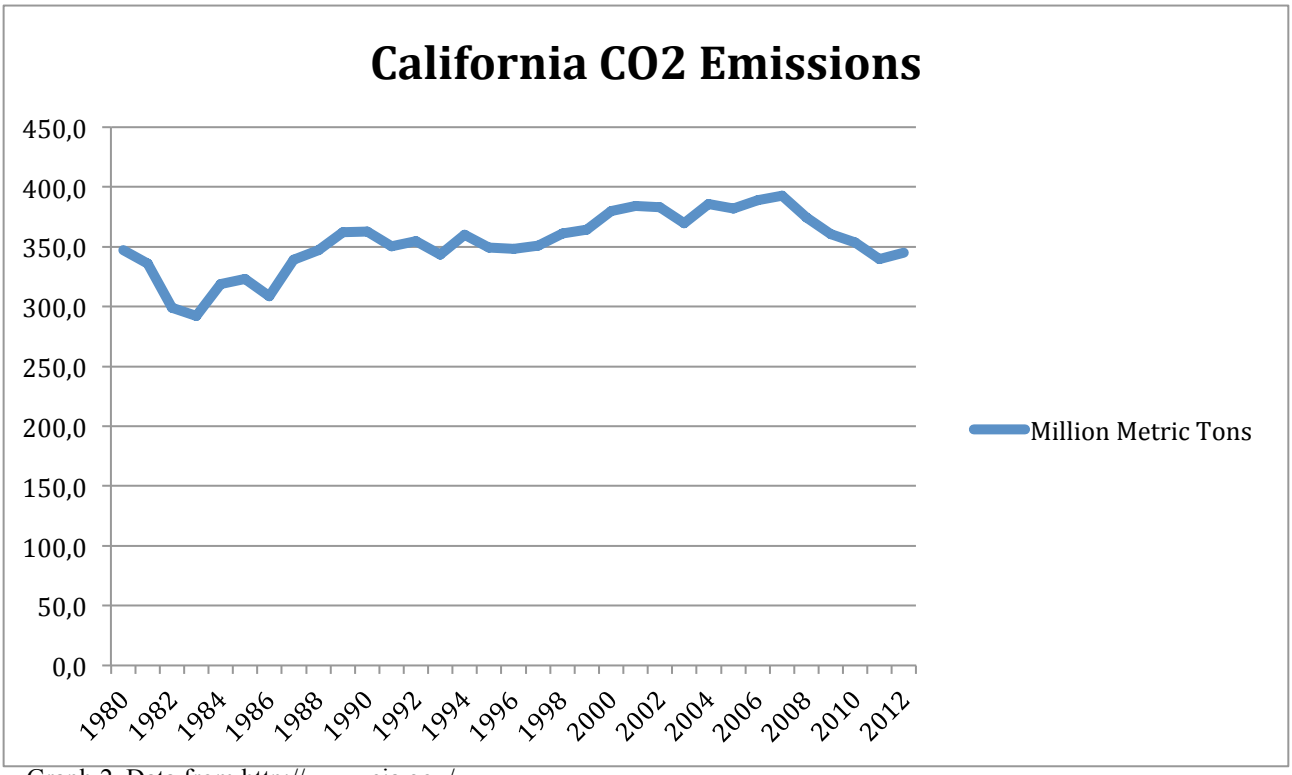
materials. According to Jackson, growth is still highly necessary for development countries, to let them achieve a good standard of quality of life. The author makes it a matter of equity, but it is also a matter of stability. With current exploitation of resources, developed countries need the other countries to stay down, in order to maintain their share of natural resources as a guaranty for their future growth. Despite the efforts of international organization, numbers and reality show that it is not really on the agenda of developed powers to allow the rest of the world to achieve their standard of living. According to Milanovic (2012), the poorest quintile of Italian or American population is richer than 60% of the rest of world population. More, the poorest Danish quintile is richer than 80% of the rest of the world population. Of course, the planet would not bear the effects of 7 billion people consuming like an average US citizen. Former Uruguay president Pepe Mujica, in the already quoted speech (2012), posed exactly this question to his colleagues. He asks: "what would happen to this planet if the people of India had the same number of cars per family as the Germans? How much oxygen would there be left for us to breathe? More clearly: Does the world today have the material elements to enable 7 or 8 billion people to enjoy the same level of consumption and squandering as the most affluent Western societies?[5]"

Mujica criticize the economic model, claiming for a different approach and encouraging his fellow heads of state to start a political international discourse to face the issue. Decoupling is not a viable option; it will not ensure growth for everybody. In a more and more multipolar world, developing countries are pushing to find their space, the will to catch up is increasing and developed powers will not be able to ask them to renounce improving their condition of life for the sake of nature. The ones who should carvel the model are the ones who more have benefitted from it; if they will not do it, the system would collapse sooner than expected. Let's see why decoupling is not the way to ensure saving in natural resources. The first indicator, as we have seen before in the chart, is the increasing amount of total CO2 emissions. The growth of emissions despite the improvement of technology, however, should not be a surprise. In 1865, a British economist called William Jevons wrote a book named "The coal question". He claimed that new industrial efficiency in British factories, which made coal more economical and effective, would not lower the consumption of the material; rather, the coal utilized

[5] Mujica J. (2012), op.cit

overall would have been increasing. He was right about his times, but resulted undervalued in current times. David Owen, in "The New Yorker", has dag up Jevons theories, explaining it and adapting to our age. He writes that Jevons: "offered the example of the British iron industry. If some technological advance made it possible for a blast furnace to produce iron with less coal, he wrote, then profits would rise, new investment in iron production would be attracted, and the price of iron would fall, thereby stimulating additional demand"[6]. This effect, the Jevons Paradox, is now called rebound. Owen, to show how rebound effects are present in our economies, makes several examples. One is about CO2 emissions and also Jackson in "Prosperity Without Growth" has pointed it out. Precisely, they talk about British efforts to reduce emissions to avoid Greenhouse effects, but despite a rise in efficacy overall emissions have continued to rise – as in the rest of the world. The second example Owen gives is about cooling technology in the United States. First refrigerators were not so big and consumed a lot of electricity. As soon as refrigerators had become cheaper and required less energy to work, people started buying new ones. Usually new fridges were bigger and technology ensured also freezing capacity. Frozen food had been introduced in the market and side-by-side to bigger fridges, freezers had found their spot. From the same technology originated air conditioning, which had become of massive use all around the world. The improvement of cooling technology made the original refrigerators more efficient, but had the rebound effect of all of a series of new products into the market. The result has been the one of a rise in consumption of energy and consequently a rise in emissions. It might be true that for some specific regions decoupling seems to be working. For example, California from 2001 until 2012 has been lowering its emissions (graph 2).

[6] Owen D. (2010), *The Efficiency Dilemma. If our machines use less energy, will we just use them more?* The New Yorker, Annals of Environmentalism



Graph 2. Data from http://www.eia.gov/

That would entail absolute decoupling. However, according to Owen, "One problem with decoupling, as the concept is often applied, is that it doesn't account for energy use and carbon emissions that have not been eliminated but merely exported out of the region under study"[7]. What the author means is that considering consumes, California has not lowered its emissions, simply people in California do not produce as much as they used to, and prefer to purchase goods coming from abroad. To be really considered absolute, decoupling should be weighted for consumes. In the first paragraph of this chapter we have already faced the issue of consumerism, and the objective difficulties to consume less. *Rebus sic stantibus,* decoupling not only does not represent a solution for the dilemma of growth, but also it does not even work as a stopgap. On the other hand, in the long run it may have the opposite effect, the rebound effect, making overall consumption of resources rise.

In the next paragraph growth will be taken from another side. Forgetting for a moment that current growth is ecologically unsustainable, what is the real correlation between growth and well-being? If we were to grow and grow, our quality of life in terms of happiness would be better off? After the Jevons paradox, another paradox will be on the stage: the well being paradox. These concepts, joined with corollary analysis will finally lead to the main and more complex paradox, the

[7] *Ivi*

paradox of growth, which is the main issue of this chapter and of our times in economic terms.

1.4 The well-being paradox

To a higher level of income corresponds a better quality of life. Such a simple and intuitive axiom could be very difficult to be called into question. At an individual level, it is pretty common that richer people are better off than poorer ones. As we have stated in previous paragraphs, status is important and it has always been, and money nowadays usually correspond to a high status. It is not true that money makes us happy but they help buying things that do improve our well-being. But what happens if we move from the microcosm of a small society, such as a town, to the macro scale of a country? Taking into account countries, income is replaced by GDP, the way to measure how rich nations are. So, according to the initial axiom, higher is the GDP, higher should be the well-being felt by people in a determined country. American economist Richard Easterlin has been one of the firsts questioning the idea that well-being swill inevitably increase as income grows. Easterlin (1996) conducted studies to better understand the relation between GDP and well-being. At first glance he realized that effectively people in rich countries generally appeared better off in terms of happiness than their peers in poor countries.

The methodology of his study is pretty interesting, since he wanted people not to make comparisons with others living in other parts of the world, rather he would like to obtain a declaration as much as possible close to objectivity. The subject interviewed had first to define, according to him, what meant to be happy. Later on, he was asked to determine his status, choosing between three possible options: very happy, fairly happy or not very happy.

According to various kind of surveys described by Easterlin in his work, it turns out that, across countries with different political and economic systems, the most important issue to people to be better off is represented by personal economic concern. Family and health generally follow. Probably the amount of the salary or the quality requested for a hospital would be different from country to country. What is enough to be happy for a French will probably be much more than what is enough to consider himself happy for a citizen of Costa Rica. However the concept at the base of their happiness are pretty much the same. What stated until now

might seem in agreement to the axiom; income appears to be fundamental for people well-being. However, Easterlin studies will show that, after a certain threshold, there is not direct relation between growth in GDP and growth in well-being. Indeed, going back to Costa Rica, it results that the level of well being declared by San José is the same of Washington. Americans have the same level of happiness as people from Costa Rica, Italians and Colombians. GDP differences among these nations are quite important, quality of life according to services and minimum salaries is far from being the same, and still Americans are not better off Costaricans. But, why? Should not correspond more well-being to a higher GDP? The answer is: not always.

In a trip I actually made to Costa Rica, I had the chance to experience lifestyle in that country and to have local people idea of quality of life there. Costa Rica is not just a Caribe Paradise where you drink cocktails by the beach. It is a three million inhabitants democracy, the first state to renounce to a permanent offensive army, a place were health is public and the minimum salary is around 400 American dollars. However, moving from the capital San José to the pacific cost, it came out that the highway has been slowly replaced first by small root of just one roadway. Later on, many of the roots connecting the small towns on the cost were also bare of asphalt. Moved by curiosity, I asked the driver, who was also our guide through the pacific cost, if an important kind of infrastructure such as roads was on the main agenda of the government. The president at that time (2012) was going well in public opinion thanks to her social and health programs. The Driver told me not to worry about roads out. Everybody there owned some kind of pick up or four wheel utility vehicles. So, it was not in people's mind to ask for asphalt on their roads. It was not a need. With a utilitarian approach, we can state that well-being is the result of the utility we gain from things or services that satisfy our needs. If no need is felt, there is no negative perception for people, reason why Costaricans with no asphalt have same level of satisfaction of Americans, who enjoy one of the best roadway systems in the world. Of course many factors are involved when a person has to define herself happy, but the perception of what is to give her benefits seems fundamental. Easterlin had realized it, and that is why he started to compare growth in GDP and growth of well-being. According to his studies, very poor countries resulted actually less happy than rich ones, but this was not true for rich countries and "middle countries" - meaning those countries with a lower GDP than

average OECD countries but which still could ensure to a good amount of its population to live above the poverty line. Inspired by this evidence, the economist came out from another kind of question: if in a developed country GDP grows, does well-being increase accordingly, as it should agreeing with traditional economic theories? He considered the example of Japan, in a time interval that goes from 1958 to 1986. In this period the expansion of Japanese economy was astonishing. In roughly thirty years it had been growing of five times, getting closer and closer to the American locomotive. If there was a direct relation between growth and well-being, since GDP in 1986 was five times the one of 1958, also well being should have been five times higher. Or at least, if the proportion was not to be 1:1, it should have grew anyway, although with different numbers. The result however was completely the opposite. The line representing well-being in Japan in the time of reference remained horizontal, showing an irrelevant variation. Japanese market offered a complete new range of goods and services, salaries had improved and the economy was running fast. However, a Japanese of 1986 did not consider himself better off than a Japanese of 1956. Bruno Cheli (2013), of the Università di Pisa, recalled the studies of Easterlin, showing that the Japanese case was not an exception. He considered the economic boom in China, period 1994-2005. *Per capita* GDP had grown of 250% in real times in the interval taken into account. In real terms, families owning a television went from 40% to 82% and the ones owning a phone from 10% to 62%. However, satisfaction of Chinese people not only did not grow but also it went down by a good 10%.

Easterlin affirmed, "Presumably, a positive relation will be observed in poorer countries as the population is freed from subsistence-level needs for food, clothing and shelter"[8]. Both Japan and China were above the threshold of subsistence-level needs and here it is explained why well-being has not increased parallel to GDP.

Easterlin and subsequently Cheli pointed out two reasons to explain why to a growth in GDP it does not correspond a growth in well-being in countries above the threshold described above.

The first one is the trap of growing expectation. Basically, above the threshold, what makes a person better off is not that its income increases in absolute terms, rather that it increases in relative terms, meaning in comparison with other

[8] Easterlin R. (1996), *The Growth Triumphant, The twenty first century in historical perspective*, the University of Michigan press, Ann Arbor, MI

people's income. If GDP grows and average *per capita* income grows, the positive effect of gaining more money is balanced by the negative effect that everybody else has the same rise. People do not realize, better, do not perceive that they are better off. Let's take, for instance, innovation in devices for telecommunications. Nowadays is normal to own a smartphone in developed countries, it is quite a need, since most of communication now happens through the Internet. In average, the utility that today offers a smartphone is more than the one provided by a regular cell phone. However, according to Easterlin theory, it could be said that the utility coming from a regular cellular, before the massive diffusion of smartphones, was exactly the same as the utility modern devices give today. Easterlin writes that "the explanation of this paradox is that individuals, when projecting the effect on their happiness of higher income, are basing their projection on their current aspiration level. In fact, as income rise, the aspiration level does too, and the effect of this increase in aspirations is to vitiate the expected growth in happiness due to higher income"[9]. So, if things overall go better around us, as well as our income, our expectations grows, and our needs change according to them. Growth and innovation could actually improve people's quality of life, but they have no real perception of it, above a certain threshold. The threshold is not so easy to set, but it is important to remember that goods give diminishing marginal utility. A piece of bred makes really happy a man who is starving, but it is of benefit from someone exiting from a McDonald's. The concept of diminishing marginal utility is useful just if he would like to set a threshold. In any case this is not the purpose of this dissertation. Important is just to state that growth does not generally have the effect of increasing well-being.

The other reason why this is true is the other point made out by Easterlin. Cheli, recalling to Easterlin work, says that another important element in describing why GDP is just an illusion of improvement of people's well-being is represented by the externalities economic growth produces. For instance, all the collateral effects in terms of illnesses, pollution, criminality, security, entails defensive and preventive expenditures, which tend to inflate GDP giving the impression to be better off, while a lot of the money involved in growth is to counterbalance the negative effects of growth on the society. The externalities of growth and the composition of GDP will be treated in the following paragraphs of this dissertation, since one of the first

[9] *Ivi*

steps in order to modify the current economic model is to substitute GDP as main indicator to measure countries' well-being. The importance of changing relevant parameters is basic to start reading reality in another way. Indeed, the last part of this chapter will be dedicated to the Fitoussi-Stiglitz report, commenting on how to replace GDP to better figure out the real quality of life in a nation. For the moment, we know that growth, after a certain threshold, does not increase people's well-being, neither leads the society to a level of full satisfaction. A society based on growth needs growth to sustain itself, without however gaining any benefits from it, rather externalities increase; on the other hand the circle of growth cannot be stopped for the sake of social stability. As far as the vicious circle is concerned, Easterlin concludes that "the growth process itself engenders ever growing needs that lead it ever onward"[10]. Well-being might be generally considered the benefits people gain from satisfying their needs. But if these needs augment and augment being more difficult to be satisfied, even if we have more, our well-being decreases, since we have the perception that something is missing, that we need more. The circle of growth not only is unsustainable from an ecological point of view, but also generates a perverse trend of ever-growing needs, which if will not be satisfied would lower happiness. Regarding the issue of ever-growing needs, president Mujica, in his already quoted speech, convey with other heads of states that in Uruguay he is obtaining the six hours working day, that in his opinion should allow more people to work, and ensure more leisure time to the ones who already have a job. However, facing reality, he has the serious concern that his compatriots will not work less, but much more; they would probably find a second job in order to earn more so that they could purchase a higher amount of staff. From cars to motorbikes and other things. But Mujica's concern is how his people are going to gain benefit from the items they buy, if they have not the time to use them. Not dollars, euros or pesos, but time, according to him, is the real international currency. When we purchase something, we are doing it considering the time we have worked to obtain it. The relation between working time and well-being is something economist still have not inserted in economic models, but it represent one of the main elements in remodeling the economic paradigm. Well-being cannot just be measured according to how much money one earns, or the gross value added of a country; benefits coming from a wide range of variables must be considered in

[10] *Ivi*

quantifying the level of quality of life and time is one of the most important variables. The dissertation on GDP will be further deepened, but first we will move to the core of this chapter: the definition of the paradox of growth.

1.5 The Paradox of Growth

We opened this chapter with the statement that, according to the current economic model, growth is necessary. It is necessary for the system keeping on going, for social stability, to avoid economic crisis and depressions. However, growth it is not necessary to increase people's well being, since the Easterlin paradox has shown that does not exist any direct relation if certain kinds of needs are already satisfied. The paradox goes over, distinguishing in the long run the hypothesis that growth, due to the externalities it provokes, could even push down people's well-being, like in the Chinese case pointed out by Cheli. The system, other than Easterlin opaque horizon, has also physical limits, since it entails a continuous increase of factor of production. Being the earth a limited environment, such a sustained increase is impossible in the long run. The economic model is resolved apparently by the introduction of technology and innovation as saviors and guarantors of the feasibility of the whole system. Unluckily, another paradox, the Jevons' one, also known as the rebound effect, counters this principle, showing that simple decoupling is not a viable option to ensure long life to the system.

Considering what stated until now, the road seems to be blocked. We have to grow but we cannot afford it.

In synthesis:

• "Growth is unsustainable – at least in its current form. Burgeoning resource consumption and rising environmental costs are compounding profound disparities in social well-being.

• De-growth is unstable – at least under present conditions. Declining consumer demand leads to rising unemployment, falling competitiveness and a spiral of recession"[11].

The aim of this dissertation is to study the possibilities we have to avoid the paradox and exit the loop. Such possibilities will put in relation with institutions, to identify which is public role in granting a sustainable future, not only in the long run, but also in the close future, in the time frame of one generation.

[11] Jackson T. (2009), op. cit. p.65

It is not so easy to find ways out to the current paradoxical situation. First, before looking at the various proposals than have been made until now, it is important to distinguish two main categories: alternative growth and alternatives to growth. The former refers to the first of the two vicious conditions previously listed, the one stating that growth is unsustainable. Hypothesis of alternative growth do not exclude growth at all, but remodel the ways of growing and the parameter utilized to measure growth. These theories have the aim to make growth sustainable, and are the ones at the center of the analysis in the next chapter. Sustainable growth is something realistic and already on stage, still it is not mainstream, and it does not yet have the capacity to influence the system enough to invert the course. The rest of this dissertation will take care to consider if and how sustainability could be an option, and which institutions do we need to make it a realistic option.
Alternatives to growth challenges the idea that de-growth must be unstable. Or, at least, that zero growth must be unstable. Many of this concepts, like happy de-growth, may appear utopian although of high appeal. It is not in the interest of this work to describe nor to hypothesize ideal worlds. That is the reason why I will concentrate on sustainability rather than to alternatives to growth. In any case, some of this models give some interesting causes for reflection, and could be helpful to better design sustainability. In the next chapter I will describe the possible exit options, ways out of the standstill presented by the paradox of growth. There will be a mention to alternative to growth, to then turn more realistic, describing the features of alternative growth.

1.6 Changing parameters

In the next chapter we will describe the features of sustainable economics and the kind of policies that should be adopted. This analysis will be related to the physical concerns about the degradation of the environment and the necessity to avoid a war for scarce resources. Still, to accompany the development of such kind of economy, first there is a need for changing the parameters of growth. Sustainable growth is an alternative way of growing. However, it must not be alternative just in the means of production, but also in the meaning the world growth has. Reframing the concept of growth provides the link to a new system in the future. The aim is to repeal the correspondence between growth and increase of GDP. As we have previously shown, such relation represents one of the main bugs of the system. This

does mean that GDP must be completely taken aside from the concept of growth; only, the concept of growth must be extended, enlarged, comprehending a wider range of variables.

If the object of our measuring is wrong, then the policies taken accordingly will be wrong as well. Starting from this simple principle, in 2008, Stiglitz, Sen and Fitoussi have been asked by French president Sarkozy to create a commission to identify new possible indexes to measure the real performance of the economy. In September 2009 the result was a report that strongly challenged the use of simple GDP to evaluate economic performance. The commission agrees on claiming that an increase in GDP does not necessarily correspond to an increase in well-being. For instance, traffic jam may cause a rise in GDP due to the consumption of more gasoline but it affects negatively citizen's well being. In addition, the market is distorted: for example, some activities and services households used to produce are now on sale on the market giving false impression of an increase of life standards. Simply, people now pay for something they used to receive for free; GDP shows they are better off because their spending increase, in reality they are not. In addition, quality is rarely taken into account and increasing output is related to quantity rising rather than quality. In many cases people are better off if the quality of food and services they purchase improves. GDP does not consider it. In parallel with the authors of the Hartwell paper, the commission has serious concerns about carbon emissions, since to taxation is imposed on them and the costs of such emissions are not accounted in national income accounts. A carbon tax was one proposal by the Hartwell authors for sustainability; the absence of it is considered a market distortion by the Stiglitz commission.

In synthesis, "it has long been clear that GDP is an inadequate metric to gauge well-being over time particularly in its economic, environmental, and social dimensions, some aspects of which are often referred to as sustainability"[12]. The two aspects of sustainability come out from the words of the report: the social one and the environmental one.

The commission conveys on choosing well-being as the correct parameter to measure economic performance and highlights the importance of sustainability as the only way to maintain well-being over time. Well-being comprehends both

[12] Stiglitz J. Sen A. Fitoussi JP. (2009), Report by the Commission on the Measurement of Economic Performance and Social Progress, p. 8

material resources, such as income for instance, and all non-economic aspects influencing peoples' life. In the specific, in creating a well-being index, it is fundamental to take into account five issues: looking at income rather than production, emphasizing household perspective, considering income and consumption jointly with wealth, giving more importance to the distribution of income and including non market activities. According to this last point, also leisure time must be included in the measurement. It may be complicated, but the relation between purchasing power and the hours worked to obtain it, might be a good indicator to give estimation. Inspired by these principles, the commission has drafted a definition of the concept of well-being, to better define the object of measurement. The definition considers simultaneously the following dimensions:

"i. Material living standards (income, consumption and wealth);

ii. Health;

iii. Education;

iv. Personal activities including work

v. Political voice and governance;

vi. Social connections and relationships;

vii. Environment (present and future conditions);

viii. Insecurity, of an economic as well as a physical nature"[13].

In this new indicator, GDP and income are not excluded; they become part of it, literally one eight of it. Elements influencing people's life like health, education and environment, are added to an objective numeric point, such as the material living standards. Surveys and statistics will be key to give a number to many of these points, being difficult to quantify personal activities and personal connections. Luckily information technology is extremely advanced and gathering information is not so complicated. It will require efforts and macroeconomics model will have to be updated in order to allow decision makers to elect the best policies to implement. Sustainability, also according to the commission, must be at the center of these policies if we want our well-being not to be dismissed.

The next chapter will give a sketch of what sustainability could be in practice, describing better-known green economy, and also studying other kinds of sustainable economics. Later on in this work, Latin America will be on the spotlight,

[13] *Ivi,* p.14

trying to understand why it might there the fertile land where sustainability can start flourishing.

CHAPTER II

2.1 "Vivir Bien"

The first part of this chapter will be on the most fascinating model among the alternatives to growth, the so called "vivir bien", an idea present in Ecuador and Bolivia, inspired by the old tradition of the *indigenas* – native americans. After the description of this innovating suggestion, we will move to sustainable development, which can be considered the current best option to solve the paradox of growth.

Verbatim "vivir bien" means "good living". The concept springs from the natives' idea of a divine nature, with the pachamama – mother hearth – as a sort of main goddess. The current crisis of the system and the rising space indigenas are finding in the political arena of their countries are the main causes of the renaissance of such ideas. According to Hector Alimonda (2012), such ideas have been quite for five centuries, but it is no coincidence their outbreak in current times, now that the whole paradigm of modernity is called into question. Of course the concept has evolved, and supporters of it are not naïve, they do not want to go back to pre-Columbian times, rather they want to integrate and model modernity according to some fundaments of their cultural heritage. The reason why "vivir bien" is relevant to our dissertation not only comes to its theoretical merits, but also because it was inserted in the constitutions of Ecuador and Bolivia. In 2008 Quito and in 2009 La Paz transformed an old natives' way of interpreting life, into a legal frame, giving to it a constitutional rank. From then on, institutions in these two countries have to comply with it.

But what is "vivir bien" (Sumak Kawsay in Ecuador, Suma Qamaña in Bolivia)?

Acosta (2009), a non-indigena scholar, defines Sumak Kawsay as something related with social, economic and environmental rights. According to Eduardo Gudynas (2011), "vivir bien" is a critic to the current economic model and a call to build owns quality of life based on the parity between nature and people. It is important not to confuse the Andean philosophy with certain forms of socialism. Still Gudynas and Acosta criticize the "materialistic" aspect of socialism, another way of development rather than an alternative to development. Socialism, according to the Uruguayan and Ecuadorian scholars, intend nature as a valuable good as well as capitalism does, idea completely in opposition to the conception of nature "vivir bien" entails.

In Ecuador, after the principle of Sumak Kawasay being introduced in the constitution in 2009, the government launched a development plan for the years 2009-2013, based on the idea of the good living. In the plan we can read the following:

"El concepto dominante de "desarrollo" ha entrado en una profunda crisis, no solamente
por la perspectiva colonialista desde donde se construyó, sino además por los resultados que ha
generado en el mundo. La presente crisis global de múltiples dimensiones demuestra la imposibilidad de mantener la ruta actual: extractivista y devastadora para el sur, con desiguales relaciones de poder y comercio entre norte y sur, y cuyos patrones de consumo ilimitado llevarán al
planeta entero al colapso al no poder asegurar su capacidad de regeneración. Es imprescindible,
entonces, impulsar nuevos modos de producir, consumir, organizar la vida y convivir"[14].

The plan highlights, after pointing out the crisis of the current development model, two main issues: first the asymmetries between the north and the south of the world, whose capitalist model is considered to be responsible; second, the necessity to pursue new ways to produce, consume and organize life, aiming at hindering present kind lifestyle.

The plan is a guideline for the administrations to comply with the principle set by the constitution, extracting the utopia from the "vivir bien" and proposing it as a founding element to inspire – and constrain – decision-makers. Before analyzing the points of this program, with the help of the studies by François Houtart (2011), I will sketch the main aspects concerning "vivir bien" conception of life.

"Vivir bien" has the proposal of:

- Re-establishing harmony with nature;
- Building another kind of economy;
- Organizing another form of state;
- Promoting interculturalism.

[14] República del Ecuador. Plan Nacional de Desarrollo.
Plan Nacional para el Buen Vivir 2009-2013: Construyendo un Estado Plurinacional e Intercultural

The first point entails a criticism to modern anthropocentrism, at the center of the unequal growth, which harms indissolubly the environment. The damages to nature are called externalities in the capitalist model and could be paid off by a reward in money. Sumak Kawasay opposes this view, since such externalities should not be priced; they are damages for nature and also to the people that should be avoided as much as possible. Nature must not be considered a commodity any more, since a legal person. A *sui generis* one, but still a legal person. Article 72 of Ecuadorian constitution assigns rights to nature, precisely a right to exist, maintain itself and regenerate itself, meaning that this idea is not a mere utopian claim. Mother hearth must not be protected just because of a sort of empathy it has with human beings, rather because it is also the source of life, *conditio sine qua non* for human existence.

The second point concerns the necessity to replace growth – and its champion GDP – with a more adequate economic model. Economic activity must be serving well-being, so it is view as a mean to reach happiness, not as the aim to pursue. In addition, "vivir bien" associates to the pursuit of well-being also the pursuit of just "being", meaning the spiritual and introspective ways to fully develop any human being. Harmony with nature is key in this research.

Third, nation state is an obstacle to the development of the concept. The aim is to achieve a polycentric state, but not necessary a weak state. The important thing is to go over the idea of nation as a closed environment, and the constitutions of Bolivia and Ecuador are a great example. Indeed the two countries promoted a plurinational state, giving symbolic and legal echo to all national minorities in their territories.

Finally, interculturalism means to join the ancestral ideals and beliefs with contemporary knowledge and thinking. A good balance is the way to design a consistent model for the next future.

According to this scheme, Sumak Kawasay posses the feature of an applicable guide to shape an alternative economic model without growth in its epicenter. However, it still lacks practical elements to make it executive. The strategy listed out in the plan will clarify how, in term of policies, "vivier bien" could be interpreted. On the other hand, before moving to its execution, it is interesting to scroll on possible critics on the theory of Sumak Kawasay. Indeed not everybody finds this concept appealing, and opposes it not accusing it of being too utopian, rather in its basic

concepts. Pablo Stefanoni (2012), professor at the university of Buenos Aires believes that “vivir bien” is not the magic formula its supporters claim it to be. Stefanoni does not disagree with the main points of the alternative to growth, but he thinks that, in countries were many people live below the poverty line, “vivir bien” is the last of our concerns. Of course most of the countries in Latin America do share this feature. He argues that where the state is not capable of ensuring the satisfaction of basic needs to the whole population, it is pretentious to speak about individual flourishing and good living. Food, shelter and education should be not only the main concern, but quite the only concern for administration in Latin America. Protection of nature and respect for *indigenas* tradition could be seen as populist slogans, a way to deflect public opinion from the real issues of the country. In addition, Stefanoni finds it impossible to conciliate technological goods and good living lifestyle. Andean peasants would like to use the Internet for instance, but they do not want IT goods to be produced. Or, at least, they do not want them to be produced in their countries. According to this, the author claims that good living is out from macroeconomic schemes, and it is just an archaic way of living, reserved to the niche represented by Andean communities.

The first critic made out by Stefanoni is more than legitimate. Satisfying basic needs must be the priority to any state. Also Tim Jackson (2009), in his already quoted work, claims that growth is still necessary for countries having a relevant amount of their population under the poverty line. The well-being paradox, as we have seen previously, is valid just above a certain threshold, and the way to reach that threshold is growth. However, getting people out from poverty should not be in contraposition to the design of an alternative model to utilize as soon as those people will be above the threshold. This lack of care would put current states that still need to grow in the position developed countries are now. Their society would face the crisis western states are facing now, and their experience would be useless. The two processes should follow a parallel path, in order to get people out from poverty and also ensure them a future based on well-being, after that their basic needs are satisfied. The second concern expressed by Stefanoni does appear as consistent as the first one. If the concept of good living has macroeconomic relevance is not an issue to attribute directly to the principle. The use governments will make of this principle will show how it can really influence macroeconomics. In addition, the Andean conception has not been put in the center of the debate just for

sympathy towards Andean peasants. Good living is not a concession to *indigenas* communities, rather a starting point to inspire administrations and people to change, respectively, policies and lifestyle. Now we are going to analyze the features of the development plan in Ecuador. This strategy entails 12 steps to promote good living in the country:

1) Democratization of the means of production, redistribution of wealth and diversification of the forms of property and its organization.
2) Transformation of the specialization economic model, through the import substitution model.
3) Increase real productivity and diversification of export, exporters and world destinations.
4) Strategic and autonomous inclusion in the world and Latin American integration.
5) Transformation of high education and transfer of knowledge through science, technology and innovation.
6) Connection and telecommunications for the information society.
7) Change of the energetic matrix.
8) Investing in good living in the stamp of a sustainable macroeconomic.
9) Inclusion, social protection based on solidarity and guarantee of rights under the umbrella of the constitutional state.
10) Sustainability, preservation, knowledge of natural heritage and promotion of tourism.
11) Development and organization of the territory and decentralization.
12) Citizenry power and social active participation.

The points listed in this plan are not a static footprint to copy by whoever wishes to promote a model based on good living. Rather, many of these points are the result of politic compromise and are still too linked to the current model. The transition clearly cannot be total and immediate. We need no revolutions, the objective is to experiment the new model based on the ancestral thoughts of pre-Columbian populations. What is of most concern, however, is point two, which proposes to install import substitution model. This kind of model had been used for various decades in Latin America on the edge of the seventies. It lead to economic and social deep crisis, and it does not seem a good alternative to modern capitalism. The system was replaced by neo-liberalism privatizations sponsored by the United

States during 90's Washington consensus. Just because something is anti-American it does not mean that it is good. Still, capitalism is the model that allowed part of the world population to achieve a high standard of life. It is its degeneration that now is in a pillory. Going back to the list, "vivir bien" is not fully accepted also in the countries that first have introduced the concept. Alimonda (2012) states that the incredible landmark represented by the constitutional reform in Ecuador is frequently challenged by the policies of president Correa administration. Arturo Escobar (2010) reports that president Correa has defined it environmental and *indigena* infantilism the attribution of rights to *pachamama* – mother earth, nature in practical terms. Escobar believes that the president is wrong and this dimension is key to understand the real challenge Sumac Kawasay launches to the common shared concept of development.

It is pretty unique that the president who signs a plan to promote good living openly describes it, as if it were an *indigena's* whim. He has not realized that this concept is not any more a natives' belief, rather it is turning into something studied by economists and scholar out from the *indigena's* world, but who have noticed something to turn an ancestral thought into a macroeconomic model, or at least to inspire a new model from it still on an international scale.

Indeed, in January 2009, under the presidency of Miguel D'Escoto, it was proposed the idea to write a declaration on the common good of the humanity. This broad concept has been frequently associated to the "vivir bien", and in a certain way it has been inspired by the Andean philosophy. Houtart (2012) writes about the concept of common good of the humanity, starting from the many reactions manifested in Europe against the wave of privation of certain kinds of goods and services. The social movements claiming the impossibility to privatize determined services are seen as in opposition to neo-liberalism as much as the Andean communities, which have inspired the constitutionalization of the rights for nature. Houtart defines common good of the humanity as the common "struggle consists of opposition to the wave of privatizations that are affecting many public utilities and networks, from railways, electricity, water, transport, telephones, woods, rivers and land to health and education"[15].

[15] Daiber B. Houtart F. (2012.) *A Postcapitalist Paradigm: The Common Good Of Humanity*, Rosa Luxemburg Foundation Brussels, p.12

The conception of the common good for humanity and the one of good living have of course their differences, although they are associated by the rejection of unlimited growth and the respect of nature (Belotti, 2013). This last point however is the core element and the actual origin of the Andean though, while the Western borne common good for humanity comes from a political-economic perspective. In fact, respect for nature is one of the four objectives a society has to achieve, according to the concept described by Houtart. The others are "the production of the material basis of life – physical, cultural and spirit- ual; 3) social and political collective organization; and 4) the interpretation of reality and the self-involvement of the actors in constructing it"[16]. Here it is clear the core element of polity, the involvement of the citizen as a person and as an active actor in the society; the realization of the human being through ancient Greeks' philosophy. Aristotle (eudaimonìa), as well as Epicurus and other thinkers believed that happiness was the aim to pursue. The shape of this happiness differed among the authors, but the objective was common. In addition, Aristotle believed that any human being needs society and needs "sharing" to fully flourish. Supporters of the common good for humanity do not sponsor a new hedonistic form of communism; rather, they oppose anarchic and uncontrolled capitalism. Both "vivr bien" and common good for humanity reject the conception of nature as a commodity and the exchange value assigned to it. The system imposes to produce what is marketable, and the result is that in many countries production of exporting goods has the priority on investments on food production for local consumption. In addition, due to globalization and comparative advantage countries have, many goods that could be produced *in loco* are imported from abroad. This kind of import has negative consequences in terms of environmental externalities, but also in terms of social externalities since not producing means not working. Houtart proposes to give more relevance to the "use value" over the "exchange value", focusing production of what we really need to limit the kinds of externalities described above. The author gives also practical suggestions, opting for a Tobin tax on financial flows and on a more innovative concept, a tax on "kilometers consumed by industrial and agricultural goods". This tax "would make it possible to reduce the ecological costs of transport and the abuse of comparative advantage".[17]

[16] *Ivi,* p.28
[17] *Ivi,* p.43

The intention to preserve the environment is clearly the engine that has managed to give “vivir bien” and common good for humanity a good resonance. If for the Andean communities nature is something sacred, quite divine, the source of life that must be protected, western thinkers have a more utilitarian view of it, they still see nature attending upon mankind; anyhow, if nature falls, mankind falls as well. The protection of “mother earth” is no more infantile environmentalism; it is matter of survival.

2.2 Sustainability

The ways alternative to growth described in the previous paragraph have a certain appeal, however it does not seem they could strikingly influence the system in the short run. Their use would find many opponents and the way these important concepts should be applied precise further studies. In addition, renouncing to growth all of a sudden could imply social instability if the land is not well prepared. Growth zero and “vivir bien” could be an option, but to develop a system based on those theories we need time. How much time do we have? This question hardly will find an answer. Better, one answer. Science, of course, may help, but opinions are contrasting, the object of research often is contrasting. Opening this work, an important data has been on the spotlight: if all the countries would consume as the United States, many resources would finish in twenty years and the system collapse as a consequence. However, the world consume at a lower average rate than the one of the United States. Probably oil, also thanks to new extracting technology, will last for another century, no certain data are really available. It depends on how much other countries will grow, how much increasing population will be consuming. If the problem of end of resources moves farther than one generation, moral philosophy could be replacing the intuitive assertion that nature and environment must be preserved. Leaving a better world to our children or nephews is something that intuitively any parent would do. However this choice could have no sense at all. The issue of future generation has been of concern for many philosophers. Briefly, the problem is that future generations are borne in their world, without the possibility to experience any other kind of possible world. It may seem brutal, but the impossibility of having comparison would not make worse off any of the future borne. Future generations will be grateful to the ones who have given them birth, unless only one circumstance comes true. This one

circumstance pivots around the condition that death is to prefer to a life in the world where future generations are borne. The human condition must be highly in decay to constrain a whole generation to the only option of suicide. The instinct of mankind is to survive also in not favorable conditions, so that this hypothesis is highly not probable. John Broome in his "climate matters" tries to philosophically overturn the paradox of future generations relevancy.

However, the need for sustainability now, for current generations, will be on the spotlight of this work. This dissertation starts from theoretical models, but has the aim to analyze pragmatic ways to find alternatives to the current economic model. That is the reason why it is fundamental to establish that we need the alternative as soon as possible. Exploitation could be an option, although its effects will be present already for people living on the earth at this moment. The Hartwell paper is an important academic document, resulted from a 2010 meeting organized by the London School of Economics, to understand current effects of industrialization and further emissions. The meeting was held after the beginning of the financial crisis and considering the failure of the Kyoto approach to reduce emissions in the last years. The crisis is seen as a window of opportunity to launch climate policies and the conclusive sentence of the executive summary results emblematic: "The Hartwell Paper follows the advice that a good crisis should not be wasted".[18] The paper proposes three goals to be achieved in the near future: energy access to everybody, a viable environment to live in, and insurance of adaption to climate risks. The issue at stake, according to the authors, is that green policies might be neither economically nor politically attractive. Fossil fuels are more efficient, global business rounds on them; politicians do not see green policies favorable for them since their positive effects are difficult to be experienced in one term. In other words, they are not helpful for re-election. So, the aim of the works is to present attractive ways to frame green policies, at least in the very short run. Of the three goals listed above, the second is the more relevant to our dissertation. The authors try to show that emissions are currently harming not only the environment but directly the people. Eradicating those emissions would make citizens better off in not considerably long time, probably no more than one political term. For instance, black carbon (soot) emissions are extremely harming, and "around 1.8 million

[18] Prins, G.et al. (2010), *The Hartwell Paper, A new direction for climate policy after the crash of 2009*, London School of Economics

people die every year from exposure to black carbon through indoor fires"[19]. Another kind of damage is the one provoked by tropospheric ozone, a gas formed by the reaction of other gasses present in industrial emissions. Tropospheric ozone is toxic to humans and plants and it is responsible of between $14-26 billion of crop damage every year. Finally, preservation of tropical forests is fundamental to maintain biodiversity but also to ensure a good quality of the air we breathe. The approach of the authors is to present co-benefits rapidly "experienceble" to sum to long term results, which are not politically attractive and therefore difficult to sponsor.

Moreover, other than physical immediate negative effects, the current model is responsible of social-kind externalities. One example is urbanization; quality of life in metropolis is lowering constantly, starting from air pollution, going to poor quality of services, adding traffic jam and the vanishing of human relations. Travelling two ours in over crowded trains, to get the minimum salary with a strenuous job in the city center without any chance to spend time with owns family, it is not so easy to quantify in terms of externality of the economic system. However these kinds of social situations are to be considered externalities since they consistently lower people's well-being. Than what happens if the hypothetic guy loses that difficult job he has, or he simply prefers to have things in an easier way? He moves to Brazilian *favelas*, to Argentinean *villas,* to the *banlieue* in France and so on and so forth, with the chance of becoming a threat for the rest of the society. Until it was just him to have poor quality life the society was not undermined by such situation. But, the externalities of poor quality life and urbanization often give rise to criminality, drugs traffic and an illegal frame representing the will of many people to have more but who are not in accordance to the traditional way to pursue capital accumulation. In Italy, and in Europe in general, there is the issue of immigration from the north shores of Africa. Nobody wishes to leave his mother-land if not obliged to. Poverty, degradation and lack of hope are the engine of many of the social problems we face nowadays. Many of them are the consequence of the degeneration of a system that is now in crisis; it is interesting that now that the crisis is hindering also higher levels of the society, the so-called middle class, the system has began to be challenged. Now that the core of the society is threatened other voices join the fain call coming from the margins. This paragraph had the

[19] *Ivi,* p.13

purpose to show that an alternative system is needed not only for a call on equity, rather to improve the condition of life of all the layers of the society, since the externalities of the accumulation system are provoking their damages at this moment already.

Sustainable growth is one way to buy time, to counterbalance the negative current effects of the system and to preserve resources enough to move to another, more stable system, in the future. Sustainability would represent the best transition model to get around the paradox of growth without suddenly turning upside-down the society. According to Popper, any revolution has negative final result. A shocked society leaves the window open to extremes to take power, or to anarchy to arise. The French revolution, for instance, lead to the error era and then to Bonapartism; the ideals of the revolution had to lay down, to be released only a century later. The communist revolution in Russia converted into Stalinism, one of the worst dictatorships in human history. Gradual, but consistent, reformation allows to turn over a system giving the actors time to get accustomed to the new one. Sustainability has this precise role, to get people used to another way of living, to have care of the environment both on industrial level and on daily life. Green policies must be politically attractive from one hand, but also socially requested. If they are demanded from the bottom, it is easier for politicians to implement them; at the same time, decision makers must be able to explain people the necessity of such measures, in order to install a virtuous "green" circle. Now we leave the theoretical field to slide to the more practical one of political economy: the concept of sustainability becomes tangible when we talk about its possible and realistic applications, which we define sustainable economics.

2.3 Sustainable economics

It is quite hard to define sustainable economics, being it a new concept not completely assessed. Some authors have focused on the normative foundations of sustainability, identifying its principles and overall guidelines. For instance, Stefan Baumgärtner and Martin Quaas (2009) listed four main points sustainable economics should be concerned of: long-term orientation, the idea of justice, the relationship with nature and the idea of non-wastefulness. This conception is extremely theoretical, especially the idea of justice, developed in three parallel steps: intergenerational justice, intra-generational justice and justice towards

nature. In this work I am just mentioning this ethical approach, which targets moral issues, having showed that sustainability is a necessity, not a matter of choice. Of course ethics and morality still remains fundamental to orient policy-making and such principles should be considered as guidelines. In this chapter, however, another kind of sustainability will be drafted, the pragmatic one; meaning all those practices already on stage, which should be promoted to empower sustainable development. The aim is to hint what it can be really done and what is politically and economically attractive to enforce sustainable development, taking off to the concept all of its abstraction and poetry. People, and policy makers, could see that sustainability is not "environmental infantilism", but job opportunities, insurance for the future and better quality of life already in the present. So, the first part of this chapter will take care of four kinds of sustainable economic practices, which already produce a sustainable output. Two of this economies, green and circular economy, entails a top down approach based on production, energy and investments. Green economy investments branches out into direct ones in natural capital, preserving and utilizing it in a sustainable way, and into energy and resources efficiency, addressing issues like urbanization, manufacturing and renewable energy. Circular economy targets industrial sustainability, opposing the linear system "take, make, dispose", opting for a re-utilization of materials on an industrial level, going over simple recycling. The third kind of economy we are going to talk about is the sharing economy. Differently from the previous ones, it sprang from the bottom, from the society itself, which has felt the need for limiting consumptions. The crisis has been for sure the main propeller, sharing goods and services is a response to the lowering purchasing power of households, but in these years the process turned conceptual, and many people have convinced themselves not to buy some kinds of goods even though they have the material possibility. An example is car sharing, but many others form of sharing can be found; the question arising from this analysis is that if institutions can (and should) help the spreading of such processes, or if it is better to leave the private sector operating freely. Knowledge economy is the last practice to be considered. It addresses the opportunity to create not only tangible, but also intangible values thanks to knowledge. Human capital is something to invest in in, other than physical output and natural resources.

2.4 Green Economy

The concept of green economy is key for the development of a sustainable economics. It has been one of the first to be drafted and still represents the main way to preserve nature and resources while keep growing. Green economy indeed does not leave aside the idea of growth, just it gives a path to grow with consistent and tangible savings in terms of environment. Differently from the ideas seen in the previous chapter, green economy does not have the intention to revolutionize the economic model, rather it gives a pathway to stay attached to that model but to ensure it longer life. Long story short, it is a tool to buy time. Alone it is not the solution for our dilemma, but still it is an interesting weapon to fight the battle, extremely useful to start – and sustain – the whole process of sustainability. Forgiving the word play, sustainability itself must be sustained in its process of development and implementation. It must be kept politically attractive, it must show short-term results, it must be kept on the spot with numbers effectively reporting results. Green economy might be the engine of sustainable economics, providing the energy needed to get to the next level. But, what in practice is green economy? The firsts to associate the word green to the broad concept of economy were the British. "The term green economy was first coined in a pioneering 1989 report for the Government of the United Kingdom by a group of leading environmental economists, entitled Blueprint for a Green Economy"[20]. It was the beginning of the debate on sustainable development and the term green economy had been associated to the concept of sustainable development itself. The idea was to use sustainability as a measurement of British economic performance. *Green economy* was just used as a title and it did not have yet the specific connotations it has now. The concept of green economy climbs the stairs of success during the famous conference of Rio 1992. The Rio conference, also known as the *earth summit,* has been the first international meeting among head of states from all over the world on environmental issues. Green economy became a way to identify certain kinds of policies; for example, the Rio declaration "included principles promoting the internalization of environmental costs and the use of economic instruments (Principle 16) as well as eliminating unsustainable consumption and

[20] Allen C. Clouth S. (2012), *A guidebook to the Green Economy*, Division for Sustainable Development, UNDESA

production",[21] as founding pillars of green policies. Here the issue of consumption is sided to green policies, highlighting the importance of reducing all kinds of consumption that are unsustainable. The issue, how we have previously seen, is that (environmental) unsustainable consumptions are the gasoline for the economic system to run. Reducing consumption all of a sudden would be (socially) unsustainable, with wide spread company closings and job loss. At that time the debate on sustainability was pretty general and the concepts and the problems were often mixed one with the other without any clear planning. Green economy had its revival during the crisis of 2008, due to the challenges the dominant economic model has been facing since then. Consumption of course is still an issue, one of the more relevant ones, but green policies have now to be considered more energy and production related. In 2010, the UN general assembly elected Green economy as one of the two specific themes for the Rio +20 conference, set up to update the global debate on environment and climate change at governmental level. Those kinds of conferences, like also the 2009 Copenhagen meeting highly criticized by the Hartwell paper, have never led to important international binding agreements. The balance of power is still of main concern by the nation states, which have difficulties to take serious international commitment. However, the real importance of these summits is to share and spread ideas, so that every state could take commitment independently, after that issues of high relevance are under the spotlights of great international audience. One of the main opponent to green policies is the common feeling that they are not so useful, that they are matter just of those green guys who only go by bike, recycle everything and fight for any piece of garden all around the world. Or that assault petrol stations in the North Sea, for instance. Seeing US president talking about sustainability, even though he will not take any immediate action in agreement to what he just says, helps making people aware of the importance such policies. An aware citizenry, with decent knowledge of the theme, takes away green policies from the cultural niche they used to be enclosed in. The second main theme in Rio +20 conference was the institutional frame that surrounds sustainable development. The relation with institutions will be discussed in the following chapter of this dissertation. Going back to green economy, after more than twenty years from its appearance on the scene, do we have a share and specific definition of what green economy is? The answer,

[21] *Ivi*

unfortunately, is *no.* 2012 Guideline on green economy proposes eight different definitions, which have appeared in recent publications. Moreover, the paper adds six more definitions of what green growth is. Here I will propose just three of them to try to find linkages and to deliver a complete concept to the reader. The first one was in 2009 given by UNEP – United Nations Environment Programme – the official voice of the UN: "A system of economic activities related to the production, distribution and consumption of goods and services that result in improved human well-being over the long term, while not exposing future generations to significant environmental risks or ecological scarcities". This definition is still pretty general, it is important because it connects environment, sectors of the economy and well-being. It also talks about future generations, involving moral issues. UNEP in few sentences resumes quite the whole world of sustainability, remaining on a mainly theoretical position. The revolution of this definition is the well-being aspect, as the objective to pursue through a green economy. The green economy coalition, an association of NGO's and other organizations – WWF among the others – states that Green economy is "a resilient economy that provides a better quality of life for all within the ecological limits of the planet". Here again, quality of life is the main goal and the reason why green economy must be promoted. If resiliency is commonly considered a good quality, in this case it deprives the concept of green economy of specificity; it appears that any kind of practice, which respects the planet and ensures better quality of lives, corresponds to green economy. The economic activities of 2009 UNEP definition are replaced by the 2011 green economy coalition "resilient economy". This lack of typicality does not help green policies to be implemented, since there are nothing such green policies described in the previous statements. Not even the international chamber of commerce, an economic institution, provides a detailed explication of what green economy is (2011). It "is described as an economy in which economic growth and environmental responsibility work together in a mutually reinforcing fashion while supporting progress on social development". Of course the environment is the main character, associated to the necessity to grow with the limits of supporting social development. The introduction of the social aspect is pretty interesting, remarking the connections between quality of life and green economy. All these definitions provide an idea of the objectives and the foundations of the subject, but they do not explain what features a green policy must have to be considered as such. The rest of

this chapter will be dedicated to deliver a draft of what can be called a green policy, which are the tangible objectives, limits and ways of application. The idea is to talk about the issue not from a moral and normative point of view, something usually easier and politically correct; but rather to dirty our hands digging in what really should and could be done from the perspective of a policy maker. Green policies require a wide range of investments and the public sector remains the main agent accountable for the implementation of green programs. Is the private sector to be considered completely out of the game? Of course not. The public sector could be acting through direct investment, but also designing the legal frame for private actions. Green policies can be both politically and economically attractive, presenting a margin for profit. Green economy is not an alternative to capitalism, competition and profit remains on stage. Differently from Bolivian and Ecuadorian "vivir bien", it just requires changing the rules of the game, not the game itself. The green market must be an expanding market thanks to the actions of the public sector, which has to draw the path to follow. Especially for industrial and energetic sectors, which need specific legislation. Depending on such legislation a whole new market could be created, a market supporting the need for growth the model has, but which limits the environmental degradation we are facing nowadays. A better quality of the environment clearly has social positive implication, making people better off and complying with the objectives set by the definition previously analyzed. Indeed, for green policies to be attractive GDP must not be the only indicator for success, rather well being must be taken into account. If a head of state can communicate to his citizens that well-being in their country has improved thanks to green policies, green policies would resemble the perfect sample of a politically attractive policy, creating a win-win situation between the politician and his people. The people will be better off and the politician will be re-elected. Other than social matters and well-being, another core concept has been related to green economy. Equity. A paper published by the Danish Group proposes a correlation, drafting the concept of equitable green economy. Green policies must be seen as the opportunity to level world wide spread inequalities, directing growth in the way of more equal distribution. Reducing of greenhouse emissions, preservation of resources, dealing with urbanization and unsustainable consumption patterns, are key factors to enable a large portion of the human population to improve their quality of life. Poorest levels of human population cannot cope with adaptation,

being devoid of the tools and capacities to face the externalities of climate change and of the system in general. Under the current conditions, lowest levels (which are the majority of world population) are not able to keep pace and inequalities dramatically increase. Average global growth is not accompanied by a catching up of the lowest classes neither on a national level nor on a global one. We keep growing and exploiting the planet but the ones who marginally need to grow more in reality grow less. Green economy is an option to turn upside down this sick trend, setting the pre-requisites to achieve full sustainable development. In this context green policies are seen as conditions to pursue sustainability, addressing green economy in a similar way to what has been done previously in this chapter. Green economy is a tool, a starting step for a further development of sustainability. The Danish Group paper proposes four kinds of green pre-requisites to achieve sustainable development. In a broad way, these four principles are overarching frames of green policies. They are: sustainable infrastructures, sustainable consumption and production, removal of barriers to trade and investment, green jobs and decent work. The first requisite goes over the necessity of building eco-friendly apartments. It is about urban planning, transportation and access to public infrastructures. It concerns the set of green standards for the creation of new buildings, public service to relieve congestion in traffic ensuring to anybody living in the peripheries of metropolis to reach their working place in a decent amount of time and in a sane environment. Production is the one which must be addressed by the setting of laws and standards by the public sector. Allocation of taxes on non eco-friendly products can stimulate a change on the production chain. Also eco-labeling and eco-standards are fundamental to hint resources exploitation, but also to open a new global market of eco-friendly items. Right now it is a niche market since a matter of culture drives it. It must become a matter of law. The cultural side is important to makes it easier for the new legislations to be accepted, but it could not be the only engine. Incentives for the production of eco-friendly products, standard and taxes on non-ecological production chains are all viable ways. Each administration has to find the ones that better fit to their community. The third concept, the removal of barriers to trade and investments, highlights the desire not to make a revolution of the economic model, just a slight important reform. The trades and barrier we are talking about are the ones concerning eco-friendly products, eco-friendly property rights, eco-friendly international investments, for

example for the development of local farms and km 0 food consumption. In addition, fossil fuels subsidies and fossil fuels consumption subsidies should be removed. According to the International Energy Agency's (IEA) study of 38 developing countries, "fossil fuel consumption subsidies amounted to USD 409 billion in 2010, with subsidies to oil products representing almost half of the total"[22]. The energetic issue deserves a parenthesis. Until oil, methane coal and other fossil fuels consumption will be stimulated by public funds, the path for sustainability will face an insuperable wall. A change in energy production and consumption must be of main concern for any government to really support sustainability. There is no green economy without green energy. It is not realistic to start opposing oil companies and oil consumption right now, but cutting subsidies will be a great start to the implementation of a green economy. A switch to green economy might provoke a sensible turn over in working availability, since many kinds of jobs will disappear but others will borne. Investment in education and re-training are vital for the society to cushion the transition. In addition it should be stimulated the creation of green jobs. According to the International Labor Organization (ILO), "Jobs are green when they help reduce negative environmental impact ultimately leading to environmentally, economically, and socially sustainable enterprises and economies. More precisely green jobs are decent jobs that: Reduce consumption of energy and raw materials; limit greenhouse gas emissions; minimize waste and pollution; and protect and restore ecosystems."[23] In addition to that, it must be given importance to small and medium enterprises, since it is "another cornerstone for achieving greater social equality, more high-quality jobs, better social and living standards"[24]. Good quality of working conditions and satisfying jobs are a spin for well-being increase, which still is the main objective to be reached. In addition, promoting 0 km production and consumption is healthy for the environment other than for the happiness of the people producing and consuming their goods in a circumscribed area, where quality could be maximized and the benefits go directly to the community. The public sector must be able to find a good balance between the positive side of competition

[22] OECD/IEA, "World Energy Outlook 2011," Paris: 2011. See: http://www.worldenergyoutlook.org/docs/weo2011/executive_summary.pdf
[23] http://www.ilo.org/empent/units/green-jobs-programme/lang--en/index.htm
[24] Rao T. et al. (2012), *Building An Equitable Green Economy*, Danish 92 Group – Forum for Sustainable Development

and globalization and the necessity described above to turn local. An example could be to stimulate all those businesses that produce goods and services related to history, tradition and peculiarities of a determined area. This kind of output must be preserved if it struggles due to multinationals and international market competition. It helps to create jobs in local areas and to increase well-being of the community, ensuring the flourishing of its peculiarities and specificities. Now we will see in the specific what could be the plan for a successful set of green policies, starting from an important document of the United Nations Environmental Programme. The department has launched in 2009 an interesting challenge to really implement green practices on wide scales. It was called Global Green New Deal. It clearly took inspiration from Roosevelt's response to the crisis of '29, consisting in a huge public intervention to stimulate the economic recovery. UNEP idea is to finance green activities through the public sector. Better, to direct public sector investments to green activities. It is a matter of priorities and allocation of resources, with the belief that an investment in green policies could give positive results both in strictly economic terms, both in terms of well-being. The plan presents three broad objectives, all of them functional to heal the current economic situation. The objectives are the following:

1) "Make a major contribution to reviving the world economy, saving and creating jobs, and protecting vulnerable groups;

2) Reduce carbon dependency and ecosystem degradation, putting economies on a path to clean and stable development;

3) Further sustainable and inclusive growth, achievement of the MDGs, and end extreme poverty by 2015"[25].

The first one is perfectly in line with the original new deal, actually it synthetizes perfectly Roosevelt's plan to lead the United States out of the crisis. US president was accused to be extremely socialist in utilizing public resources to create and save jobs, other than giving subsidies to the ones who were losing their jobs. It turned to be a viable solution not only to revive the economy, but also it worked as a social cushion, keeping people busy and ensuring a minimum purchasing power and independency to workers. The difference here is in the quality of work that should

[25] UNEP (2009) *A Global Green New Deal*

be created. According to the Danish Group paper, new jobs must be green and sustainable. Therefore public investment must be well planned to be directed to the creation of this certain kind of working opportunities, including training, formation and cultural stimulation for the people to be fully involved in this process. Convincing someone who has worked years in a determined position to suddenly switch his field could appear normal to new generations, but it is not given for granted at all by most of current working class; especially in countries like Italy or France, where contracts used to be open-handed. Nowadays, mobility and turnover is not the exception any more, but the governments must ensure to their senior working population the possibility to train and "recycle" themselves through guided programs. These kinds of public investments are part of the Global Green New Deal. The second objective is the proper environmental one, requiring lowering carbon emissions and controlling ecosystem degradation, mainly through a change of energetic policies. The energy sector is still highly State controlled or regulated, so that sharp legal guidelines should be issued to orient energy green production and distribution. Full independence from fossil fuels is far to be achieved, but a process of new forms of energetic production and, more important, consumption must be stimulated. According to this, industrial efficiency must be imposed, requiring utilizing the latest technologies not to squander resources, which have dramatic impacts on the environment. The last objective is probably the most ambitious one. UNEP believes that a global green new deal could help to drag up from poverty the huge masses still struggling for survival. In UNEP's idea, the global new deal is the perfect tool to accomplish the millennium development goals (MDG's). "The Millennium Project was commissioned by the United Nations Secretary-General in 2002 to develop a concrete action plan for the world to achieve the Millennium Development Goals and to reverse the grinding poverty, hunger and disease affecting billions of people"[26]. These goals are eight: eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, reduce child mortality, improve maternal health, combat HIV, malaria and other diseases, ensure environmental sustainability, global partnership for development. Here again green economy has the connotation of a simple tool to achieve not only environmental goals, but also many others, which are not directly related with the ecosystem. These sets of goals should have been

[26] http://www.un.org/millenniumgoals/bkgd.shtml

achieved by 2015, that is the time of this writing. It is possible to say that there has been no tangible success and the international situation has not positively changed. The real difference is represented by the economic crisis, which has been fundamental to bring back on stage the green debate. Currently, the feel for change and the necessity for action are aware in developing countries as well as in developed countries. The crisis has opened the window of opportunity, but realistically a short time-line horizon is difficult to suppose for the fully achievement of any of these goals. What should be of main concern is the kick off, starting to spin the wheel. After the motion has started, it will be easier to fix deadlines for the accomplishment of the various tasks.
The implementation elements of the global green new deal are also three, and could be considered the operational part of the plan. They are the following:

1) "Sectorally targeted fiscal stimulus to be carved out of the US$3.0 trillion stimulus packages now being proposed;
2) Domestic policy reforms to enable the success of green investments within domestic economies;
3) Reforms to international policy architecture and international coordination to enable and support national initiatives"[27].

The data UNEP is calling into question is the global amount of money aimed at re-inflating demand on international scale in 2009. This money should be utilized for the reasons described above, meaning green investments. Infrastructure functional to the creation of a sustainable economy and, consequently, the creation of green jobs must be the priority. As said before, there has been no substantial success until now, and the suggestions valid for 2009 are pitifully still valid for 2015. The international improvement in green practices has not been consistent; rather the externalities of the system are increasing, worsening people's quality of life. We remind the China example, where despite the economic boom, in the last decade the perceived quality of life has lowered. The supply of funds the public sector provides must be associated with important domestic policy initiatives. The money must not be thrown in the arena, investments and allocation should be wisely guided. "Introducing or improving environmental legislation, reducing or eliminating perverse subsidies, introducing fiscal measures to promote greater use of renewables versus fossil fuels, public transport versus private cars, etc., are some

[27] UNEP (2009) *A Global Green New Deal*

areas where it will reward governments to look to rapid evaluation and implementation of domestic policy reforms"[28]. In UNEP's opinion, a rearticulating of international political architecture should go along with domestic initiatives. In 2009 there was an attempt to finalize international agreements in Copenhagen. It has already been said that the efforts of the international community has been vane, and no binding treaty was signed. Ironically, the costs of holding the conference, both in economic and environmental terms, have largely exceed the benefits deriving from the meeting itself. The international community has proven to be ineffective, while some spotted results have been achieved on domestic levels. Fatherly, the example of hydro-energetic policies in Brazil will be reported. Domestic success cannot rely on international binding agreements; every nation state should develop its green program alone, with the opportunity to follow and to be inspired by the directives of the UN environmental department. As soon as green practices will become more and more common, it could borne the hypothesis of international harmonization of the process. Until now, a global common plan of investments, under the same rules, seems utopian. For instance, the Kyoto protocol, on co2 emissions reduction, did not have among its sponsors the United States. An agreement without one of the world's superpowers is not credible, however Europe, Japan and the other members have launched a spontaneous process. For now, international meetings have just a publicity/advertisement role, a way to move public opinion to a sensible position towards the issue. That does not mean they are completely useless, but it appears too optimistic to give them the role UNEP wanted to in the drafting of the plan. The global green new deal has set the objectives to pursue and the general operative fields where to move by. In 2011 however, it provided a final report on green economy, listing viable policies in many sectors of the economy to turn green. It proposed detailed pros and cons analysis on how to invest in natural capital and in energy and resource efficiency. Agriculture, Fisheries, Water and Forests were the natural macro-areas taken into account, while the energy section took care of Renewable energy Manufacturing, Waste, Buildings Transport, Tourism and Cities. This is not a guide for policy makers, so we will not go deep into the characteristics of any of these groups of green investments. However the guideline shows interesting examples and to-do lists representing virtuous green policy-kinds. It gives four domestic typical policy tools:

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promoting investment and spending in areas that stimulate a green economy, addressing environmental externalities and market failures, limiting government spending in areas that deplete natural capital, establishing sound regulatory. Here, I will report some examples per area, giving some practical idea of what a green policy could be. We have already discussed about investing in infrastructures, the republic of Korea actually launched a 36 billion dollars plan (3% of GDP) in green investments. "The low-carbon projects include developing railroads and mass transit, fuel efficient vehicles and clean fuels, energy conservation and environmentally friendly buildings. Additional projects aim to improve water management and ecological protection".[29]

Turning to the management of externalities, it is a flourishing period for the birth of new techniques to cope with such issues. One kind of policy that has been spreading around is the so-called feed-in tariff. It is a way government could use to regulate renewable energy market, making it compulsory for company to buy a determined amount of green energy at government-fixed price. This price must be attractive enough for the private sector to invest in the production of energy deriving from renewable resources. This kind of market regulation is necessary to stimulate green energy production and to balance out the initial competitive disadvantage with fossil fuels. Peak pricing represents another viable practice. It consists in fixing higher prices for electricity during the periods of maximum consumption. The idea is to make consumptions drop, or at least to homogenize them in order to avoid overloading in power plants. In addition, electricity cannot be stored, but it must be produced all day long, so that spreading consumption during the whole 24 hours would ensure to limit energetic waste. Peak pricing is quite common in many countries, but it is not its direct heir: congestion pricing. It is a fee on the use of private transportation in determined areas of a city at a certain time. It helps reducing traffic, pollution and stimulates the use of public transportation. An investment in efficient public service must join a fee of this kind. London and Singapore already apply congestion pricing with successful results. Imposing a tax on pollution is another important suggestion given by UNEP studies. The department advice is to maintain the same total revenues redirecting the gains of the new tax to cut charges on human labor. According to ILO (international Labor

[29] *UNEP (2011), Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication,* www.unep.org/greeneconomy

Organization), “imposing a price on carbon emissions and using the revenue to cut labor costs by lowering social security contributions would create 14.3 million net new jobs”.[30] According to UNEP report, government should cut environment harmful investments, meaning mainly subsidies on fossil fuels consumption. Promoting public transportation and railway connection instead of private four wheels helps justifying the cut of these subsidies. The revenues should be invested in other sector of the economy to improve people’s quality of life. One way is to apply a direct cash transfer, allocating money gained to poor households. Another possibility is investment funds and microfinance – in developing countries. An alternative is a public investment in basic services, such as health and education. Finally, regulation represents the macro area government should capitalize to frame their green policies. Standard settings are commonly utilized to orient production patterns. Another kind of regulation is the zoning regulation. Geographical regulation of the territory might help creating better life environment for citizens, and at the same time reduce pollution and preserve the environment. Fighting unregulated urbanization must be of main concern for any administration, especially in those countries where megalopolises have been springing up all around in completely chaotic patterns. A safe urban environment is the mirror of a successful green plan. The call for a spot in the cities had the effect of a consistent reduction in urban green areas, other than pollution and traffic congestions. Spontaneous suburbs uprising brought to the creation of shantytowns all over the world, which turned to be insane environments not only from an ecological point of view, but also from a social one. Giving people a good urban arrangement, in all neighbor-kinds, is the best spot to promote farther green policies among the population.

The big question at this point is: where do we found the money to finance green activities? Should the public act alone, or does the private sector take a substantial role?

Considering the current system, it is quite hard to hypothesize a private free sustenance for green policies. Financial markets and private investments are necessary to have the job done. Of course, for the private sector to be involved, a margin of profitability should be taken on stage. Few would give their contribution just for the sake of the planet. And for the system to be reformed, it is impossible to

[30] *Ivi,* p. 559

rely only on donations and generosity. The public sector has the duty to regulate, to make green activities as much attractive as possible, trying to direct private funds to invest in green economy. Renewable energy is the green sector that by far attracts spontaneously the largest amount of direct private investments. Energy sells, and renewable energy represents a growing market, even though still a small one. According to UNEP (2011), "A total of around US$ 557 billion of capital was deployed to the renewable energy market between 2007 and mid-2010".[31] However, institutional investors still represent 65% of total investment in the area for the period 2008-2009, making it clear how private entrepreneurship is not still fully involved. Better, it is not majoritarian involved, showing certain skepticism on the quality of the investment. On the other hand, it is also possible that there are severe barriers for companies to operate profitably in the sector. Waiting for governments to set favorable conditions for companies' full involvement, green policies still have to rely on banks, insurance and pension funds. The World Bank and the European investment bank have launched an interesting method to gather funds: green bonds. The market is quite small but the granters are AAA so that the quality of the bond is extremely high. The problem is that the two institutions do not provide a wide safe net, limiting the loans received from the private sector to lower the risk. Of course the money gathered by these bonds are used to promote green activities, but the institutions are not still very confident of the possible gains of such investments. This tool appears to be much more effective on local scale, especially at municipalities' levels. In the United States many municipalities have issued bonds under the Qualified Green Building and Sustainable Design Project Bond, with the aim to promote the use of the land and the construction of buildings in an eco-friendly way. The financiers of these projects are also households and small private capitals who want to invest in their community to improve the condition of the environment where they live. Of course with a lone, granted by the public sector. If the project is well managed, however, the public sector should expect returns from the investments made without making any public debt. Quality of the administrations appears to be fundamental in this process, mainly talking about local focalized activities. The third chapter of this dissertation will enlarge the debate on institutions, searching for the possible requisites the public administrations must, or must not, have to promote and implement green policies.

[31] *Ivi,* p. 595

In the UK it was announced the creation of a green investment bank in 2010, and the institution is now actually working with an initial 3.8 billion pounds capital. The bank finances small projects of 2 million pounds and big ones of more than 1 billion. There is a subdivision in five sectors, energy efficiency, waste and bioenergy, community-scale renewables, off shore winds and others. Examples of some of actions taken by the UK green bank are: the construction of a renewable electricity plant on the Thames, the "installation of energy efficient heating systems in sheltered housing complexes throughout England"[32], up to forty-five projects financed by the institution. The two reported are very different one from the other; one is about the production of green energy, a Waste wood plant to produce over 300 GWh of electricity annually, enough to power more than 70,000 homes. The other has the aim to reduce fossil fuels consumption, increasing energetic efficiency. Utilizing less fuel to run houses' heating it is not just favorable for the planet and the system, but also gives tangible benefits to households, which can make consistent savings on their bill. The two projects have different rationality behind and different amount of resources involved, however they represent the parallel path green policies should follow: macro policies, energetic and urban planning for instance, but also house by house small improvements, to stimulate private market growth and to demonstrate citizens the gains they can obtain from installing green devices. The macro policies, in addition, are important for the creation of new jobs, which is the other challenge of sustainable growth: reducing consumption and exploitation of resources without being crushed by a wave of unemployment. With regards to jobs creation, for instance, the waste wood power plant on the Thames will ensure 370 open positions during the construction and 50 permanent one to run the structure, providing energy to more than 70,000 homes.
Finally, the last two main ways to finance green activities are insurances and companies' reputation seeking. Starting from the latter, worldwide sensibility to the planet and to sustainability is increasing, so that enterprises want to deliver a positive image of them. It could be just marketing strategies or a way in some cases to pay less tax, anyway companies' desire to green themselves helps pursuing a sustainable economy. The fact that multinationals feel the need to show their possible clients that they care for the planet is an example of bottom up push for

[32] http://www.greeninvestmentbank.com/news-and-insight/2015/landmark-deal-to-improve-energy-efficiency-in-social-housing/

sustainability. People's conscience on the issue is increasing and they demand for determined practices. In other cases, along with marketing, there can always be a truth care for the environment due to managers, investors and CEO's awareness of the importance of sustainability. Also McDonald's has undertaken the path for a greener impact on the ecosystem. This is the message the multinational delivers on its website: "As a Company and brand with a large global footprint, we have a responsibility to take meaningful action as environmental stewards to address the impacts of the McDonald's System"[33]. It could be just marketing, but the company has actually started a policy of renovation of their restaurants, aiming at a 20% increase in energy efficiency and 50% overall recycling of their waste by 2020. Until now such companies greening process has been completely spontaneous, lead by the market and customers needs. But these customers are also citizens in their respective countries, and also government must be receptive towards these needs. Regulation is required, so that companies' greening would not be anarchic but follow an organized and compulsory path. Nowadays it should not be acceptable any more to construct new buildings, factories and infrastructure not in an eco-friendly way.

The last and more complex market is the one of insurances. "It is important to understand that insurance is not only a risk transfer mechanism to compensate financial losses, but also a risk management mechanism because insurers carry out loss prevention and loss mitigation measures in conducting their business"[34]. However, insuring against ESG (Environmental, social and governance) risks would entail a massive deployment of economic resources, so that individual insurers are clearly out of the game. It is being built a risk sharing system with macro actors involved. Some insurance companies are also issuing catastrophe bonds, but the current impact of such practice is still minimal and there is no evidence of consistent positive effects. Rather, a way insurance industry can act a main role in sustainable growth and the establishment of a green economy, is through linked investment per each insurance policy subscribed. For instance, in Brazil, HBSC, for any motor insurance, commits to preserve 88 squared meters of forest for five years, while 44 squared meters any home insurance subscribed, for

[33] https://www.aboutmcdonalds.com/mcd/sustainability/planet.html

[34] *UNEP (2011), Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication,* www.unep.org/greeneconomy

the same amount of time. The amount of forest to be preserved is calculated according to the footprint (impact on the environment) of a car and a household have during five years. The project is carried out along with NGO's, since the money is not directly handled by HBSC, but delivered to land owners, who have to comply with a forestry management plan. Interesting is that the funds are allocated to privates, rather than to public land. This strategy is important to support individuals to maintain green areas, where the public sector might be absent. At the same time, the fact that part of the money invested in insurance policies are devolved to preserving the environment is probably a good spot for the company, and an incentive to subscribe new policies for customers.

Gathering money from the private sector is hard, but there are good possibilities that non-public resources involved in green investment could increase. There have been shown several ways the private has – or can – be involved in, but still the amount of funds coming from private sources represent a minimal part of its real potential. In the current market system, private funds strikingly override public ones with relation to the world economy, meaning that administration should side regulation and incentive policies to attract private capital to direct investment. A public-private mechanism is necessary to overcome the lack of adequate public financing.

After having tackled the issue of fund raising, in the next paragraph we will move to a specific industrial-kind of sustainable economy, the circular economy.

2.5 Circular economy

The concept of circular economy is a typical sustainable economy related to the production cycle, mainly the production of finished goods and the resources used in the process.

Circular economy tackles two main points: products lifetime and waste re-introduction in the manufacturing process.

Circular economy challenges the linear system of production "raw materials, production, distribution, consumption, waste". This linearity must be stopped, trying to re-use the original resources, by transforming disposed output in new input.

The concept might be connected with the natural life cycles, where "Nothing is lost, nothing is created, everything is transformed", as the famous physician Antoine-

Laurent de Lavoisier stated in XVIII century. This is the postulate of the law of conservation of mass, according to which, the earth is a closed circular environment. So why should our economy be linear? The linearity of the production/consumption cycle is in antithesis with the natural course, presenting the issue of getting over with the resources with put into the mechanism; indeed these resources should be reproduced and re-inserted in the flow. Circular economy is the response to one issue of sustainability: a way not to run over of potential input, which would be a cataclysm for the whole system, stopping growth and presenting all of those problematic shown in the previous pages of this dissertation. First the vicious circle of recession, with unemployment and social problems, and in parallel the war for resources, something no one would wish for. Or at least, we hope that nobody wishes for a resources-war, even though human behavior has been unpredictable in its history, and some powers could be benefitting from conflicts. Not to get away from the aim of this work, here we propose the viable alternatives to the current economic system, leaving aside other possible external sets of problems of different nature, such as lobbying and arm industry.

Circular economy proposes a circular path in opposition to mainstream operational economic way "take-make-dispose", symbol of consumerism and of disposable items. The path proposed is the following: raw materials-design-production/remanufacturing-distribution-consumption (use, reuse, repair)-collection-recycling-back to production. From this process just a small amount of residual waste should be taken off and definitively disposed. Here we can find both the aims of circular economy previously introduced: enlarging products lifetime and recycle and reuse of resources in the production process. Starting from the former, recycling is not just households rubbish daily recycling, rather we have to move to an industrial level, where industrial waste must also be re-integrated in the process. Of course, households' finite products' recycling is an important part of the concept, especially because it is an indicator of how much awareness people have on the issue. A higher sensibility on the problem of saving resources is a key element to ensure success in the second objective of circular economy: long living goods. Many companies have as their strategy to product and distribute items that have to be replaced shortly after their purchase; or items that cannot be repaired, since the cost for this operation is higher than buying a new one. Circular economy opposes this business model, requiring the manufacturing of long lasting goods in

order to preserve resources. The behavior of the consumers might be an important element to restore the production of items that last long, even though it is not sufficient to convince companies to manufacture such items. Indeed, all people might agree that they prefer a laundry machine that last ten years instead of two, but who would have his laundry repaired after two years, if at the same price he can buy a new one? Probably quite anybody. That is the reason why the public sector has a determinant role in stimulating circular economy. According to a European Commission pamphlet, "Policy-makers' role is to provide the framework conditions, predictability and confidence to businesses, enhance the role of consumers, and set out how citizens can secure the benefits of the changes under way" [35] . Many companies would be required to completely renew their production/supply chains, so that the administration should not only regulate and oblige, but also create the favorable conditions for companies – SMEs in particular – to keep operating in the market. This study of the European commission affirms that eco-design and waste prevention and re-use can give benefits to businesses other than to the environment. The estimation is that these practices could weigh on 8% of companies annual turn over. In addition, a 30% increase in resources efficiency might create up to two million more jobs in the European Union. This data is particularly interesting, since it discredits a serious worry policy makers could have in promoting circular economy regulation, that is the possibility of reduction of production and jobs loss. Manufacturing items that last longer may mean manufacturing fewer items, with the complementary necessity to fire employees. EU commission study shows the opposite. Probably turn over would be required, new jobs could be different in quality, requiring specific training, but this has already been set as one of the main challenges for sustainability, and circular economy is not exempt from such burden.

In synthesis, the European Commission identifies six main challenges for the implementation of circular economy policies:

• Companies often lack awareness, knowledge or capacity to pursue circular economy solutions;

• Current systems, infrastructure, business models and technology can lock the economy in a linear model;

[35] EU Commission Report (2014), *The Circular Economy: Connecting, Creating And Conserving Value,* EU commission publications office

• Investment in measures to improve efficiency, or innovative business models, remains insufficient, as they are perceived as risky and complex;
• Demand for sustainable products and services may remain low, in particular if they involve behavioral change;
• Prices often do not reflect the real cost to society of resource and energy use;
• Policy signals for the transition to a circular economy are not sufficiently strong and consistent.

Now, are such issues generally valid, or are they circumscribed to the European Union environment?

Starting from the last one, involvement of governments is a necessary condition in any political environment, from Europe to Latin America. Administrations have to promote regulations in order to stimulate the growth of circular economy, giving the frame to orient market operators. The first four challenges are strictly related with the capitalist market, but in economic environments where classic capitalism has not given the same results as it did in western countries, companies and consumers might be more encouraged to attempt alternative ways of economy. Enterprises – SMEs in particular, given the involvement of the public sector, could benefit from a change in their system of production, gaining from waste efficiency practices. Customers also, in places like Latin America, where the average purchasing power is much lower than in developed countries, could be more oriented to require and buy long lasting items. In non western economies, still people have the culture of saving, reusing and repairing, similarly to current old generation in Europe. The point that would create difficulties in Latin countries is companies' availability of know-how. Circular economy requires high technological levels in the production-supply-recycle chain, but many factories in the South of the world still runs with out of these systems. The support of the government should be intensive, also in this aspect, concerning the purchase of patents and systems from abroad, other than investing in education. The aspect of education and know how will be consistently analyzed in the next paragraph, talking about knowledge economy. For the moment, it remains the necessity of governmental support, through incentives and improvement of local know-how, to the companies wishing to turn to circular economy. If the conditions are well settled, regulation should be the next step, with the aim of discouraging, or in some cases forbidding, business as usual models. Moving to the fifth point – saying that prices often do not reflect the

real cost to society of resource and energy use – it is extremely true from a European point of view, but not from a developing country's one. In fact, many of the externalities coming from the exploitation of the soil fall back on the populations of the countries producers of resources. People there are often under paid, resources are sold at a convenient price for foreign companies, which are the ones gaining benefits from the exploitation. Administrations in resources-exporter countries do not retain in public treasures a great amount of money, so that public services in such countries are of extremely low level. In the next chapter, the exploitation of Latin American resources will be presented as one of the features composing the window of opportunity for sustainability to be promoted in South America. So, by now, the damages on the society of energy and resources use will not be farther analyzed. Truth is, however, that people in Europe or in the United States enjoy life standards that let them not think on the costs of their benefits. Things they purchase, most of them produced abroad, have low prices because workers on the other side of the world do not share the same working conditions as their pairs do in industrialized countries.

People in Latin countries would be more likely to support a change in their economic habits in order to have a chance to improve their life conditions, feeling around them all the costs of being a resource exporter country, rather than a refiner one.

At an industrial level, countries that are producers of natural resources should be more concerned of innovating their production system according to circular economy principles. Indeed, the price of raw material is usual unsatisfying, and an efficient re-use of own waste could be an opportunity to increase productivity and profits. For instance, Brazil is a major producer of cellulose. Fibria, operating in the microregion of Três Lagoas (State of Mato Grosso do Sul), is the largest paper pulp producer in the world, through the cultivation of eucalyptus trees. Fibria, in partnership with Veolia – a group specialized in resources optimization – is an example of a company benefitting from circular economy. It has been "put in place a process to convert the waste generated from the industrial production process into a new product – soil acidity corrective – which will be used in Fibria's own eucalyptus cultivation. In other words, it is a short waste reuse cycle,

which is in line with circular economy principles and combines all the associated environmental, economic and technical benefits, not to mention job creation"[36]. These were the words of Pierre Casabonnet, Technical and Operations Director, Veolia Brazil, who also added that Fibria will not be able to absorb the whole quantity of the sludge it produces, being it possible that it will sell the product of its waste to other cellulose producer companies. The re-utilization of its waste allows Fibria not only to save in the purchase of sources of energy for the cellulose production process, but also to sell the excess waste derivatives to other enterprises, at a lower price than classic energy sources. Contemporarily, the environment enjoys consistent benefits in terms of ecosystem preservation. Paulo Gaia, General Manager of Fibria's Jacareí plant, claims that the economic return for its company has been extremely high. He states that they eliminated transport to landfill and stopped paying to incinerate their waste, thus decreasing their investment. In addition they have replaced the limestone with the sludge self-produced, reducing drastically their purchasing costs.

The role of the government should be of sponsoring these kinds of private success and giving incentives for the others wishing to follow the same path. Circular economy is not just for the environment, it is also for the fulfillment of companies' development.

2.6 Knowledge economy

Knowledge economy is a fairly new discipline, fully developed starting from the first decade of the new century, which conceives knowledge as an economic good; it implies to consider the effects of knowledge in the economic patterns, being relevant the effects of this new "good" on individual and collective well-being (Livraghi 2007). Knowledge economy entails several different components, all of them functional to the improvement of productivity. For instance, we are talking about learning capabilities and working flexibility, access to information, organization of production processes and technology in general. It is important, however, not to confuse Knowledge economy with simple technological development. Indeed, as we have seen in chapter one of this dissertation, the mere technological innovation is not a viable answer to the crisis of the current economic

[36] http://www.veolia.com/en/veolia-group/media/news/brazil-circular-economy-boost-cellulose-industries

model. “The concept of knowledge societies is more all-embracing and more conducive to empowerment then the concept of technology and connectivity, which often dominate debates on information society”[37]. These are the words of the UNESCO report on knowledge societies, meaning societies ran by a knowledge economic system. The report is a little ambivalent, being descriptive and normative at the same time. It has the purpose of stating the importance of knowledge in a society and its relevance in its economic growth, but contemporarily it describes the achievements already accomplished in the field. Of course information gathers important space in the debate, and when the work was first published, 2005, still the internet was not so wide spread, considering the absence of Wi-Fi and smartphone. However, the authors had the right intuition, foreseeing the great importance IT and the net would have in the following years. Still, technology and information are not the only components of the subject described. The term “all-embracing” is not exhaustive in a short definition, but what the report means could be synthetized with the binomial *Human Capital.* This definition is extremely broad and hard to categorize, but, resuming, it represents all the features of the development of human capabilities in the economic process, from know-how to networking. According to UNESCO report, the economic human capital can be grouped in four categories:

- Know-what: the knowledge of facts, the capacity to gather data and make statistics.
- Know-why: all the theoretical background, based on education and personal development of own studies.
- Know-how: it is the baggage of experience and learning a person earns on the field, through trial and error, attending others people doing or by sharing and consulting.
- Know-who: have great networking, the capacity to be able to find the right person at the right moment. It is being part of the society and capitalize on the society itself for personal fulfillment.

The union between technology, information and human capital represents a good picture of what the characters acting in the knowledge economy world are. But how is knowledge economy important in the path for sustainability? This kind of economy is an evolution of the capitalistic model, which succeeds the phase of

[37] UNESCO World Report (2005), *Towards Knowledge Societies*, UNESCO Publishing

accumulation of capital. Incrementing productivity is still the aim, growth is still the aim, but the way of pursuing it slightly changes. Powell and Snellman (2004) definition helps us understand how: "We define the knowledge economy as production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence. The key component of a knowledge economy is of greater reliance on intellectual capabilities than on physical inputs or natural resources"[38]. The accumulation of capital and the utilization of natural resources now have to make a step back, taking second place. Growth and development must be driven by intellectual activities, rather than the simple continuous introduction of resources in the process. Natural resources are limited, human capital might not be. Human beings have the incredible ability to innovate themselves, to research, to improve, to change. The thought in human history has been following a linear path, of continuous development and innovation, and the economic model has been framed on such human nature. However the inputs of the productivity path are not like human intellectual capabilities: they are not renewable, not all of them, not the most important ones until now. However, drafting the economic system on the model of human thought development has been counterproductive, reaching a point of no return. The whole human *acquì* has been used to create a *Fichtianan* linear economic development. At this moment, we have to use our backgrounds and our intellectual abilities, the human capital, to curve this path towards a sustainable economic form. In this effort, simple technology and R&D is not enough, a more complex system must be taken up.

As far as productivity increase - due to information technology empowerment - is concerned, it is useful to take a look again on Powell and Snellman studies. The two authors report that in the period 1970-1985 the investment in IT in the service sector jumped from the 6.4% to 15.5% of the whole capital stock. However productivity in the service sector was not keeping the pace with the one of the industrial sector. On the other hand, investment in IT in the manufacture sector had the incredible result of giving negative returns. The paradoxical situation of the decade of the 1980s was synthetized by the statement of famous economist Robert Solow, reported by Powell and Snellman: "You can see the computer age

[38] Powell W.W. Snellman K. (2004), *The Knowledge Economy*, Annu. Rev. Sociol. 2004. 30:199–220

everywhere except in the productivity statistics." The results of the investments started to show up just at the end of the 1990s and beginning of 2000s.

Why? The reason appeared to be quite clear after several empirical researches. To give its contribution, information technology investments must be "coupled with significant organizational changes"[39]. Still companies lacked the know-how, the capacity to make profitable something they knew very little about. It took time for them to absorb all the potential of the new technology and make it improve their economic performance. "Thus, the long-expected gains in productivity from information technology may not be realized until older, centralized organizational arrangements are abandoned and alternative ways of organizing are developed"[40]. Competences and skills of who employs new technologies must be updated. This is true for information technology, whose study here is taken as an example, but it can be extended to all forms of technological innovation. Something could be learned through the experience, especially for the firsts who launch the new technology, others will have the opportunity to have everything taught. For instance, the MagLev technology, widely used in Japan, Shanghai and in course of development in Germany and other countries, would not be giving positive returns if suddenly thrown in another economic environment. Technology implies the construction of train lines based on magnetic levitation, so that the coach does not touch the railway, limiting friction. These trains reach a speed of over 400 km/h. The implementation of such innovative way of railway connection, however, cannot be realized world wide in the same way. Leaving aside the huge costs, the theory and the know-how necessary to run such a technology cannot be acquired with a click. Companies, from the private point of view, and States, from the public one, should be very careful to introduce new technologies in their productive systems; first they must be sure to have done the right investment in the other component of knowledge, that is, the creation of an important and high level human capital. Purchasing patents from the exterior is not the solution. With regards to patents, their pattern deserves a short break on. The number of patents issued in the United States in the two decades 1980s and 1990s were three times more than the ones issued until that time (Powell, Snellman 2004). The trend is particularly interesting, because if purchasing patents is not a solution, the fact that their

[39] *Ivi,* p.208
[40] *Ivi,* p.209

number is augmenting signifies that investment in R&D becomes more and more important. Technology and innovation is not a sufficient condition for knowledge economy to be made capital of, but it is a necessary condition for the development of this kind of economy. Last detail on patents issuing evolution, the growth of university patenting has been more successful than the one of private issuing in the last years, showing the importance of education lead research.

Education makes it spontaneous for the uprising of the debate on the role of the public sector in the development of knowledge economy. The issue will be tackled more specifically later in this paragraph. For the moment, it is possible to say that the public sector has an important role and must share with the private sector burdens and obligations for a transition towards a knowledge society. Before moving to this point, it would be fitting to mention the last of the resuming three components sketched for the designing of a functional knowledge economy: human capital and technology have been already analyzed, information is the missing step. Information, especially in the Internet era, could be considered the linker, the gasoline for knowledge to be spread up. Internet does not have of course the power, or the position, to substitute schools and other education centers; rather it gives the incredible opportunity to let people know that things exist. It is a window on the world, it makes technology spread because anyone could know about what is successfully developed and deployed in other environments. At the same time, it is a powerful means to build networks, to keep contacts, to enable that part of the human capital previously called know-who. It is also a way to share experience, so to share know-how, a way to speed up the diffusion of knowledge economy as a model. Of course information is not just the web, but the net represents the most important accelerator, and like all things that go fast, it must be handled carefully. Still, the Internet is a precious resource, and its impact on economy is shiny and inevitable. Regulation and experience will be important to settle it on the right tracks, running towards a sustainable economy.

As the internet runs fast, the whole society does too, implying several changes in the job market with respect to a couple of decades ago. Jobs' turnover is a new reality of the new century. Open-ended contracts used to be the norm in the past and they guaranteed the possibility to plan the future in a more statistic way. The job was a job for life, making experience in that field, making career in that field and finally retire with a pension earned with years of working. Nowadays, the

economic system is in crisis and the pension system is not experiencing its brightest days as well. New generations grow up with the uncertainty of a possible pension, or sometimes with the certainty they will never have one despite the accumulation of several working years. Of course situations change from State to State, every nation has slight different systems, but the perception in the western world is pretty much the same. Probably Americans were more accustomed not to rely on conspicuous amount of money after their retirement, French and Italians were more. In any case, the job market is becoming more and more global and mobility is more common than ever. In these constant over changing scenario, jobs' turnover is another issue workers have to deal with. A job is not for ever, not only because of fixed term contracts, but also because that kind of job could result obsolete and unproductive after less than a working lifetime. Again Powell and Snellman report interesting data on these regards. In the time laps 1987-1997, 50 firms that had more than 50,000 employees in the manufacture sector resulted to have globally reduced their workforce by 20%. At the same time, however, companies of the same share in other sectors of the economy increased their labor force. In addition, smaller firms, many in the uprising service sector, created millions of jobs. In just ten years millions of workers had to move from manufacturing to other sectors of the economy, and still it was the old century. Now that the process is much more relevant, workers must be in the state of mind of constant "re-cycling" of their position. To sum up a concept of the UNESCO report previously quoted, it will be fundamental for workers to learn how to learn. Keeping pace with technology and innovation will be necessary for any worker to survive in the jobs' turn over arena. People have to pursue a lifelong education, updating their skills and sometimes learning something completely new in a very short amount of time. "Lifelong education can provide a response to the growing job volatility that many forecaster predict"[41], but it is not easy to change the culture of many workers around the world. It could be easier for new generations of workers to grow up with the capacity of constant learning, a capacity of adaptation dictated by the era they are borne in. Current workers may not have, better, they will probably not have, the same possibility to adapt spontaneously to ever changing working positions. The transition will be painful, many will lose their jobs, but there are no chances that the world will make a step back, no matter which political force will be

[41] UNESCO World Report (2005), *Towards Knowledge Societies*, UNESCO Publishing, p. 77

administrating, the system has already changed. Knowledge is one of the viable answers to better adapt and shape the new system in order to maximize people's well-being. Administrations will have the opportunity, or the duty, to manage the transition and to render it as softer as possible. It will also depend on the political culture in different nation States. Welfare countries, where social safety nets are well developed will be more likely to support the old working class through the transition, with re-integration programs, subsidies and adult education programs. Other countries might let the free market take its course, with all the sacrifices it involves. However, as far as welfare is concerned, it is interesting to see how the United States, under Obama presidency, have decided to increase their safety nets, with the health care reform, conceptually in contraposition with standards US policy making. It is not in the interests of this dissertation to make any judgment on President Obama's policies, however his interventions can be seen as a mirror for the times changing. The United States and European Union overall, but also all the other traditional developed countries, have been laying down softly on their old model, and now they are struggling not to get up; like when the alarm trills in the morning but one would like to stay in bed a little longer. It could be a couple of minutes or more, but sooner or later it will be time to get up; if it is earlier one is more likely not to be late.

Having started to talk about administrations' involvement, let's move to the public sector might have in the development of a knowledge economy. The State can do little about what is tacit knowledge, meaning all those competences people acquire on the field, through the sharing of their individual experience. However, the importance of the State is to promote public investments primarily on basic education, which represents the foundation of a successful economy. A People accustomed to study and to learn has better capacity of adaption and better responsiveness to challenges. In addition, education is the base to promote research and development, both on a private and on a public level. In addition, the States have to ensure to its Peoples the respect for negative rights, meaning the obligation to respect all the freedoms necessary to pursuit of knowledge. Freedom of speech and information is basic in the development of a knowledge economy, since it is one of the ways human capital can grow, being information one of the three pillars of this kind of economy. In addition the State should invest in all the infrastructures needed to support the spreading of knowledge in all its forms. According to Livraghi

(2007), knowledge is an almost perfect public good, meaning that it is neither excludable nor rivalrous. The results of this statement are the following: knowledge consumption of an individual does not preclude another one the same opportunity, and it is impossible to avoid someone to benefit from it once the service is provided. However, the association of knowledge with public goods does appear realistic. If knowledge were a public good as Livraghi claims, its supply would only be in the hands of the public sector, since it is in the nature of public goods, due to their characteristics, to be not attractive for private investments. Knowledge cannot be considered a public good for several reasons. First, it is clear that, as far as the provision of education is concerned, private education around the world represents a consistent slice of the pie. Education is not the only component of knowledge, but it is a relevant one, and it is quite all privately managed - at least on university level – in the currently most important country in the world – the US. In addition, also if the service is public delivered, the good does not appear to be non-rivalrous. Indeed, the public sector has the burden to provide the infrastructure, and often they are not enough for everybody. For instance, in Italy, certain public universities' departments have restricted the number of inscriptions allowance, meaning that the use by some reduce availability for others. In any way, the fact that knowledge is not a public good is positive, so that the private sector can be fully involved in its diffusion. Companies invest a lot in R&D, there are many private institutions providing education, and information is clearly not state controlled. Public administrations have the task to create the best scenario for the spread of knowledge, opting for the policies that best fit to the cultural and economical features of their countries. The aim must be the one of maximizing knowledge, weather with a minimum intervention or with massive investments it does not matter. There will be different best options depending on which country adopts them.

Finally, the knowledge economy, comprehending all of the features describing it, can be considered as the foundation of a new economic system, which aims at sustainable growth. According to Rullani (2008), it is the way to get over with twentieth century Fordist model, based on the enclosed ownership of knowledge. Each company tried to develop the most productive model, to gain competitive advantage towards all the others competitors. The path for a knowledge economy entails it exit from traditional enclosed ownership, and its availability out of

restricted track, so that ideas could be spread and valorized. The innovative element of this kind of economy is that knowledge is reproducible, transferable and re-useable several times with low or zero costs. Wide availability of knowledge allows to substitute accumulation of natural resources with accumulation of knowledge itself, being it now released and ready to be of high impact in the path for growth. Sustainable growth.

2.7 Sharing Economy

The three previous forms of sustainable economics – green, circular, knowledge – entail a vertical approach, either lead by the state or by private companies. Even though, both with green economy and with knowledge economy people's participation is important to give a boost to the phenomena, so that horizontal spread of culture and know-how work as accelerators. However, horizontality is not the origin of those three forms of sustainable economics. The last one, that we will call sharing economy, comprehending various forms and levels of it, is springs from the society and to the society itself it is directed. Sharing economy implies a re-interpretation of the concept of ownership, which is the feature joining the various forms of this spontaneous uprising. It is private ownership that is challenged, but if in certain case some hope for a total sharing of goods, in others this economics develops fully inside the market. The more orthodox method of sharing economy is called peer-to-peer production and it considers itself completely outside of the market. Who participate to peer-to-peer production process is voluntary and does not earn anything from the users but the possibility to him using the supply of the others. Peer-to-peer (P2P) settles around three main pillars of reformation: a third mode of production, a third mode of governance and a third mode of ownership. By "third mode" we mean a way that is neither capitalist nor communist (state hold). Michel Bauwens (2006) deepens the three features:

- "produce use-value through the free cooperation of producers who have access to distributed capital: this is the P2P production mode, a 'third mode of production' different from for- profit or public production by state-owned enterprises. Its product is not exchange value for a market, but use-value for a community of users.

- are governed by the community of producers themselves, and not by market allocation or corporate hierarchy: this is the P2P governance mode, or 'third mode of governance.'
- make use-value freely accessible on a universal basis, through new common property regimes. This is its distribution or 'peer property mode': a 'third mode of ownership,' different from private property or public (state) property"[42].

The result of P2P process of production is a type of good called "commons". A commons, is a either a natural resource or a finished human created one – either material or immaterial – which is shared by the community (P2P Foundation 2012). It is characterized by its use-value, rather than market-value, meaning that it is not sold on the market, but produced for a precise scope and shared freely among a community. The "cost" for the user is 0, but to be part of the community one should embrace an active role, even though free-riding is usually not sanctioned. The users participate in the production because they believe in P2P, and if everybody were to just take advantage of the system, the system itself would collapse. The other two features of the commons are shared governance and shared ownership. There is not hierarchy and access to the shared good is not denied to anyone. In the community there is no ranking, the good is not rivalrous and it could be shaped and modified according to anyone's necessity, excluding just one Authorized Version. Peer production opposes panoptism, where knowledge is reserved to an elite and access is restricted. The real enabling condition for pure peer-to-peer production to take place is the internet. The internet does not deter people to join the process, opening the doors of peer-to-peer and giving the tools to create an interconnected community. There is no filter at the entrance, and any selection inside the community is *a posteriori*, thanks to the evaluations members of the community give of other members. This kind of production process may appears utopian and unrealistic, but it actually has one filed where it has been already applied successfully: knowledge. Indeed the Wikimedia foundation, and its encyclopedia works exactly according to P2P parameters, being a model for further development of the process. Another field of possible expansion is the one of open source software, and everything of immaterial production in general. Design is

[42] Bauwens M. (2006), *The Political Economy of Peer Production*, Copyright: Michel Bauwens 2006, p.1

something which could be organized according to a P2P process, but the step from immaterial goods to actual manufacturing does not seem plausible. Indeed the community does not earn any money, nor of course it is auto sufficient from a living point of view, so that it needs the market society to restock itself. "Peer production is highly dependent on the market because peer production produces use-value through mostly immaterial production, without directly providing an income for its producers. Participants cannot live from peer production, though they derive meaning and value from it, and though it may out-compete, in efficiency and productivity terms, the market-based for-profit alternatives"[43].

The blending of pure peer-to-peer production process and the market gives birth to other kinds of what are generally called collaborative economies. For instance, some other forms of collaborative economy, like sharing platforms and crowdsourcing platforms, share with peer-to-peer production the importance of social capital in opposition to market capital. Human production is here more relevant than accumulation of material resources. However, sharing platforms do not create a common good to share, but just exchange ideas; while crowdsourcing is more market oriented, where participation is not denied to anyone, but the objective is to create a value-exchange product. An example is the Doritos campaign during the super bowl, when it launched a competition for customers to produce their own spot. The best four spots were projected during the ad time. The winners also had free participation to the game and a money reward. This is a clear example of "diagonal adaptation", with the words of P2P foundation report of 2012.

Pure P2P is not a feasible option as a wide spread economic model, since it resembles a technological communist state-less society, which is not practicable neither in best utopias. However, it could serve as a model, since it is in opposition with mere accumulation of capital, issue of main concern for sustainable economics. The idea of producing items according to their use-value, rather than a simple market value, could help redirect economy on a more cautious and less frenetic pattern. Wasting resources to manufacture useless goods must be avoided. This does not mean replacing money as transactions tools and living in rural communities refusing progress. The objective is the rejection of the redundant, of what is in excess, saving resources to ensure a sustainable growth for the further years, waiting for a realistic model that will not be relied on continuous growth to

[43] *Ivi,* p.6

go on. In any case, Michel Bauwens distinguishes some fields where P2P could expand in its pure version, other than knowledge and software production. The condition is the availability of any form of distributed fixed capital, making example of car-pooling. The ownership of such shared capital remains in question, if it should be cooperative or state hold does not result clear. Another field is the financial one, money landing, run by completely immaterial goods. The obstacles here are represented by already established institutions, being major powers in the current system, which are banks and funds. Where can cooperative purchase and production of capital go to is difficult to forecast, but for sure it will not be of major impact in the next years. What, on the other hand, could be of interesting impact in the short term, are all of P2P derivations, which are expanding in and through the market. The market, inspired by collaborative economic principles, is responding to changing customers' needs with a new series of business models, all based on sharing. So, as we have said at the beginning of this paragraph, the source of the sharing economy comes from the bottom, from the customers, whose opinion towards the economy of their country has been changing. Here, it will be reported some data from the Havas worldwide 2014 survey on the "new consumer and the sharing economy". Havas studied the new consumer, to help brands moving in new evolving markets, pointing out how in few years the economy has lost some of its certainties and it is still searching for new stability. Prosumers (professional consumers) are the subject of this subject, and their consumption habits will be probably mainstream habits in more or less 18 months. The survey has a world range, including the US, European countries, but also Brazil, South Africa, India, China and Japan, just to mention some of places where it took place.

The first interesting data that mentioned refers to the economic model in general: in average, including all countries, 55% of interviewed believes that the system is not working in their countries, with just 15% disagreeing (the others do not express any preference). China is the only exception where a slight majority of people is confident in their economic model. In any case, the system is challenged worldwide, not just in "developed" countries. The economic crisis, then, is clearly the reason why a vast majority of people has lost trust in their economies. A report by the European Commission (2013) has listed three main drivers for sharing economy. Apart from raising unemployment and the dropping of households' purchasing power, the other two are: lowering trust in conventional economic channels and

spreading of information technology. Many customers do not believe any more in many traditional companies, finding in peer-to-peer and collaborative economy in general an alternative to satisfy their needs. In addition, people are getting more confident towards the internet, they are not skeptical anymore in carrying out transaction true the internet, trusting other individuals found on the web. In some cases, web channels ensure more the clients than traditional ways of pursuing a service due to the high guarantees many websites provide to their users. For instance, in Sao Paulo, Brazil, many people prefer to reserve their taxi exclusively trough their smartphone app, rather than stopping them by the street, since all the taxi drivers enrolled in the system are catalogued by the company, giving a sense of security to the user. In Addition, the reservation gets to the company central system, so that is well known which taxi driver is picking up a precise registered client. The customer, along with his reservation, also receives the name and phone number of the driver, having the change of getting in touch with him. This example was just to highlights trust people nowadays have in information technology channels, although taxi reservation is not properly a model of sharing economy. Still, one feature is present: a direct line between the provider and the user through the use of the net. As we will see, this direct relation provider/user is the base for any successful example of sharing economy business model. Clearly, the other main point for sharing economy businesses to take place is an existing target; do people agree on sharing things in practice, or is it just a suggestion? According to the Havas survey, "Two-thirds of the total sample believes society would be better off if people shared more and owned less (only 8 percent disagree)"[44]. This concept is valid also for traditional capitalist countries, like the US and the UK, even though the majority here is less striking than the average one. For sure, it is important to consider also segments of the population. People in the segment of age 16-34 are more likely to have participated to crowd founding projects, reselling of items on the web and are in general readier to share things rather than owning them, with respect to their peers in the segments 35-54 and 55+. This was expectable, but it is not a matter of concern; indeed youngsters of today will be the majority of consumers in the next future, and it is correct to shape business models also oriented to them. Moreover if such models support a sustainable growth, with the double effect of satisfying economic needs and promoting a better future

[44] Havas Worldwide (2014), The New Consumer And The Sharing Economy, VOLUME 18, 2014

development. Having said that people are ready to share, what and how is currently being shared, and with what results? The European commission, in the already mentioned report, has analyzed six businesses based on sharing. They are:

- Peerby: an online marketplace that matches people that are in temporary need of a specific object, with those that are in possession of the object and are willing to lend it.
- Shareyourmeal: a platform where neighbors can sell homemade meals.
- Sorted: a platform where freelance sell their services, listing their skills, rate and willingness to travel.
- Fixura: an online peer-to-peer landing platform, where also more the one person could join in a loan to share risks.
- Airbnb: a famous website for accommodation renting, where the client is put in contact directly with the owner of the lodging required.
- TaskRabbit: people can put online a task they are willing to pay for (and how much) waiting for a peer to bid on the task.

All these platforms have the aim to connect people creating an online community. Who joins the community could be part of the supply and of the demand at the same time. Information technology helped cutting barriers among peers, restoring the oldest way of doing business: connecting directly someone who needs something with who provides that something. The companies analyzed by the European Commission are settled in the Netherlands (peerby and shareyourmeal), in the UK (sorted), in Finland (Fixura), and in the US (Airbnd, taskrabbit). Despite they were borne in circumscribed environments, the internet allows them to turn international, operating in many parts of the world, with a minimum deployment of capital. These platforms are perfectly into the market, since they earn a commission for their services, but the amount per user is usually extremely low, since the capital requested to start and run the activity is not high. Some platforms may also opt for zero fee charging on their users, gathering money trough advertisement on their webpage. Others are just no-profit organizations. Still, there is not yet a golden standard for this kind of businesses, them operating in different and sometimes opposite way one from the other. Some platforms are designed according to a demand-driven principle, while others prefer to focus on supply. The models briefly described above run on the principles of peer-to-peer, even though they

are pure of course because they do not aim at the production of commons, but only at connecting peers to share items and services they own. In this arena, current legal frames, which are not often up-to-date, represent an obstacle for such business model and P2P businesses risk to be treated like regular ones, facing fiscal and managerial obstacles for their development. The other obstacle they may face, at their launch, is the building of a critical mass of users. People use those platforms if other people use them, in a virtuous circle, so that it may be difficult for low capital business to have the necessary initial spin. Other kinds of sharing economics are not based on peer-to-peer but on the sharing of third owned goods. Car-sharing is the best example of successful model of this kind. Private ownership of a car is challenged, reducing costs for people who do not need to use it every day, but just in case of need. Car sharing, made possible by smartphone app and GPS, which tell you where the closest vehicle is and allow reserving it, has great impact also from a sustainable point of view. The reduction of costs for consumers is sided with a lowering of traffic jam, with the consequent reduction of gasoline consumption and co2 emissions. However, a great amount of starting capital is necessary to start a sharing business of this kind. Small low capital start-ups cannot satisfy this requirement. So, which future for wide scale sharing businesses? The last part of the Havas survey is dedicated to the role of brand in the described collaborative economy. 85% of the sample believes that brands should serve as guarantor in peer-to-peer transactions and 71% would feel more confident is well-known brands undertook an intermediary role. Brands have to reshape their role in the market and many of them are already doing it. For instance, Chanel is providing its handbags with a serial number, so that if the item were to be re-sold, the second hand purchaser can verify that the product is authentic. In addition, 91% of the respondents want brands to stimulate a more ecological form of consumptions. People feel they should consume smarter, and companies must recognize such need and behave in accordance. Re-selling, repairing, renting and sharing are the new rising features of the market, coming out from a feeling of dissatisfaction people have towards the current economic model. Peer-to-peer theoretical model settled the baseline to develop new kind of businesses able to satisfy new customers' needs; models that have found in the internet, and information technology in general, the perfect means for spreading fast inside

the market. Sharing rather than owning opposes the unlimited accumulation of capital, giving a good response to the necessity of growing with limited resources. Physical capital deployment is reduced, but people's well-being can keep growing, since they do not have to do without things. Waste and squandering are being cut, but services and goods are still widely available to anybody, moreover at a lower cost than before. According to the European commission, policy makers should put incentives and help low capital enterprises wishful of starting P2P businesses, and above all they should draft the correct regulation for this new way of doing business.

2.8 Opportunity

Green economy, circular economy, knowledge economy and sharing economy are not independent one from the other, but they should be interconnected to create a complete and functioning sustainable economy. Right now they are just rising segments of the economy, a response of the market to the economic crisis and the needs that have originated from it. It has been the market to make them spread out, not the raising awareness of political leaders or the benevolence of multinational companies. As we have seen with green economy, some of these practices carried out by private companies are simple market strategies, others are a viable way to save money and increase profits. Still, people's awareness towards sustainability, to the environment and to their future in general is getting higher. The market, as boost for private development of sustainable practices, may signifies increasing profits but it is also responding to customers needs. However, the needs alone are not enough for sustainability to become the mainstream economic model. A top-down approach is necessary in quite all the field of sustainable economics, with the important regulating role of policy makers and administrations generally speaking. Still, as there is a market for goods, there is one for politics. More sustainable policies are requested, more they become attractive for politicians and vice versa, more they are promoted, and higher is people awareness towards the issue. The international meetings that have been hold until now seemed to had useless results, since no international governance or international binding agreements have been settled. However, these meetings have been the wind blowing on the sails of sustainability, being one of the starters of the circle of political appeal previously

mentioned. The first difficulty, the one of winning static friction, inserting sustainability on the world agenda, has been overtaken. Sustainability is now at the center of the debate, and this centrality made it become a character in the economic market. Usually, what is market-attractive can have a good development. Now policy makers must ride the wave, and take advantage of the window of opportunity opened by the economic crisis, to settle the bases for a better future founded on well-being and sustainable development.

CHAPTER III

3.1 The window

This second chapter will focus on Latin America. Is this geographic area suitable to develop and implement sustainable economics? If the answer is yes, why? To deal with these questions, first it will be important to understand why capitalism has failed there, or at least, why it has not given the same results it gave to western powers. Indeed, we found out three main components to focus on to claim that South America has the possibility to be a world leader in the implementation and development of sustainable economics models:

- The bad performance of capitalism and the openness to turn to a new model;
- The wish for independent fulfilling after colonization and years of exploitation, now that the west is facing an historical economic, political and social crisis;
- The abundance of resources and an ecological *superavit*.

Hernando De Soto will help in this analysis with his "The mystery of capital". This masterpiece will also be a guide to be introduced into Latin American economic and political culture, to better understand customs and usages of the area, always important to draft the best fitting policies. Another masterpiece, "Venas Abiertas de America Latina", by Galeano, will be key to show the dark history of the continent, colonization exploitation and its present time consequences.
Abundance of resources is the third important issue. The South American continent is extremely rich in natural resources, enough to guarantee energetic independence through and after the transition. Land, sun and water are fundamental elements to support sustainability, especially in economies not fully developed in the traditional way. "LDCs (least developed countries) are well positioned in the transition to a green economy given their low-carbon profile and rich natural capital and cultural assets. Relative to larger economies, LDCs are generally characterized by low-levels of carbon emissions and relatively low investments in polluting technologies"[45]. The denomination LDC still relates to a development based on industrialization. Also such interpretation of development

[45] UNEP (2011), *GREEN economy: Why a Green Economy Matters for the Least Developed Countries*, UNEP publications - LDC-IV Conference.

should be averted, since sustainability can lead to another form of development, a green one, which is far more desirable than the current notion of the concept. Finally, after having a clear picture of the area, the focus will move to the possibilities available to implement sustainable development in the area, with respect to practical considerations.

Another model implemented in Latin America deserves a brief mention before keeping on with the possibility to switch to sustainable development: the import substitution strategy. It was an economic model based on the "Estado Desarrollista", verbatim "Developer State", but in English known as "Structuralist State (Fitzgerald 1998), which had the purpose of protecting some sectors of national economies, especially the industrial one. The aim was to let develop domestic factories, applying high custom duties to foreign products, stimulating production and discouraging import. The issue was that domestic industries were not capable of satisfying completely internal demand, so that many items still had to be purchased abroad, and just the ones manufactured inside benefitted custom protection. The result was to have poor quality products and an incomplete industrial sector, unable to improve itself because of a lack of competition and investments in R&D. The system also did performed well because of two reasons: first the volatility of the currencies and vulnerability to external shocks; second, the pressure by the United States to make Latin countries open their markets to international competition, in order to have new places where to export. Now, in this chapter, we will see why a new model established in Latin America could perform better than previous experiences.

The crisis has been giving a new window of opportunity for sustainable economics to become widespread, to actually substitute business-as-usual model and to start pursuing well-being rather than simple growth of GDP. If the results will be positive in a huge area like Latin America, spillover effects could be foreseeable and it would be probable that sustainability becomes mainstream. At least it is desirable, keeping in mind that without the involvement of the main powers it would be really complicated for the process to really take off. For sure, sustainability requires several components to be promoted on a wide scale. The first objective is to have accurate studies of its applicability and on its benefits, with a draft of practical policies to implement to pursue the goal. In the previous chapter, several viable alternatives have been presented, which are already functional to the achievement

of the objective of sustainable growth. The second need is to have a virtuous showcase so that citizens of a determined area could experience those benefits. Globalization of information is the way to share the experience involving people all around the world, fostering demand. At the same time, there is the necessity of some decision makers who have the courage to start the process, *conditio sine qua non* to obtain the showcase. In a place where capitalism has failed and a huge amount of the population is still below the poverty line, but contemporarily is endowed with a high level intelligentsia, the elites might be more likely to be forced to take the courageous step of promoting sustainability. Latin America seems to have such characteristics.

3.2 Failure of capitalism

Capitalism in Latin America has failed dramatically. Not only in the South American region, also quite everywhere but the western countries. Japan, South Korea, Australia and New Zeeland are included in the group of western economies, although geographically in the east. Why do we claim that capitalism has failed in the region? One indicator would be enough to clarify: still 4.6% of the population lives below the poverty line. The data does not seem so interesting at first glance. Living below the poverty line means to count on than 1.25 American dollars per day. In Latin America, until 2011, there were 27.6 millions of poor, following not so consistent decreasing trends. This data is compared to a 0.5% in Eastern Europe and Central Asia; in western countries there is no sensible percentage. Then, there are slightly more than 210 million of people in the continent living with less than five dollars per day, who join the 27.6 millions of official poor, so called according to the previous definition*. One could argue prices being lower in the Latin area compared to Europe or the US. True, but not enough to claim that 5 dollars per day ensure good quality of life. Indeed, "According to 2008 Gini index estimates based on Solt (2009), Latin America and the Caribbean is the region with the highest levels of income
inequality"[46], scoring 48.3 in 2008. In ten years there were no substantial changes, since the situation on inequalities is pretty stable. Differences among income

* Data from World Bank: http://povertydata.worldbank.org/poverty/region/LAC

[46] Ortiz I. Cummins M. (2011), *Global Inequality: Beyond The Bottom Billion. A Rapid Review of Income Distribution in 141 Countries*, United Nations Children's Fund (UNICEF), New York, p.26

classes are an important issue, since showing inequalities also lead to social tension and, possibly, violence. Public Security is a relevant problem in the whole continent, which influence negatively well-being and the quality of life in the area. In Brazil prisons are overcrowded, and they are seen as training camps for crime rather than re-educative institutes. Robberies and murderers are not surprising events, and people in general are getting accustomed to them in a really worrying way. Violence is now considered quite normal, not extraordinary, and a sense of resignation is spreading around. The economic system and bad administrations are partly responsible of this situtation. People become violent when they have nothing to lose, where life conditions are meager and it is highly worthy to take risks. Sustainability could be an answer to the economic challenges in the area, and a drive for social issues to be tackled and solved. De Soto, found out five components to explain why capitalism in South America has not given the same results it provided in western countries. Why Latin nations have not experienced a dynamic middle class, being condemned to deep fractures in their societies. The failure of capitalism is an important element to turn rapidly to sustainability: it is always easier to get rid of something that does not work properly, rather than to what has well served. "Rapidly emerging economies have the potential to expand energy provision and plan for urban growth without having to undo the legacy of a century or more of outmoded infrastructure and associated patterns of social behavior"[47]. Western countries are extremely tight to the model they have developed, and which has brought them on the top of world hierarchies. It is like a soccer player who was fundamental for a team to win several titles in a row, but who became to old to keep pace with incoming players. The team must put him aside, keeping its love towards him and getting the best from his experience. However, this process is not easy at all. Especially when the link is so profound that administrators have eyes just for the glorious past, rather than to make foundation for a bright future. Latin America does not have such relation with capitalism, some have earned from it, but more have suffered it. The challenge is to understand if the reasons of the failure of capitalism could be also an obstacle for the implementation of sustainable economics. So, first we are going to list the five components, analyzing their role in

[47] Bigg T. (2011), *Development Governance And The Green Economy: A Matter Of Life And Death?* In: BEYOND RIO+20: GOVERNANCE FOR A GREEN ECONOMY, The Frederick S. Pardee Center for the Study of the Longer-Range Future Boston University

the bad performance of the dominant model in the area. Then, we will see weather and how they would serve as an hindrance for the development of sustainable policies. The five issues (the author calls them mysteries) De Soto (2000) points out are:

- The mystery of missing information;
- The mystery of capital;
- The mystery of political awareness;
- The missing lesson of the United States;
- The mystery of Legal failure.

Missing information can be translated as lack of legal formality. Difficulties in understanding who owns what, who lives where, who owes something to whom are one of the main obstacles to the flourishing of capitalism. According to the Peruvian scholar, it is not technology or will what developing countries lack, but the impossibilities on gathering information. Better, to gather information in the way westerners are accustomed to do, that is trough legal and bureaucratic channels. If a foreign investor wants to buy a piece of land, he needs warrantees that the person who is selling that land to him is actually entitled of directing the transaction. So, why do not people in developing countries try to obtain legal titles of their properties? The issue lies exactly here, in the difficulties citizens of developing countries have to face to do things legally. De Soto, joint with his team, tried to settle a legal business in the outskirts of Lima, pretending to be a worker who is following a legal path to open an activity. Indeed, some of his partners lived for the whole time of the study in the outskirts, travelling every day to the city center filling in forms and dealing with bureaucracy. It took 289 days to open their business, a garment workshop with only one employee. In addition, the cost was of $1,231, thirty-one times the average minimum wage in Peru at that time. It is no surprise that anyone wishful to open an activity there does not follow any legal path to achieve his goal. He would be in bankruptcy way earlier than the first day of work. The issue is that if an activity is opened informally it has no formal value, and it is impossible to be sold out of the schemes and the customs of the area where it had been started. For sure, in an informal way, if X starts a shoes shop informally, everybody in the neighbor recognize to X rights on that shoes shop. Spotted visitors will rely on such informal recognition, but not huge investors. If an investor purchased the land where X has his shop from Y – the legal owner of the land – then

X voice on the matter would count nothing. The investor could dispose of the land at his pleasure and X would lose everything. In some cases, like in many Brazilian favelas, organized crime controls the territory, substituting the state, and covering informal transactions. With respect to favelas, De Soto points out that in the thirties more than 66% of the new houses in Brazil were built to be rent. In 2000, when he was writing, the percentage dropped to 3%. Of course the market did not disappeared, it just turned informal, due to the extralegal practices in the favelas. The rapid urbanization of these areas left open the doors for the upsurge of a parallel market, a completely undercapitalized sector, which had the effect of trapping the poor. They were protected at the beginning, no guarantees were requested and the prices were clearly lower than on the official market. However, transactions on the extralegal market could not rely on any tutelary rights, and people have been condemned to be submitted to drug dealers and other forms of mafias.

Here we are moving to the second mystery, the mystery of capital. Citizens of developing countries do own goods, but the do not hold legal recognized rights on them. So, their properties cannot be transformed in capital, it is not representing any formal asset. "What the poor lack is easy access to the property mechanisms that could legally fix the economic potential of their assets so that they could be used to produce, secure or guarantee greater value in the expanded market".[48] Banks do not distribute any loans to whom is not legally entitled of any property, and the lack of available credit create a trap for poor people, forced to stay poor. The author identifies six effects formality of property has on the economy:

- Fixing the economic potential of the asset: the value of the good moves from potential to real, being it possible to classify and evaluate it. Capital, to be considered so, must be registered, and such registration releases all the potential the asset has hidden.
- Integrating dispersed information into one system: it is fundamental to have guarantees on a purchase or on a sale that the transaction is valid for everybody. One legal system is that guarantee, making it useless for people to rely either on customs, word of mouth or any other kind of informal social contract.

[48] De Soto H. (2000), *The Mystery of Capital*, Bentam Press, London

- Making people accountable: this effect allows individuals to emerge from masses, being every single person accountable for his transactions. As previously asserted, giving people something to lose is fundamental to take them out from the poverty trap and social degradation.
- Making assets fungible: a registered asset can be traded much more easily than an informal one. in addition it can be compared, standards can be fixed and a more precise evaluation of it can be produced.
- Networking people: people who are individually identifiable and accountable leave a track of their movements. They can stay in contact and exchange services and information, since the information they have is guaranteed.
- Protecting transactions: Public record-keepers are insurance on any kind of transaction, keeping track of everything. These records are necessary for administrations and judges to solve legal proceedings.

"The six effects of an integrated property process mean that Westerners' houses no longer merely keep the rain and cold out. Endowed with representational existence, these houses can now lead a parallel life, doing economic things they could not have done before". A house is not a house anymore. Mortgages on houses were at the center of the main causes of the financial crisis in 2007-2008, a crisis that is making us questioning on the capitalist system. Still, in the current economy, property must be insured, since without property there is no money, and with no money the economy does not run. The money we are talking about is clearly banking credit, which cannot exist without the institution of property.

De Soto claims that the situation developing countries are facing now is extremely similar to the European and the United States environment during the industrial revolution. Also in 1700 new European nation states had to face a turn from informality to formality but it took long time and supporting small numbers in terms of population. Here it comes the third mystery, the one of political awareness: the challenges political systems are facing in developing countries have already been tackled by old Europe, but now time has lowered and population has grown. In addition, people in developing countries are moving fast towards cities, joining altogether in huge megalopolis with 10 and more million inhabitants. The process of urbanization is completely chaotic, local institutions do not have the means to organize and make it flow in the pattern of legalization. Buildings come up in an uncontrolled way, following extralegal quick patterns. For instance, in Brazil,

the author says there has been a 0.1% growth in construction industry between 1995 and 1996, but sales in cement had increased by a high 20%. Institutions in developing countries were not ready to face such a rapid transition to a capitalist system, they shivered and did not resist to the impact of the market wave. Difficulties have arisen in understanding when to fight informality and when to take advantage of it, orienting it into a process of legalization *a posteriori*. Here it appears that extralegal patterns are not virtuous practices, however in developing economies they could be an option to exploit. But they must be oriented in the right way, like New York at the beginning of 1900. It was a completely uncontrolled and illegal development, but authorities often closed one eye for the sake of growth and affluence increase in the city. It is not always the correct choice, but being acquiescent with extralegal growth should be at least considered as an option and then evaluated case by case. Of course the time of acquiescence must not be too large, and the process must be stopped starting a wave of further legitimation of what has been done. Indeed the extralegal must rapidly turn legal in this situation so that a trap of total informality does show up, like currently in Latin America. The transition to legality should be well planned, and once businesses are legitimized, they acquire the characteristics of proper capital. If the process of informality it is not stopped in time, then it will become the rule and the economy will fall in a dangerous loop. Nowadays, South American countries have fallen in this kind of loop, finding it extremely difficult to exit from there. Of course here we are talking about positive extra-legality, far from organized crime and mafias, which often take control of the loop if legal institutions are not able to restore things on legal frames. In this path of informal growth, "the crimes extralegals commit are designed to achieve such ordinary goals as building a house, providing a service or developing a business. Far from being the cause of disarray, this system of extralegal law is the only way settlers have to regulate their lives and transactions"[49]. People who would like to work, but cannot do it in legal ways are not the cause of the failure of capitalism for sure, rather they could be the victims. The problem is that political institutions generally did not have the time to adapt, everything came too fast and they have not been ready to face the wave of urbanization in their main cities. De Soto is right in saying that old European countries had far more time to make the transition and they did not have big issues in population, but it is also true that they

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were the pioneers, experiencing directly the passage to a capitalist economy. Developing countries now have better technologies, and they could also benefit of the models laid down by those pioneers. The models cannot be imported everywhere as such, but still, they represent a good starting point. De Soto claims that the poor quality of institutions in Latin and other developing countries derives just from this lack of time, from the situation itself, but makes no reference to the political culture of such countries, or their previous history. The quality of political institutions in Latin America has not always been bright, with a history of *golpes* and revolutions, other than a massive bureaucracy. It is not the last thirty years that made a substantial difference. There have been great leaders and administrators, but the political adventure of the continent has always been running on roller coasters. The recent history of the continent will be analyzed through the work of Galeano, seeing how such history have influenced the political structure in the area. The inadequacy of the institutions was one of the main obstacles for capitalism to be successful, but how would this lack of quality influence sustainable development? The case study of Brazil in the next chapter will give us the instruments to draw the conclusions as far as how necessary institutions are for the implementation of sustainable economics. For now, let's go back to the failure of capitalism, and the fourth mystery, the one of the missing lessons of US history. After having seen how in Europe institutions had the time to adapt, to become open to market practices, being neither discouraging nor of any obstacle for business making, now let's focus on the North American situation, which differently from the old continent, and like Latin America, has a past of colonization. The situation in North America, however, was completely different from the one in the south of the continents. Colonization in the south was state-controlled, with a real army conquering lands with prosperous civilizations. In the north the Native Americans were not organized in any form of state, living in independent and rival tribes. Many of the colons were no soldiers, but independent citizens wishful to improve their economic conditions. They were not making the interest of the motherland, but their own, of course living below English law. But the British law was not suited to the new needs and challenges of the colons, especially to the vast amount of land with no property claims. Meaning claims not recognized by the British. In England, occupying an empty piece of land without a legitimate title was completely illegal. This practice, called squatting, became

conventional practice in North America, since no consistent resistance was encountered and the rule of law was much more flexible than in England. In addition, borders were not settled in a clear way and the motherland did execute any military oppressive control on the colons. On the opposite, occupation of the territories in the South was managed entirely by the state, which assigned title and lands, creating a strong tight with the capital cities in Spain and Portugal. In addition, in the second part of the colonization process in the north, settlers ran out of the borders of the original colonies, creating independent regional authorities in the West, in their race to gold. Settlers in the west had even less state to rely on than their peers in the East. Their occupation of the territories was completely independent, security and military was on the individuals and on private groups entirely. The territories were first occupied by individuals, and only after quite an amount of time joined to the United States. The way of disposing of western territories had two main effects: the first one is the construction of purely individualistic society, where negative rights are far more important than positive ones; holding a gun is considered an individual liberty in the United States, protected by the constitution, and the origin lays on the necessity of settlers to fight against Native Americans without a state supporting them in the first phase of occupation. This example is extreme, but focuses perfectly the issue. The second effect of independent squatting is the preeminence of the market over the state. In the United States it came first the market, and only later on it has been regulated by the state. According to Fabbrini (2007), in Europe the market was state lead, while in America it surged spontaneously. That is the reason why in the United States institutions adapted far earlier and more easily than in Europe and in current developing countries. They arrived where the engine was already running, and they shaped and modeled on the existing system. The legitimation path followed two parallel schemes. In the lands where there were no records of property rights, the incoming public jurisdiction had to recognize neighbors' and social agreements, creating from those social arrangements new legitimate contracts. Where someone had legal claims on squatted land, the local courts imposed on legitimate owners to pay to the occupier a tax on improvement if they wanted their land back. If they refused, then the squatter had the right of pre-emption, meaning the possibility to buy that land at a price fixed by the court. The incoming state had the capacity to regulate an informal sector, which was not

criminal, but simply out from the traditional legal frames. In South America, the process of colonization was completely different, and settled institutions did not have the capacity to regulate the transition to a capitalist economy in a proper way, leaving it open the door for mafia and other criminal agents to take its place in the process of regulation. Capitalism, without legal regulation - being it a priori like in Europe, or a posteriori like in the US – cannot provide a successful performance, since it is based on accountability. The lack of (external) recognition of such accountability makes it impossible for tangible assets in developing countries to be turned into functional capital. "Ultimately, the lessons of the United States' transition to formality will not be found in the technical details, but in changes in political attitudes and in broad legal trends. In passing laws to integrate the extralegal population, American politicians expressed the revolutionary idea that legal institutions can survive only if they respond to social needs"[50]. If they do satisfy this simple condition, sub-state forms of informal governments would replace them, like in Latin American outskirts, being Brazilian favelas, Argentinean villas and so on and so forth. Fortunately the needs of people are changing, the feeling of degradation is wide spread, and thanks to new technology people can see how their peers live on the other side of the ocean, or just crossing a border or a river. Distances are being cut; knowledge is the first symptom for dissatisfaction. Now the capitalist system is wavering more than ever and new demands are rising. Now developing countries have the opportunity to turn page, to end the chapter of the book they had been forced to read, to grab a pen and start writing their own. Before moving on, let's see which is the last mystery De Soto discusses about it in his work. He asks why the legal system in developing countries practically failed in helping the transition. The Peruvian author identifies five misconceptions institutions generally shared in developing countries. Indeed, the legal frame does exist quite everywhere, it is the access to it that is denied.

The first wrong idea the public sector has in those areas is that people take extralegal ways to do business to avoid paying taxes. Second, real estate assets are held illegally because not well recorded nor mapped. Third, laws on property are not joined through working plans of execution of such laws. Then, institutions have been ignoring existing contracts borne out of the legal frame. Finally, the conviction that laws alone can change people's culture, without a high-level leading class.

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According to De Soto, institutions in developing countries share these false ideas and ill-administrate their countries. In fact, citizens in those countries do not run illegal business largely not to pay taxes, but because they have difficulties in following legal paths to start their activities. The absence of records is an issue, but it is not crucial, as well it is not crucial technology. Indeed, neither Americans nor Europeans during the industrial revolution could experience the same technological level developing countries have available nowadays. What they miss is the capacity to enforce the law passed by the governments, being now trapped in that loop of illegality mentioned before. To demonstrate people's will to exit from extralegality, De Soto's team in Peru established an office to help entrepreneurs who voluntarily wanted to register their business according to the existent legal frame. Of course, the team of the author worked for free, but the ones who enrolled the project had no promises of tax reductions. And they were paying no taxes at all staying in the informal level. De Soto writes that what they did was simply to deliver costs below the ones necessary to survive in the extralegal market. More than 276,000 owners of small and medium enterprises joined the program. The problem is to understand why public institutions have not been capable of providing such kind of service, useful both to citizens and both to the state, since tax revenues collected in four years through this program amounted 1.2 billion dollars. In synthesis, the lack of a working public administration has been decisive in the bad performance capitalism has been giving in Latin countries and in other developing area as well. Joint to local administration flaws, the legislative powers had failed in recognizing consensual rules and in adapting their cultural conventions to an externally imported economic model. In synthesis, "Capitalism is in crisis outside the west not because international globalization is failing but because developing and ex communist nations have been unable to 'globalize' capital within their own countries. Most people in those nations view capitalism as a private club, a discriminatory system that benefits only the west and the elites who live inside the bell jars of poor countries"[51]. The bell jar consists in that minority who takes full advantage of capitalism, maximizing their profit at the expenses of their compatriots. The new globalization, however, entails not only wearing Nike shoes and drinking Coca Cola, but also sharing information trough the Internet, Facebook and the other social networks; such journey of information

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could have the power to make the bell jar tremble, as well as the traditional international hierarchies, now that capitalism started its decline also in the west. If this will and opportunity will be enough to overcome the deficiencies of public administrations in Latin America will be matter of the conclusive chapter of this work. In addition, alternative actors and factors will be proposed as propellers for sustainable economics to be successful implemented. Still, it is clear that capitalism has failed, and the urgency for a new model to be installed in the area represents an excellent opportunity for sustainable economy to become a dominant model in the area.

3.3 Open Veins

Eduardo Galeano, an Uruguayan scholar, in 1971, wrote about the oppression his Continent had to suffer since the colonization period. He claimed at that time, that many of the issues South America is facing now are strictly related to the process of occupation and decolonization in the Latin countries. Already in the seventies, thirty years before De Soto first published his work, Galeano addressed western capitalism to be a new for of imperialism. He said that this new form of imperialism would not have given any benefits to its colonies, but it would have had the effect of enriching just few centers of powers. Indeed, the result Galeano was predicting was the one of an increase in social inequalities, and of social tensions as a natural consequence. As we have seen with the Gini index, inequalities in South America have risen and social tension as well. Violence is an issue nowadays more than ever. Let's take example of *narcotrafico*, meaning drug dealing, in the Brazilian favelas. According to Alberto Pinheiro Neto (2013), organized crime in Brazil is not something new, however its development in technology and technics the mobs use has been pretty fast. The phenomena will start to show up with the end of the dictatorship in the decade of the 80's to have a rapid and impressive evolution reaching the complex situation of our days. Organized criminal factions started to exert an unprecedented influence in jails and in citizens associations of troubled communities. In addition to that, in the second half of the decade they started to enrich their armaments with pistols and nine millimeters machine guns becoming common to most of criminals. Interesting is that in Brazil dictatorship ended in 1984 and the armament of organized mob started shortly after the end of the military regime. In the call for democracy and the transition of those years

probably criminals had found fertile territory to expand their operational ray in a temporally vacuum of power. That does not mean that Brazil need a military regime to control mobs and drug dealing, but that in a development country, were especially in the 80's huge masses struggled into poverty, planning is fundamental and the state has to permeate the society, leading it through the transition. Unfortunately the problem has been undervalued and it was let it to be gone into anarchy. The result is wide urban areas entirely controlled and ruled by drug dealers. The absence of a strong and oppressive presence of the state had not been substituted by a proper transition to a virtuous market economy. As we have seen in the previous chapter, administrations, in Brazil like in the other countries, were not capable of managing the changing situation. The social result was the one described by Neto Pinheiro, with a quick upraise of organized mob, able to physically control the territory and take place of the state. The combination of a missed transition to positive capitalism, leading to the spread of poverty, and the raise of organized violence in the outskirts, provoked that environment of informality pictured by De Soto in his book. Quite all Latin countries have experienced any kind of dictatorship, with a period of 20 years between the sixties and the seventies being particularly fertile. Just to mention the most important, dictatorship in Brazil ended in 1984, in Argentina in 1983, in Uruguay democracy was restored in 1985 and the Chile of general Pinochet lasted until the incredible era of 1990. Young and new democracies, without solid bases, had not been capable in their first years to face social and economic internal challenges, also exposing themselves to the economic influence of west, mainly the United States, becoming dependent to external economies to survive. This period will be briefly analyzed from an economic point of view referring to the work of Galeano. First, it may be interesting to conclude showing how the worries of the Uruguayan Author have became the truth. The organization of mobs in Brazil, for instance, has its rise in the first years of the 90's, when the criminals improved their equipment with rifles, war machine guns and grenade launcher. They started a real war against police officers in a declared war to the "res publica" and the state as a legitimate institution. The mob started killing and kidnapping police officers other than physically controlling the favelas, deliberating checkpoints and curfew. After a reaction from political forces, tension climbed up again, especially in Rio de Janeiro in 2006, with a subsequence of cruelty unseen before. The criminals were armed

with army equipment on vast scale and started hunting and persecuting public officers in the street starting a real war to claim their superiority with respect to the public sector and legitimate with the use of force territory control. In 2008 the reaction of police forces was the one of launching the “pacificaçao” (pacification) plan, literarily an armed invasion of the favelas in a typical climate of warfare. Poverty is certainly one of the intrinsic factors alimenting the surge of organized crime. People could be blaming the public sector for their condition, and find their possibilities under the protection of mobs, creating a sort of veil defending the organized crime. This represents one of the main issue in fighting mafias, their interconnection with local people, the overlapping between victims, associates and permanent members. It is difficult to distinguish between who cooperates because of will, fear or simply because of the lack of alternatives. The missed transition to a healthy capitalism had the result of increasing poverty, disillusion and uprising of criminal organizations. Of course the transition did not occur for some reasons, and Galeano perfectly described these causes in “Open Veins of Latin America”. The author starts his book with a simple statement: the poverty of men is the result of the richness of the land. The poorest places in the world, according to the Uruguayan economist, are the ones that had extremely rich soils and abundance of natural resources. These places had their periods of apogee, but fall in ruin when they run out of their main source of profit or the market prices dropped.

The city of Potosì, in Bolivia, is one of the most interesting examples reported by Galeano. It was the center of the exploitation of silver in the region, with a population that in the XVIII century was higher than the Argentinean one in 1970. One century and a half later, population in Bolivia had dropped to one sixth out of the one living in Argentina. Eight million indios had been killed exploiting their workforce in the silver mines. In addition, the whole product of the mines was being transferred entirely to Europe, depriving the workers of the fruits of their efforts. The development in the west was fomented by the gold and silver of the American colonies. While in the northern part of the continent free citizens were exploiting the territory for their own benefits, with the aim of permanent establishing, in the South the products of the soil were transported to Europe, leaving nothing behind. First colons in the South were no independent settlers, but soldiers, many of whom were former convicts. Than, after local population was completely ‘genocized’, slaves trade from Africa started to keep draining the soil and pumping European

states' coffers. The result of this kind of economy based on 'take and transfer' worked as an obstacle for the development of national industries and the formation of a local bourgeoisie. Indeed the Latin countries remained trapped in an economy exclusively based on the export of raw materials, being dependent on foreign countries for the supply of finished goods. First were the Spanish and the Portuguese, who had direct control of their territories oversea and provided to their colons what they needed. Then, after the independence process in XIX century, the British, who held the most powerful economy at that time, started monopolizing the market in the region. Thanks to the industrial revolution, products made in England were much more cheaper and competitive than the ones manufactured in the small industrial centers borne in Latin America. The Manufacture industry had borne spontaneously, to provide daily life goods, but it was completely crushed by the powerful intrusion of the British industry, finally free to operate in an open market due to the withdraw of Hispano-Portuguese control. Galeano quotes reports from that age British emissaries were sending back to London from Buenos Aires; they communicated with satisfaction that everything in Argentina, from shoes to gauchos' equipment, was made in England. Local industry had been completely overcome. The economy of newly independent South American countries was relying on the export of the products of their soil, with a society deeply influenced by the heritage of state handled colonialism: viceroys and their restricted clan were holding power, in a sort of medieval system based on landownership. Latifundiums were the symbol of an anachronistic society unable to compete on the globalizing market. Few were the ones benefitting from it, which generally corresponded to the ones holding political power, acting for the maintenance of the status quo. Galeano retraces scrupulously all the steps and the events of British and European exploitation of South American soil, which lasted roughly until the Second World War. Actors changed but the situation remained quite the same. United States influence gradually replaced the British one, with the establishing and protection of their multinational in Latin territories. At the time the author was writing, the United States was involved in the disastrous war in Vietnam. Galeano utilized extremely sharp words to describe the situation of his times and the circle of resources in the second half of the XX century. He writes: "Petroleum continues to be our world's chief fuel, and the United States imports one-seventh of the petroleum it consumes. Bullets are needed to kill Vietnamese, and bullets need

copper: the United States buys abroad one fifth of the copper it uses"[52]. The intent here is not to criticize US foreign policy, but to describe below which conditions some of the raw materials they imported were actually transferred to the United States factories. To protect their investment in the region, US government was usual to interfere in domestic political issues of Latin countries. Here, we will report just two examples to help understand Galeano's final conclusions. The list, however, is much longer. The first one is the golpe of 1964 in Brazil, supported by the Americans to get control over the iron mines in the valley of Paraopeba. Field Marshal Castelo Branco, which took power with force, alienated the strategic area to Hanna Mining Co. at extremely favorable conditions, after that both presidents Quadros and Goulart had been opposing the trade. Another emblematic case is the 1954 Guatemalan coup d'état, where the dictatorship of Castillo Armas replaced the democratic elected government of Jacobo Arbenz. The CIA, under the codename Operation PBSUCCESS, orchestrated the golpe. When Galeano was writing, the facts were still unclear, since the files of the intelligence agency had been de-codified only in 1997. President Arbenz had the intention of nationalize many infrastructures, and among them resulted on the list most of Banana plantations. The United Fruit Co., a US multinational, was highly affected by these policies, since it was entitled of great amount of land in the country. The company, to defend its interests, started an enormous campaign of propaganda against the Guatemalan government and exerted an intense lobbing to influence the US parliament to take action. Expenses for the operation amounted of about half-million dollars (Schlesinger et al. 1999). Foreign intrusion in domestic affairs in Latin America contributed substantially to the alimentation of a cycle of political instability in the region, with the effects previously described. In the decade following the publication of *Open Veins,* a series of economic crises occurred in many countries in South America, with Mexico, Argentina and Brazil experiencing different forms of public debt and currency crises. Hyperinflation was the rule, and growth was not achieved at all. The receipt to heal the illnesses of the Latin economies were given by the same actors responsible of the creation of the causes of such illnesses, meaning the United States of America. After the end of cold war, at beginning of 90's, Washington adopted a new policy towards developing countries, based on aids with the

[52] Galeano E. (1973 - Spanish Edition 1971), *Open veins of Latin America: Five Centuries of the Pillage of a Continent*, Monthly Review Press, Danvers, MA

collaboration of the International Monetary Found. The deal, however, consisted in a several of policies developing countries had to pursue in order to be enabled to benefit from such aids. Better, loans. The guideline for political reform were settled by what was generally called Washington Consensus, consisting in the application of privatization and opening of the market. The knocking down of custom duties was on the top of the agenda, so that foreign capital could freely flow into the interested countries. The countries that followed these directives did not end up well. Argentina also pegged its currency to the dollar trough a currency board, but dramatically fall bankruptcy at the end of 2001. The consequences were terrible for its population, and that was just to mention the worst case. Few years later, one of the drafters of the Washington Consensus pillars, Williamson (2004), claimed that it had been an error to try to import a whole model to countries with different cultures and background. Galeano finished his work quite earlier than the Washington Consensus era, but managed to conclude his book with concept that have not turned out of date. The permeating presence of foreign capital makes the South American economy being a dependent variable. Latin economy suffers a trap of low prices of the resources it sells, and the prices are low because the salaries workers gain are low; much lower than the one their pairs receive for the same job in the countries where capitals came from. Governments have little power of negotiations, since most of their workers are employed by foreign firms, which are able to take in check local administrations. At the same time, the European Union and the United States apply consistent custom fees to protect their output. However, now that the world is turning multipolar, Europe is in crisis and the United States do not exert the same influence as before, Latin countries have the opportunity to exit from this cycle of exploitation and build their own model for their next future. The will of redemption and achievement of a political and economic autonomy may serve as a spin for new policies to be implemented. That is why the area represents a fertile territory for the settlement of sustainable economics in a massive way. Indeed it became also politically attractive, since an energetic (and economic) independence means a substantial increase in the geopolitical environment. Politicians have the opportunity to increase the importance of their voice on an international level, and people could benefit of a substantial increase in well-being.

3.4 Abundance of resources

Until know, it has been said Latin America needs another economic system and that it could use sustainability to allow its countries to emerge as independent and important international actors. The third factor of opportunity here on stage is the same Galeano had addressed as the cause of South American plundering: the enormous quantity of natural resources on the soil. Other than traditional raw materials, the continent also enjoys huge quantity of water, sun and land, just to mention some of the natural factors important to power up sustainable policies. According to an article by FAO[53], Latin America is endowed with 12% of cultivable soil, 21% of forests and a third of sweet water of the world. It also owns two thirds of world forestry biomass that, joint with the previously mentioned characteristics, ensures to the continent an ecological *superavit.* It means that it produces biological material and absorbs human waste in surplus with respect to the demand of its population. Such a surplus gives to the continent a natural competitive advantage respect to other countries, which have to make huge investments in technology to absorb their impact on the environment. Still, these resources must be used in the proper way, and again according to FAO, utilizing the most advanced technology, South American countries could reduce their agricultural CO2 emissions by a farther 30% in short time. Brazil is well capitalizing on the gifts of its soils, being leader in the development of a clean economy, utilizing mainly biomasses and hydroelectric power. Still, many steps must be taken to proper use the territory and manage to distance from the trap of being just a raw materials exporting area. If minerals and fossil fuels had been resources that ended up condemning the continent to a condition of economic submission towards western powers, renewable resources could be the exit option from this circle of dependence. In addition, the abundance and variety of resources guarantees to the countries in South America an extremely important condition, resilience. Resilience, in this case, is the capacity of the ecological community (mankind, plants and animals) to bear distress. For instance, it is the possibility to adapt easily to the effects of climate change, allowing the populations of the territory to limit damages and losses. The abundance of resources is an opportunity, an

[53] http://www.fao.org/agronoticias/agro-noticias/detalle/en/c/210863/
América Latina y la sustentabilidad ecológica, 2013

advantage for Latin countries to turn to a fully sustainable economy, ensuring to its people better conditions of life.

It is the challenge of present leaders to guide this transition in a much better way than their colleagues in the past, who had been unable to lay the bases for a successful Latin capitalist economy. The question is how the features listed by De Soto that limited the development of capital economy, and the history of exploitation pictured by Galeano, could influence the transition to sustainable economics. Among De Soto's causes of capitalism failure in the region, one does not have a unique link with capitalism, but it is a general issue: informality. How can informality and the lack of insurance of property rights affect the implementation and execution of sustainable policies? How can the quality of institutions, generally speaking, influence the development of green, circular, knowledge and sharing economy? Will it be an obstacle? If yes, a total one or just a partial impediment? A case study will be used to find some tools to answer all these important questions. The quality level of the institutions in Brazil and the achievements in terms of sustainable policies will be the topics of the next chapter. Brazil is now world leader in the pursuing of a green economy and could be a pulling for the other Latin economies in the sector. Indeed it is also the main economy in the continent and the most populous country, with more than 200 million inhabitants. The Portuguese speaking country have been growing a lot in the last twenty years, since its currency problems of hyperinflation have been finally fixed with the 'Plan Real' at the beginning of the 90's. Brazil has been able to understand the limits of the Washington Consensus and to follow it just in some if its parts, succeeding in not to face bankruptcy like the Argentinean neighbors. Brasilia, differently from Buenos Aires, understood which were the limits of its economy and did not anchor permanently its new currency, the Real, to the American dollar. Indeed, in 1999, the Brazilian government switched the exchange regime from a fixed one to a mobile one towards the dollar. The government of Fernando Henrique Cardoso manages to understand in time that the Brazilian currency was overvalued and opted for a devaluation process. The switch of exchange rate regime had positive and negative consequences, which are not of interest to this dissertation, but had the overall result of preventing the country to face huge and disastrous crises. Still, despite a path of growth and modernization, Brazil encounters many internal controversies, with a wide part of its population who still lives in condition of

extreme poverty and degradation. Security is an issue and the efforts of the government seem not to produce sensible improvements in the fight against drug dealing and micro criminality in general. Prisons are overcrowded and many scandals of corruption have arisen in the last years of left wing government. The next chapter will provide a scheme of the main deficiencies at the institutional level in the country, and also a description of all the achievements in terms of sustainability carried out there. The fifth and last chapter of this dissertation will try to define if, and how much, do institutions weight in the development of a sustainable economics. The experience of Brazil will be of inspiration, a starting point, to draft general assertions on the topic.

CHAPTER IV

4.1 Brazil

This chapter will focus directly on Brazil, the main economy in Latin America, to try to understand how the potential of the territory can be exploited in a sustainable way. The choice fall on Brazil because, other than being a major economic country, and the biggest one in terms of population, it has been recently climbing the ladder of eco-leaders in the international scene. Brazil is now considered one of the main characters in the energy sector, the production of green energy in particular and of the protection of the environment in all of its complexity. It is also important to notice that the widest part of the amazon is under Brazilian administration, element not to underestimate. Indeed it gives to Brasilia the task to protect and preserve the lung of the whole world. Brazil seems to have taken seriously it role as eco-guardian and challenged all the external proposals of internationalizing the amazon under a *super partes* commission, made of a multinational team. The area remains fully under Brazilian control, and, to underline its stand, Brasilia started a series of green policies to highlights its commitment and accountability on the issue facing the international scenario. Still, the country holds many internal controversies, being domestic policy more than an issue for the government. Education, corruption, crime and violence are just some of issues current president Dilma Roussef has in front of her eyes during her second consecutive term. Dilma has been re-elected in 2014 in an environment of corruption scandals and the mysterious death of one of the three candidates to the presidency. Eduardo Campos died in a plane crush[54], few days before the first round of elections. It was considered to be the third in the surveys at that time, but his premature demises contributed to change the orientation of the game. Campos passed away flying alone in his private jet accompanied just by the pilots and the restricted crew. It was called to be an accident, but suspicion and perplexity dominated for many days the political scene. The incoming candidate Dilma, until then ultra-favorite on the others, started to lose ground and her position was exacerbated by the PetroBras scandal, a huge corruption scandal in the purchase by the national oil company of an oil well in the United States. This event will be further commented later on in the following paragraph. In fact, the chapter will be

[54] http://www.repubblica.it/esteri/2014/08/13/news/brasile_cade_eduardo_campos-93719583/

divided in two parts. The first one will be about the last achievements Brazil has accomplished in the sustainability sector; the energy sector and the eco-urbanization process shall be the two main policies carried out in the last years, which have been giving quite positive results. Especially in the field of electricity production, the country positioned itself as a leading actor in the arena of renewable sources users. The eco-city is more of a developing process, which has its area of application and experimentation in Curitiba. Urbanization is an extremely big issue in Brazil, with the presence of a great number of megalopolis, counting on million of inhabitants. Granting to its people decent conditions of life is the one of the next goals for the administration, and the challenges are not easy to tackle. Overpopulation in the cities is coupled with poverty and a regime of informal growing of urban areas. As described in the previous chapter, mobs are an issue, and obstacle the process towards the development of an eco-city. As far as administration is concerned, the second part of the chapter will describe the deficiencies of the public sector, analyzing three main aspects of the Brazilian institutional environment: corruption, education and the low level of property rights guarantee. It is interesting to compare how the central government is making good results in promoting sustainable policies, and at the same time local administrations struggle doing their job. On the side of a high level of corruption in all levels of the public sector, education policies do not stand at the same level as energetic ones do. Indeed, the country experiences a lack in high skilled labor force, being obliged to import part of it from abroad. In addition, basic education is not of high level and many obstacles still appears in the access to education. The public provision of the service does not perform well, with the result that who would like a higher level school must opt for private ones. Prices are not cheap, so that lower classes hardly ever can afford to send their children to good middle and high schools. The result is that poor people are not well prepared to college admission tests falling in a spiral of cultural degradation. Finally, the environment of informality, especially in the favelas, has been a main obstacle in the transformation of assets into capital, and now it could be a barrier in the development of sustainable cities. The interaction between institutions and sustainability will be then engaged in the conclusive chapter of this dissertation. Now, focus goes back on sustainable economics and the achievements of Brazil in the last decades.

4.2 Energetic sector in Brazil

According to Alcoforado (2012), Brazil is the tenth consumer of energy in the world, and of course it is the first one in Latin America. A 200 million inhabitants state clearly has a considerably high demand of energy, even though its per capita consumption is still low compared to OECD countries, but equivalent to the one of China. This means that a further development of Brazilian economy would entail an increase in the demand for energy, underline the need to grow in a sustainable way. Demand for energy in the country is already growing more than five percent per year, and if the supply were to be all provided by fossil fuels the result would be catastrophic in terms of greenhouse emissions. The Brazilian arrangement – reminding that Brazil is a federal state – for energetic studies and planning is structured in an extremely complex way, comprehending more than eight different institutions among governmental departments and agencies. Alcoforado lists the following: Conselho Nacional de Política Energética (CNPE) with the task of making proposals about the energetic sector to the president 2) Ministério de Minas e Energia, which creates the normative, and gives execution to federal plans and energetic policies in general 3) Secretarias de Planejamento e Desenvolvimento Energético, de Energia Elétrica, de Petróleo, Gás Natural e Combustíveis Renováveis, which is the secretariat related to energetic sources 4) Empresa de Pesquisa Energética (EPE), which has the objective to carry out research and studies in the sectror, in order to orient the planning of the relative policies. The Brazilian government also has some regulatory agencies, such as Agência Nacional de Energia Elétrica (ANEEL) e a Agência Nacional de Petróleo, Gás Natural e Biocombustíveis (ANP); other than a commission on nuclear energy (CNEN) and a department on mining industry (DNPM) as advisory boards. Before moving to the policies implemented in the last years, it might be useful to provide a brief history of energetic administration in Brazil. Traditionally, the state has always held the monopoly of energy production and distribution. The orientation of the government changed at the turn of the 90's with the Itamar Franco administration, followed by its successors Fernando Henrique Cardoso and Lula Da Silva. In the 90's, in agreement with the instruction from Washington, it was developed the Plano Nacional de Desestatização (PND), the national plan for privatization, aiming at transferring to the private sector the management of all those activities that the public was not dealing efficiently with. The energetic sector of course was one of the

most affected by the new plan. In 1997 it was also passed a law[55] about the liberalization of energetic competition. Until that moment, PetroBras, the national energetic company, was holding the monopoly in the exploration, exploitation and distribution on national soil. PetroBras is now a multinational leader in the energetic sector, expanding both nationally and internationally. Oil is clearly the main resource of interest for the company, which is making important investments also in advertisement, becoming sponsor of the Williams team in Formula one Gran Prix. The company is a semi-public one, with the federal republic of Brazil owning the 32,22 of the shares and being entitled of 55% of voting seats. Basically, PetroBras remains a state owned company, but it has to win its quote of market facing a liberal competition with foreign companies. In any case, the government and its agencies are the main characters in the planning of energetic policies in the country, which despite having being opened to competition, is still highly managed and influenced by public active policies. Mauricio Tiomno Tolmasquim (2012) explains that every year the EPE releases a ten-year plan (PDE), focuses on determined cases important to develop to promote improvements in the production of energy, following criteria of sustainability. The plan is related mainly to electricity generation, that as we will see, is one of the 'greenest' in the world. "The main objective of the PDE is to prioritize the share of renewable energy sources for the country to meet the increase in electricity consumption within a ten-year horizon"[56]. Right now, one of the main sectors in terms of green production of electricity is represented by hydroelectric power plants. According to an Aneel report (2008)[57], is the second consumer in the world of hydroelectric energy and the world second country in terms of impact of hydroelectric sector in the overall production of electricity. Indeed, in 2006, the weight of hydropower in the generation of electricity was of about 83,2%, widely overcoming traditional sources of energy such as carbon and oil. Still, Brazil is just taking advantage of just the 30% of its known hydro potential, showing great space for improving its performance and keeping increasing the impact of green sources in energy production. In addition, most of its potential is still not on the records, with many

[55] Lei Nº 9.478, De 6 de Agosto de 1997
[56] Tolmasquim M.T. (2012), *The Energy Sector in Brazil: Policy and Perspectives*, estudos avançados 26 (74), 2012 249, p.252
[57] Atlas de energia elétrica do Brasil / Agência Nacional de Energia Elétrica. 3. ed. – Brasília : Aneel, 2008.

areas of the countries that have not been subject of studies yet. The areas with greater availability of hydropower are the amazons, but also the southern developed regions and the northeast. In this last region, where poverty is widespread and people struggle to find jobs and hope for the future, the installation of new plants can also be an opportunity to grow and improve quality of living conditions. In fact, Brazil still has problems in the distribution of energy on its immense territory, with many rural areas not covered by electric energy provision. Getting to these peripheries is one of the short-term objectives for the government, aiming at stimulating the economy also in such locations. The creation of plants and the possibility to vast scale production of energy directly on the territory could counterbalance the difficulties in building an efficient distribution net, limiting dispersion and differentiating stations of generations. Most of the plants, however, are still in the South, which already is the most developed region in the country, even though three of the largest plants take place in the north and northeast. To overcome this issue of disequilibrium in energy supply in the country, Tolmasquim (2012) reports that "the length of the national Grid of 100,000 km in 2010 will increase to approximately 142,000 km in 2020. This means that the equivalent to almost half of the current transmission system will be built in the next ten years. Much of this expansion will come with large transmission trunks associated with the interconnection of plants in the north Region - including Jirau and Santo Antonio on the Madeira River, and Belo Monte - with the rest of the country"[58].

Going back to energetic general policies, the Brazilian government has launched in 2007 a national energetic plan for the period 2007-2030, setting guidelines for energetic development and targets for the final year of the plan. The plan has the aim to expand the energetic sector, to limit any dependency from abroad, running for auto sufficiency. Alcoforado (2012) says that the objectives of the government are to expand the energetic sector according to the following numbers:

1) Renewable sources – 191,35 GW (gigawatt) (92 GW already existing in 2010);
2) Conventional Thermoelectric – 21,5 GW (16 GW already existing in 2010);
3) Nuclear – 8GW (2 GW already existing in 2010). 1 GW

It seems clear that according to these projections, the renewable sector is the most stimulated to grow, aiming at more than doubling its provision of electricity. Will the investment be all pointed on hydroelectric power, or will they be redirected and

[58] Tolmasquim M.T. (2012), op. cit. p.254

differentiated to other forms of sustainable sources? According to the already mentioned EPE ten-years plan, if in 2010 75% of the electric supply was granted by hydropower and only 8% by other renewable sources, in 2020 SHP, Wind and Biomass will double their impact, going from the 8% to 16%. If thermoelectric and nuclear will stand still on 15% and 2%, hydroelectric will lower down to 67%[59]. Water still remains the main source of production, but sugar can and wind will make consistent progresses in their contribution to electricity production. Indeed, the construction of new hydroelectric power plants has been facing huge opposition, since it is considered to affect negatively the ecosystem and the indigenous population especially in the amazon area, although it is a source completely CO2 emissions free. This might be one of the reasons why the priorities of the government have slightly changed, but one thing remains clear considering renewable sources: solar energy is scarcely taken into account, being biomasses and wind more efficient on the Brazilian soil. Still, the reduction of the impact of hydroelectric sources is just relative, since the global output of electricity generated should go from 110 GW to 171 GW. Anyhow, both according to the ten-years EPE plan and to the to the national energy plan for 2030, renewable sources will act major roles in the production of electricity in Brazil. The concern the country has towards the preservation of the environment and the generation of green energy is of avant-garde, and should be of example for other countries in the world and in the area, being that other Latin countries may share similar issues and situations generally speaking. For instance, Latin America overall, produces 21% of the hydroelectric energy in the world, following the locomotive Brazil. Moreover, South American countries, are certainly closer one to the others culturally speaking, and may better share experiences and models. That is why a successful model in one of these states, being Brazil the most advanced one, is important to show the way to the others, demonstrating that is possible to develop an economic system independent from the west, and different from Chinese state-driven economy. The road has still many miles to be travelled, but the engine has been started and the path revealed.

However, if in the sector of electricity production Brazil depends by an 83% on renewable sources, the situation changes drastically when we talk about energy in general. If we get to consider fuels, industrial and agricultural production and

[59] *Ivi,* p.253

households' consumption, the data change dramatically. 52% of energy supply is due to fossil fuels (38% oil, 9% natural gas and 5% coal), while hydroelectric power contributes to just 15% and other renewables of 4%. What is surprising is the 18% performed by sugar can products, which are now increasingly used as fuels. Sugar can products are considered to be green fuels, and their involvement in the economy is extremely high. Oil impact on the energy supply in Brazil may seem high if compared to the previous data on electricity production. However, if we take into account world average, it appears how green in Brazilian economy, despite half of its supply is given by fossil fuels (plus a 10% obtained by wood). According to international energy agency (IEA) report of 2014, on a world scale, 81.7% of energy supply is provided by fossil fuels (oil 31.4%, coal 29%, natural gas 21.3%). Truth is that many countries are making any efforts in greening their economies, either because they do not have possibilities or because they are showing no will. By possibilities, we mean technological and economic opportunities to invest in green economy. So, let's take a look on OECD data on energetic supply, considering just the group of most advanced countries on the scene. The impact of fossil fuels is pretty much the same (81.4 oil, gas and coal combined) to the world one. In last thirty years the trend has been positive, and if we consider data from 1973, fossil fuels percentage on energy supply has lowered by a good 6%. However, the overall production of energy has more than doubled, making that 6% quite a non-influential number in the whole context[60]. Efficiency has grown but, as shown in the first chapter, general emissions kept increasing, showing a necessity to turn green. Brazil is doing it extremely well in comparison with the rest of the world, taking the best from its resources, and developing also new technologies in a competitive market dominated by fossil fuels and oil companies. In any case, this does not mean Brazil has completely abandoned the exploitation of fossil fuels, also investing a lot of resources in research and development in the sector. Petrobras efforts to explore the soil and the new available technologies, allowed Brazil to become one of the major actors in oil production, being at the top for reserves. The new discoveries allow the exploitation of the pre-salt layer, extremely rich of petroleum in the costs of Africa and Brazil. It was not until recent times that it appeared the possibility to drain also this layer of the soil and increase considerably oil production. Will the consistent rise in oil reserves change Brazilian energetic policies, renouncing to

[60] data from Key World Energy Statistics, 2014, IEA

pursue the implementation of green energy? According to Tolmasquim, "In 2020, about 50 percent of the country's production will be earmarked for the international market, allowing the country, on the one hand, to reap the benefits of the large revenue from oil exports, and on the other to avoid the burden of increasing the share of fossil fuels in the domestic energy mix"[61]. Half of the oil production will be then delivered to export, without changing current strategies, rather with the opportunity to gather pecuniary resources to invest in other sectors of the economy. In fact, it astonishes how much impact biofuels have on Brazilian economy, allowing the population to save money in the purchasing of fuel for their vehicles, and also permitting to the state to export part of its oil augmenting national revenues – reminding that PetroBras is partially state-owned. Ethanol, produced from sugar can fermentation, is the green fuel introduced in 2003 in Brazil, which had incredible success among the population, reaching unexpected market results. Tolmasquim states that eight years after its introduction, 49% of light-duty vehicles in the country run on (flex-fuel) ethanol, and by 2020 the percentage is expected to reach 78. Ethanol is not used purely, but blended with gasoline. First fuels made with this technology were E10 and E15, where the number stands for the percentage of ethanol in the blend. The last achievement is E85, also known as flex-fuel, consisting in a blend containing from 51% to 85% of ethanol[62]. The data Tomalsquim refers to in the quoted statement consider vehicles running on flex-fuel, so a last generation and more advanced product. "For the next ten years, the demand for ethanol in the Brazilian market will continue to grow, due to the significant expansion of the domestic fleet of flex-fuel vehicles and the high competitiveness of hydrated ethanol prices in relation to gasoline, despite its restricted supply in the short-term"[63]. This kind of technology allows to reduce oil consumption, CO2 emissions and also to save money, being the price of ethanol lower than traditional gasoline. This kind of improvements have also been introduced in the United States, where E10 and E15 are available, but the amount of flex-fuels vehicles is still not as relevant as in Brazil. However, the Brazilian successful experience might of inspiration also for the most advanced country in the world, which of course is leader in consumption of energy. If the million of US drivers started to drive flex-fuels cars it would be a great achievement

[61] Tolmasquim M.T. (2012), op. cit. p.256
[62] https://www.fueleconomy.gov/feg/ethanol.shtml
[63] Tolmasquim M.T. (2012), op. cit. p.258

for the environment and for their pockets. Ethanol diffusion is an example of economically attractive green technology, cheap and easy in the production and therefore competitive on the market. Car industry recognized the new needs of its customers and the possibilities this new fuel enhanced, adapting their production with vehicles able to work through flex-fuel. The transition cannot be quick, a distribution net must be set up and the customers have to gradually get in touch with what is new. The response of Brazilian economy has been excellent, and now the country is internationally seen as leader in the sector.

Finally, self-production is the last energetic policy studied in this paragraph. It consists in a system of individual generation of electricity and in the development of micro distribution nets. The aim is to produce energy in rural areas and in areas where it is difficult to deliver electricity. According to a WWF report (2012), the government has launched a program, called 'luz para todos' (verbatim light for everybody), to finance the 85% of the cost of energy self-productive installations. This kind of financing is not restricted to specific targets, but both industrial sector and households are valid targets. The objective is to allow self-production of energy for factories, in order to cut expenses, but also to allow households in rural areas to enjoy the benefits of electric energy in their homes. It might seem taken for granted to have electricity in every house, but still in some areas of Brazil distribution is an issue. That is why self-production is fomented, in order for people to have electricity and for the state not to face huge costs in the construction of long lines for electricity transportation. It is a win-win situation, for the state, for its citizens and for the environment, since the aim is to stimulate sources of renewable energy alternative to hydropower, mainly biomass, wind, but also photovoltaic. The output of self-produced electric energy has doubled in the period 2001-2009. Another program launched by the Brazilian administration is the so-called Proinfa. Created in 2002 and active from 2004, Proinfa had the aim to stimulate small energy producers, which of course utilized renewable sources. The program wanted to foment the installation of wind, biomass and small hydro plants (SHP), through a system of credit and feed-in tariffs. The national bank for social and economic development (Banco Nacional de Desenvolvimento Econômico e Social - BNDES) will have the duty to cover the 70% of the investment. In addition, Eletrobras, the major electric company in Brazil (state owned in its 52%), signs a 20 year contract with the beneficiaries of the program, purchasing the electricity generated at a

fixed price. The plan envisioned the installation of 144 plants, making the renewable energy sector more competitive in Brazil. Concluding this part on energetic development, the country has shown to be an international leader in the production and consumption of green energy, developing new technologies and diversifying its investments both in the resources used, both in the methods of exploitation. Huge hydroelectric power plants are promoted joint with micro plans for self-production and small production of electricity, addressing different layers of the population. In the sectors of fuels, Brazil is even more advanced, experiencing the spreading out of flex-fuels, an exceptional achievement also in world scale. On the other hand, the narrow majority of energy supply is still given by fossil fuels, and oil remains vital in the country's economy. However, compared with world data and to most advanced economies, Brazil proved to be an example in implementing green energetic policies. Still, the resources the country can rely on, allow great space for maneuver, with excellent possibilities to keep greening its economy and take the best from its rich soil. Anyway, sustainability is not just energy, it is also management of the territory and much more. In the next paragraph we will travel through the streets of Curitiba, the capital city of the state of Paraná, known as the most sustainable city in Brazil.

4.3 Sustainable cities: the Curitiba experiment

The city is the center of human development, a factory for innovation, opportunities and leisure, but mostly, is the place where most of people settle their life in this century. By 2030 is expected that 80% of world population will be living in urbanized areas[64]. Situation in developed countries' metropolis will not be considerably different, without many changes in population, rather urbanization in developing countries will continue on a fast pace. Urban population in developing countries is expected to go from 1.9 billion to 3.9 billion in the period the goes from 2010 to 2030 (Allen 2009). If developing countries thought they had seen it all, they proved them wrong. The urbanization process, described by De Soto, is yet to be over, and it will sharpen troubles and negative effects if not well handled. New waves of 'colons' are moving to already immense cities, which struggle to enable decent conditions of life to many of their inhabitants. Industrialized countries will

[64] Lopes A. et al. (2010), *Cidades Inovadoras Curitiba 2030 - Todos Pelo Bem-Estar*, SENAI - Departamento Regional do Paraná

not have to face an increase in their urban population, but this does mean they shall not have to deal with the effects of poor urban quality life in already overcrowded urban areas. According to Allen (2009), "Rapid urbanisation is arguably the most complex and important socio-economic phenomenon of the 20th and 21st centuries. Generally understood as a shift from a predominantly rural to a predominantly urban society, it also represents major and irreversible changes in production and consumption and the way people interact with nature"[65]. The urban environment stays at the center of the sustainability process, since the quality of the place where people live is focus to achieve that growth in well-being sustainability has as its main objective. A sustainable town is not just related to energy and eco-system, but has a lot to do with all the aspects of people life. Sustainability should surely be ecological, but also social and economical, ensuring good working conditions and availability of leisure time for instance. The characteristics of a sustainable city will be farther examined, in the context of middle term planning for better urban environments, taking the example of the Brazilian city of Curitiba. Another controversial aspect of what a sustainable city must include is related to political sustainability. The idea is extremely broad, but it might be synthetized in the form 'citizenship participation'. Still Allen considers it as the regulator frame for the other aspects to be well functioning, a sort of surveillance and guarantee tool. However, participation might be active, deliberative, or just of simple acknowledgment people must have to better express their preferences when it is time to vote. In the history of liberal thought, many have introduced the idea that political participation is necessary for human individual flourishing, but how much is it important for a sustainable development of an urban area is hard to tell. It may vary depending on the political culture of the country in question, being seen more or less relevant to citizens of different states. What is sure is that participation in the society is necessary for the flourishing of the individuals and of the community, but how much this participation must be interrelated and interconnected with political life is extremely hard to picture. Allen's suggestion is particularly interesting, seeing it as a container for the sustainable development of the urban environment. But is it the only possible container? First we will see the achievements in Curitiba, analyzing the Brazilian

[65] Allen A. (2009), *Sustainable Cities or Sustainable Urbanisation?* UCL's journal of sustainable cities

experiment, then, in the last conclusive chapter, we will go deeper in the field of political participation.

In 2010, in Brazil, it was launched a program on the base of the 'cidade inovadora' (innovating city), about facing the imminent urbanization wave trough a process of innovation of its cities, aiming at creating sustainable environments. The plan starts with a twenty years program based in the city of Curitiba, called Cidades Inovadoras Curitiba 2030 - Todos Pelo Bem-Estar (innovating city Curitiba 2030, everybody for well-being). The main character in the development of this plan is neither the environment nor the eco-system *per se.* Rather, the plan is centered on people. In the report is expressed on important difference between a regular city and an innovating city: what will change is the quality and the condition of the people living and building those urban environments. Citizens of the innovating city must not be audience any more, they should stop to be subdued an oppressive routine, struggling for survival everyday. Here the world survival must only be taken metaphorical, addressing purposes of lives and self-fulfillment, but as far as we refer to developing countries, it must also be understood in its literal meaning. Sustainability in the outskirts of most of Latin metropolis goes over western (important) urban problems of alienation from reality and detachment from the world, but it is a matter of ensuring the basic condition for the enjoyment of decent life. Travelling two or more hours in poor quality public transportation vehicles to earn the minimum salary, impediment in opening a business, fear for own security in day and night time are some of the serious issues Brazil, and all developing countries, will have to face in their plans for sustainable cities. Along with improvements in social aspects of life, the environment of course shall be addressed, in the design of the city, in its infrastructures, in its organization. Sustainability in a city is sustainability *tout court,* including all the aspects of the concept, with the direct goal of improving people's well-being. If the cities are sustainable, then the world will be sustainable.

As said before, the twenty years plan started by the Brazilian administration develops in the city of Curitiba, the capital of the state of Paraná. It is the eight biggest city in Brazil with a population of 1.751.907 people, which reaches the important amount of 3.172.357 inhabitants if we consider the 26 municipalities

constituting the metropolitan agglomeration[66]. The choice fall on Curitiba because it has always been considered one of the most advanced cities in the country, with an high level of care for urban planning and for the environment in general. It also performs really well in the provision of general services, such as electricity distribution, potable water availability and education. Indeed, according to the Curitiba 2030 plan, 99.60% of the households have benefit of potable water, 99.54 of collection of waste, 85% are directly connected to sewage and the electric net reaches 99.00% of them. Connectivity is also of a good level, with 74% of the houses enjoying a fixed telephone line and 77% of the citizens own a mobile phone. Curitiba also has the lowest rate of illiteracy and the best basic education in the country. Due to such data, although it is probably the easiest place in Brazil to implement a sustainable plan, the Paraná capital can equally be an excellent hotbed for the development of a modern city, being of example both in Brazil and abroad. Other than good starting conditions in the general fields previously mentioned, Curitiba has a long traditional of excellent performance in sustainable mobility, promoting an extremely sophisticated net of public transportation since the seventies. To be precise (De Freitas Miranda 2010), the process started in 1974, when the city had just to express lines and eight supportive lines, counting only on two terminuses. The situation has kept evolving, now there are twenty-one terminuses and a metropolitan coverage, linking all the areas of the city. The city was the first one to introduce preferential lines for public vehicles and also entire streets reserved for buses and other public transportation. In addition, important efforts have been made in building sidewalks, allowing pedestrian to circulate safely. Moreover, administrations in the last decades have also been capable to create full pedestrian areas, with zones of the city where access to traffic is completely restricted. The aim was that one of incentivizing people to live their cities, to share public spaces, which have been devolved to the promotion of events, markets and exhibitions. Such achievements may seem not so relevant for a European reader, accustomed to live in these kinds of cities since birth, but Curitiba's experience has been extremely innovative for South American tradition, and quite all the other metropolis in the region are a clear example of it. Buenos Aires, for instance, because of its history and the culture of its people, has always been a 'city to walk'.

[66] Estimativas da população em 2010, *http://www.ibge.com.br/home/estatistica/populacao/censo2010/tabelas_pdf/total_populacao_parana.pdf*

Public transportation runs 24 hours a day, it is cheap and very used for local people and visitors. However, the installation of reserved tracks for buses is something new, which has been developed just in the last decades, with the introduction of the so-called 'metrobus'. It is a sort of metro running outdoor on regular streets, whose access has been restricted to public transport. Differently from regular buses, access to the vehicle is trough covered stations, similar to metro station, where a ticket is needed to get in. in addition, there are physical barriers for private means of transportation to get in the preferential lanes. This digression was useful to underline the great efforts made by Curitiba and the real grade of innovation performed by the Brazilians forty years ago. Unfortunately, the great modernization of urban transportation in the Paraná capital city has not been followed by the development of similar projects in other parts of the country, if not in recent years. Traffic jam and mobility are a real issue in Brazilian megalopolis, with a public service not efficient at all. Still, possibilities are high, especially for underground development of metro lines, being most of the cities lying on perfectly level soil. In addition, in South America there are not the same problems Europeans face in going underground: in Rome it is extremely likely to find ancient ruins when digging, being it a real obstacle for the development of city metro lines. Investments and planning are required to develop good public transportation lines in South America, given that geographical and historical impediments are out of the scene. Curitiba is the example that in Latin America an efficient and modern mobility net can be developed, connecting all parts of the city and its periphery. 'Tube stations' are typical in the Paraná capital, access points similar to the one described when picturing the Buenos Aires example, but also equipped with stations to allow access to disabled people. Curitiba performed extremely well in the development of his public transportation lines getting inspired by the European experience, and modeling such experience to its geography, characteristics and culture. Today, following the Curtiba 2030 plan, it could be of inspiration for Europeans and cities of all over the world, for the promotion and development of a sustainable urban environment. According to the plan, the city of the future (that, in line with the description, corresponds to the city of the present) will have to face many challenges. Aging of the population, loneliness, health, multiculturalism, digitalization and new kind of jobs are just some of the feature of XXI century cities. New concepts, such as glocalization are coming out, with the uneasy challenge of

staying connected to the world, but at the same time being able to maintain local customs and habits. The markets have been adapting to innovation and administration will have to adapt as well to satisfy citizens' changing needs. In the last pages of this paragraph we will describe the seven purposes the plan lists for the development of a sustainable city, a mix of goals to achieve and actions to undertake to reach such goals. The starting point leaves us with good optimism, but other cities cannot wait twenty years to evaluate the Curitiba experience to draft their own plans for sustainability. Planning is the starting point to settle a coherent path of actions, execution must follow. Five years are not enough to evaluate results in Curitiba, but the intentions look more than positive and worthy to be reported.

The seven topics to be developed towards sustainability are the following:

- Administration;
- Interconnected city;
- City of knowledge;
- Transportation and mobility;
- Environment and biodiversity;
- Health and physical well-being;
- Life in a multicultural and global city.

Administration transformation shall follow the concept of New Public Management, with an evaluation of public bodies similar to the one companies face in the market. Accomplishment of objectives and satisfaction of the clients (citizens) will be the two important indicators in this transformation. The tools for the implementation of such management are diverse. First thing is the creation of a platform for open data and open government, so that citizens have access to all the information related to public activity. In addition, thanks to new technologies, citizens can express their judgment of administration actions on the platform. Moreover, the public sector will work hard to make people informed about what it does, trough forums and possibilities of stage in its offices. The idea is to create a constant connection between people and who rules them, having the possibility to question and challenge the conduct of the latter. Evaluation must work as a stimulus for public officers to better do their job, creating a system similar to what competition

is for the economic market. Communication and transparency are the key features to make this possible.

The second point is related to the establishment of a net of connections among people. Technology of course is extremely important in this process, giving the possibility to get people in touch. The objective is that all the population in Curitiba can have access to the internet, ensuring investment in the creation of ad hoc infrastructures sharing responsibilities and burdens between the private and the public sector. In addition, programs of formation of a new class of workers, experts in information technology, are both a tool and an objective to increase interconnection in the city. According to this principle, access must be guaranteed to everybody, enabling also elderly people to learn or to be helped using their electronic devices. In fact, many services are now digitized to improve efficiency, and it is also a right for who does not have IT competences to benefit from it. The plan also talks about the possibility to develop creative commons, according to the principles of knowledge economy listed in chapter two of this dissertation. The most important thing of interconnection is the possibility of knowledge sharing, without forgetting the beauty of human direct relations. The Internet is an opportunity, like the plan says, to improve business trough e-commerce and other forms, but it does not replace human live and real relations.

The third point is directly related to knowledge, with the obligation of making important investments in education. The program is to settle a laboratory to study educational trends and improve R&D in the sector. Schools become central in the developing of this goal, turning them into environments to live after the academic hours of class. Sport, activities and laboratory must be proposed to fully accompany kids in their growth. The idea is to create a class of cultured people, who can then produce and deliver culture in the field they became experts of. As far as the creation of a cultural leading class is concerned, a statement from Mujica, former Uruguay President, comes to my mind. In a 2009 meeting he organized for the development of his country, he invited scholars and experts in many fields, from engineering to music, from economy to agriculture, etc. He affirmed that is dream was to use the stadium 'Centenario' to host the next meeting, due to the enormous quantity of cultured people Uruguay will have. Finally, along with the generation of a well-educated population, it will be fundamental to allow to the new-formed people

to stay in their city, having job opportunities, without the risk of all the know-how migrating.

Regarding public transportation, the city has good backgrounds as previously described, but the whole structure. The idea is to create rings like in European cities, like Madrid, and to expand the service with new lines, in order to reach all the neighbors of the city. Along with traditional public service, it will important to build bicycle pathways, also providing services of bike sharing. The global quality of the service should be good enough to discourage citizens to take their own vehicles, which must stay as last option. In addition, rules on vehicles maintenance and laws on circulation must be enforced, also increasing the number of police officers and cameras for public security.

The fifth priority is directly related with the environment. It is basic to make people aware of the necessities of the eco-system, promoting campaigns for recycling and the reduction of consumptions. It will important to gather financing for research and implementation of public policies in the field, especially the improvement of the 'urban outfit'. Establishment of parks and activities of urban gardening will be promoted, other than the recovery of dismissed infrastructures, such as squares and lighthouses, which will be turned into dedicated spaces to the spreading of knowledge related to sustainability. Finally, in the designing of a sustainable city, green energy and be required and the use of renewable sources highly incentivized. City lamps running on solar energy are an already existing example. As far as circular economy is concerned, companies operating in the territory of Curitiba should adopt internal policies to re-insert into the economy their industrial waste.

Health is the following topic in the Curitiba 2030 plan. Last generation infrastructures must be delivered to the citizenship, counting on most advanced technologies and high-skilled personnel. Information campaigns will be important to help prevention and to give the population the tools to take advantage of all the new services the city will provide.

Finally, the citizen must acquire a feeling of belonging, of interconnection with the city. Every inhabitant of the innovating city will feel it as if it were of his personal belonging, working hard to improve and to preserve it. Respect of diversity and of human rights in general must be shared common values, developed in stimulating multicultural environment.

In seven, precise, priorities the plan works as a guideline for the development of any of the cities of tomorrow. It does not have any practical response yet and it could appear quite utopian. However, the objectives set are extremely clear and they could be really realized in practice. What could be considered utopian is the time-limit, with many changes and innovation to be done very quickly. With regards to this last issue, I would like to conclude the paragraph with a quote by Galeano:

"Utopia is on the horizon: When I walk two steps, it takes two steps back. I walk ten steps, and it is ten steps further away. What is Utopia for? It is for this, for walking"[67].

4.4 Institutions deficiencies

If until now we have shown all the positive aspects of Brazilian race to sustainability, the time has come to give a look to the reverse side of the coin. What are the limits of the country, which challenges does it have to face in the following years and how its institutions are performing will be the issues analyzed in this last paragraph. In particular, three main problems will be taken into account, to give an overall picture about the situation in Brazil. Giving just three features is useful to simplify the process of analysis and to evaluate their possible impact on the development of sustainable economics. The three chosen issues are: corruption, education and the guarantee of property rights. These three indicators can broadly embrace the quality of the political/administrative system, the quality of leading class and the awareness of the electorate, and finally the challenges for the private sector in doing business in Brazil. Below, data and info will be provided, leaving the comments of such numbers on the impacts on sustainability to next conclusive chapter, balancing them with the achievements described in the previous paragraphs.

First issue to be tackled is corruption. According to the corruption perceptions index, Brazil scores 69th among the 175 countries rated by the Transparency International Organization. The index evaluates how much the public sector is perceived to be corrupted, working on a scale from 0 to 100, where 0 means highly corrupted and 100 means extremely clean. Brazil score is of 43, the third result after Uruguay and Chile (73) in South America (excluding central America and the

[67] Galeano E. (1993), *Las palabras andantes*, Siglo ventiuno de Espana, Madrid

Caribbean). Interesting is that the cleanest state in the world is Denmark (92) and the most corrupted Somalia (8). Just to visualize better the meaning of Brazilian score, it performed exactly like Italy, which is the most 'dirty' country in Europe, joint with Romania, Bulgaria and Greece. The last comparison is with the United States, whose score is of 74, just one point more than Chile and Uruguay, highlighting the important performance of the other two Latin countries[68]. Going deep into Brazil analysis, the organization on transparency makes some further comments on the domestic situation of the country. It reports that in the period going from 2003 to 2012 more than 4000 employees have been fired from public service because of issues of corruption and dishonesty. In addition, according to a 2009 survey, 70% of entrepreneurs define corruption and bribery the main obstacle in doing business in Brazil. The huge bureaucratic structure, made of many agencies and departments, probably has been structured in such a complex way to enable a system of crosschecks. Unfortunately, it resulted to slow down any administrative proceeding, allowing bribery to become a main character on the scene. Politicians are not out of the game either, and probably they represent a huge top of the iceberg. In 2011 two parliament members were forced to resign and a scandal also involved president Dilma Roussef cabinet[69]. Here an extract from a NY times article of September 20th 2010: "Erenice Guerra, the former right-hand woman of Ms. Rousseff, resigned Thursday amid a flurry of local news reports accusing her of trafficking in influence under Mr. da Silva's nose. Ms. Guerra, they contend, took part in a lobby run by her son that helped businesses gain access to contracts and state bank loans for public works projects in exchange for money — some of which was reportedly intended to help finance political campaigns"[70]. Politics has always been on the spotlight in Brazil and its relation with financing is not too clean. Brazil does own a regulatory law, which does not limit any financing to parties. However, financers should be put on paper, but only in a final report after elections. The transparency international organization believes this system may foster under the counter transaction and hiding of money in general. Now we will see the last, and probably the most important scandal Brazilian politics had to face in its history, the Petrobras affair.

[68] http://www.transparency.org/cpi2014/results
[69] http://www.transparency.org/country#BRA
[70] http://www.nytimes.com/2010/09/21/world/americas/21brazil.html?pagewanted=all&_moc.semityn.www&_r=0

Everything started with the arrest of Paulo Roberto Costa, Petrobras's refining division from 2004 to 2012. In 2014, shortly after the presidential elections, Costa decided to talk and share with the prosecutors all the details of money laundering and money kickback in the political system, related to the biggest energy company in Brazil. The company is partially state-owned, but it appeared that relation with the public sector did not happened to end in mere property issues. Costa "has accused more than 40 politicians of involvement in a vast kickback scheme. The list reportedly includes a minister, three state governors, six senators and dozens of congressmen from President Dilma Rousseff's Workers' Party (PT) and several coalition allies. The beneficiaries are alleged to have pocketed 3% of the value of contracts signed with Petrobras in return for supporting the government in congressional votes"[71]. Along with this well-established routine, another major issue came out from investigations. PetroBras in 2006 purchased a refinery in Pasadena from the Belgian group Astran Oil. The Belgian acquired the field for 42.5 million dollars, but one year later PetroBras paid 1.2 billion dollars[72] for it. In practice, every purchase made by Petrobras is authorized by the state, which has more than 50% of voting capacity in the directory board. Basically, the money Petrobras spends is public funds, weighting on the pockets of taxpayers. The scandal is extremely important because it appears that part of the money allocated to buy the refinery had not been used for such purpose, but rather utilized in the kickback process, ending in the hands of the same politicians who indirectly allowed the transaction. The party involved was president Dilma workers party, which received a hard hit right before elections. The whole amount of money of the inflated contracts was redirected to the workers party and their allies, also financing the electoral campaign[73].

Main rival Aecio Neves (PSDB – Brazilian center-right party), called it *mensalão* 2. *Mensalão* signifies big monthly stipend, and it refers to another scandal involving the working party (PT) in 2005, when at that time former president Lula Da Silva leaded it. It was "scheme that operated from 2003 until it came to light in 2005, the PT paid a monthly bribe to congressional allies in exchange for their votes. The scandal hurt the government of Luiz Inácio Lula da Silva, Ms Rousseff's

[71] http://www.economist.com/blogs/americasview/2014/09/scandal-brazil
[72] http://www1.folha.uol.com.br/infograficos/2014/09/114361-escandalo-na-petrobras.shtml
[73] http://www.theguardian.com/world/2014/dec/12/petrobras-scandal-brazilian-oil-executives-among-35-charged

predecessor and political patron, and landed some of the PT's leading lights behind bars"[74]. The repeating scandals involving parliament members and people of presidential staff have the effect to discredit the entire Brazilian political system, highly stroke by corruption activities. If the top is not clean at all, it is difficult to imagine that lower administration perform differently from their leaders, detaching themselves from a bad widespread custom. People's trust towards political institution is extremely low, and many find themselves disillusioned and resigned to the idea that corruption will keep being a major issue in the country.

The next topic treated is education. Basic education is guaranteed, UNICEF data report that general adult literacy is 90.4% in the period 2008-2012, but when we come to talk about new generation statistics are much better. As far as men are concerned, in the age 18-24, literacy rate is 96.7%, while women perform even better with a 98.3%[75]. It is hard to tell the quality level of the service provided, but improvements have been made and young Brazilians seem more literate than their fathers in average. However, the problem is in the generation of a high skilled labor force, which is the main challenge for the future of the country. An article by the BBC[76], reports that the lack of talent, being the lack of high skilled labor, in Brazil reaches the astonishing percentage of 63. It is quite the double of world average, which lies on a stable 36%. Companies state that the scarcity of high skilled professional (83.23%) and the lack of basic quality education (58.08) are the main obstacles in filling in available vacancies. Still, unemployment rate in Brazil floats on a 6.1%, showing many people interested in finding a new job. However, data on unemployment are not that reliable, since it considers just people who are actively looking for a job. All the 'informal' workers who are unemployed stay out of the records; informality in Brazil is an issue, so it is legitimate to believe that the real unemployment rate is higher than the official one reported above. For sure, whoever stays in the informal market does not usually have high skilled labor competences, joining the ranks of a vast amount of population incapable of being employed because of lack of vocational and educational training. Again agreeing with the BBC study, many companies (81%) opt for training their personnel directly inside their structure, given the difficulties to find already prepared

[74] http://www.economist.com/blogs/americasview/2014/09/scandal-brazil
[75] http://www.unicef.org/infobycountry/brazil_statistics.html
[76]http://www.bbc.co.uk/portuguese/noticias/2014/09/140903_salasocial_eleicoes2014_profissoes_escassez_lgb

candidates for the vacancies they have available. If we take into account just the biggest companies, the data rises to 87%. A number can easily explain the reason why companies prefer to spend time and money in training themselves their future employees: 69% of entrepreneurs find it impossible to hire valuable candidates for their enterprises[77]. The focus on Brazil has deepened due to the two big sport events the country is organizing between 2014 and 2016, respectively FIFA world cup and the Olympic games. The necessity of infrastructures and the increase of international negotiations made it important for companies to have high-level employees to face the new challenges of the market. It seems they could not be able to find them all in the internal Brazilian basin. According by a research carried out by the Manpower group, Brazil is the third country in the world for lack of professionals and high skilled labor force[78]. It follows Japan, where the cause is to be found in the aging population, and India, member of the BRICS like Brazil, and with enormous internal challenges concerning development and education. India's dynamics are not in the interest of this dissertation, but it is important to understand why is Brazil incapable of ensuring to its market a good turn over in terms of high skilled workers. The reasons are to be searched in the country's higher education system, which has numbers completely different from the ones concerning basic education. According to a report by the Buffalo University, "in 2004, the gross enrollment ratio for tertiary education was only 22.3 percent and the higher educational participation rate for 18 to 24 year olds was only 11 percent"[79]. The country is making good improvement in the area, since its last pick in 2009 was of 36.07%[80]. However, the low participation in 2004 explains perfectly the lack of high quality labor force today, since who has enrolled around 2009 has been in the job market for extremely short time, without the required time to get field experience. In addition, if we compare Brazil participation rate with some European countries, the improvement the Latin country has made loses some of its magic. For instance, in France tertiary education participation is of 58.30% (2012), 61.88% in the UK (2012) and 62.47% in Italy (2012)[81]. The three European

[77] http://economia.ig.com.br/sobram-vagas-mas-profissionais-qualificados-procuram-emprego/n1597034360413.html
[78] http://economia.ig.com.br/brasil+e+3+pais+com+mais+escassez+de+talentos+no+mundo+diz+pesquisa/n1596964579130.html
[79] http://gse.buffalo.edu/org/inthigheredfinance/files/Country_Profiles/Latin_America/Brazil.pdf
[80] http://www.tradingeconomics.com/brazil/school-enrollment-tertiary-percent-gross-wb-data.html
[81] http://www.tradingeconomics.com/

countries have all different systems, but ensure their markets a quite homogeneous participation to advanced education. If we make comparison with other two important economies in Latin America, it results clear how Brazil is bad performing in the field. The data for Argentina and Colombia are respectively of 80.31 (2012) and 48.33 (2013). Argentina has a tradition of public university and access to education granted to all, so it is not surprising to have such a high number; Colombia, on the other hand, has quite doubled its participation rate in the period 2004-2012. This comparison shows how the Brazilian government should make better efforts to improve its educational system, releasing on the market enough professional high-qualified workers. The issues in Brazil do not stop on average numbers, rather they are much more worrying when moving to geographical and racial fields. Most of the universities are located in the Southern part of the countries, with centers of excellences in Sao Paulo, Rio de Janeiro and in Porto Alegre, while there are not any in rural areas. Commonly, public universities are better rated than private ones, but also apply an examination test to get in (vestibular). In addition, despite the Afro-Brazilian population is roughly 45% of the whole, just 2% of the students enrolled in universities are Afro-Brazilians. The explanation is quite easy: the white population corresponds quite perfectly with the rich population, having the possibility to send their children to good high schools, in good neighbors of Brazilian cities. Best schools better prepare the young students to face the vestibular, so that a vicious circle is installed, with the rich enjoying the possibility to study and to keep their position, and the majority of the poor left to their starting condition. Improving basic education in the outskirts and in the favelas would be fundamental to ensure everybody equal opportunities in facing university admission tests. Education remains a great issue, both in its average performance, and both in the inequalities it carries out, keeping a wide part of the population out of high skilled training and education process. It is clearly a contradiction in a country where the demand for labor is high and there are many possibilities to develop in the field.

Last institutional arrangement in question is the ensuring of property rights and the enforcement of the rule of law. During the discussion on the failure of capitalism, it has been said that a bad performance in insuring these kinds of rights represents an obstacle in the development of a working market economy. Doing business becomes more difficult and an environment of informality quickly takes

place, stabilizing as mainstream in some parts of the country. According to Alston and Mueller (2010), a bag guarantee of property rights has dramatically affected the development of tenancies and land agreements, impeding much of its possible success to Brazilian primary sector. They "test for the importance of insecure property rights in Brazil on the reluctance of landowners to rent because of a fear of expropriation arising from land reform. Since 1964, the Land Statute in Brazil has targeted rental lands for redistribution. The expropriation of farms, resulting from land conflicts, is currently at the heart of land reform policies in Brazil"[82]. According to what the two scholars write, safeguard of property rights is not only a problem in the informal environment of the favelas (as De Soto explained), but also a much worse situation, which includes entrepreneurs and land owners. They say that there is insecurity on who holds property rights, and from this insecurity troubles originate in conflicts resolution. Now let's take a look on some numbers, which can help us positioning Brazil in the international scene, comparing with other economies. According to the Heritage Foundation[83], Brazil has a score of 50 in the property right index. With the scores that go from 0 to 100, higher scores are more desirable, meaning that property rights are better protected. Like it was for corruption, the two countries showing the best performance in Latin America are Chile (90) and Uruguay (70). In Europe many countries, like the UK score 90, while France has 70 points as well as Uruguay. Italy (55) has quite the same score Brazil has. In its comments, the Heritage Foundation reports that "The judiciary is inefficient and subject to political and economic influence. The court system is generally overburdened, and contract disputes can be lengthy and complex[84]. This description makes it clear that the country faces some difficulties in fully guaranteeing the protection of property rights, making it insecure for investors to easily start new business or to preserve the existing ones.

Does this problem, joint with the lack of sufficient high skilled workers and with a high corruption rate, affect the development and implementation of a sustainable economics as well as it does with business? The next chapter will draw the conclusion on the matter.

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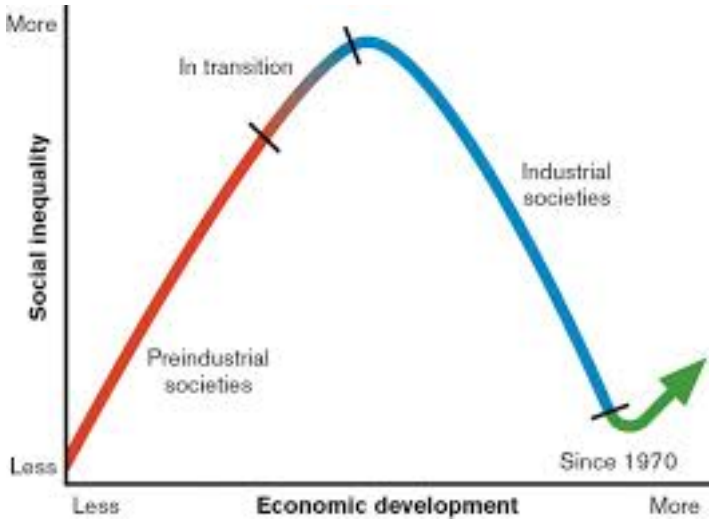
[82] Alston L.J. Mueller B. (2010), *Property Rights, Land Conflict And Tenancy In Brazil*, Working Paper 15771, National Bureau Of Economic Research, Cambridge, MA

[83] http://www.heritage.org/index

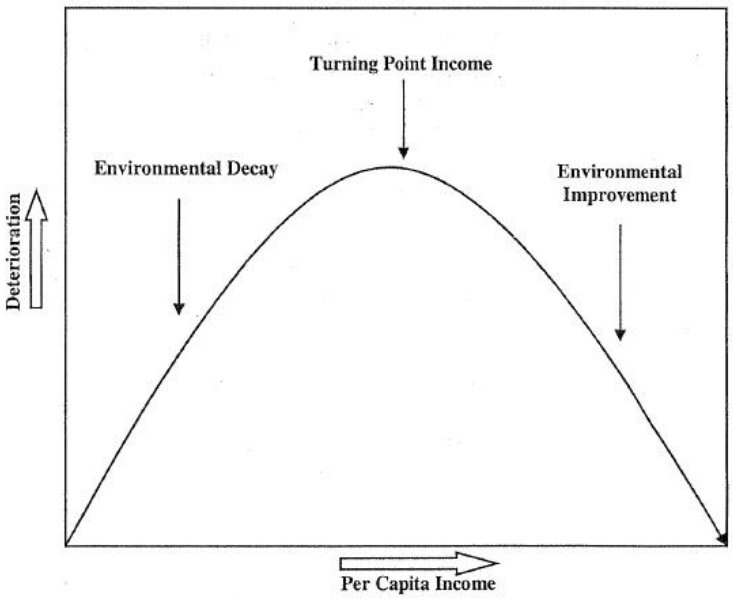
[84] http://www.heritage.org/index/country/brazil

CONCLUSION

Development in many countries is an extremely complicated task, and the opportunity to pursue it in a sustainable way does not have majoritarian response. According to some theories, sustainability cannot be achieved in developing countries, since economic growth is in antithesis with care for the environment and all the other features composing sustainable development. The theories in question refer to the so-called Kuznets curve. The original curve (graph 3) draws a revers U relation between economic development and social inequality. In simple words, a country becoming richer gets to a point where social inequality is maximum, then it starts getting lower again following positive economic growth. Developing countries are now facing this situation, especially Latin America, having great issues of inequality inside its borders. It is not important for this dissertation to understand why there is such a correlation between income and inequality, but the curve is important for another reason. Indeed, from this original Kuznets curve, another curve has originated, called Environmental Kuznets Curve (EKC). Stern (2003) describes extremely well the new curve and its implications, being quite critical on its regards. The EKC shows a reverse U correlation between per capita GDP and environmental degradation (graph 4). The idea is that in non-industrialized economies



Graph 3



Graph 4

the impact on the environment is close to zero, but if income increases, deterioration does as well. It does until it reaches its peak, to slowly decrease following the growth of the economy. This model has been developed studying the city of London, and it perfectly fits the parabola of the British capital. A country in the middle of its economic development – as it was England during the industrial revolution – does not have any concern for the environment, since the only aim is to generate income. When people enjoy better quality of life they also start demanding for a better environment where to live, so that factories move out of towns and green policies can start to be adopted. According to this theory, only developed counties could pursue green policies, since it is just matter of economic development. Stern claims that the arguments in favor of such hypothesis are not very robust. Indeed, he states that if it is true that some local economies do show an EKC relation, the global economy does not. The real reason why some developed economies match the EKC is due to delocalization. They are producing their emissions and their deterioration just in other geographic parts of the world, but they are still producing them. The author argues that "hat if there was an EKC type relationship it might be partly or largely a result of the effects of trade on the distribution of polluting industries. The Hecksher-Ohlin trade theory suggests that, under free trade, developing countries would specialize in the production of goods that are intensive in the factors that they are endowed with in relative abundance: labor and natural resources. The developed countries would specialize in human capital and manufactured capital intensive activities. Part of the reduction in environmental degradation levels in the developed countries and increases in environmental degradation in middle income countries may reflect this specialization"[85]. It is not matter of income, it is matter of power. Not to say that the two things are not related, but it is important to underline that the EKC works in some places because of foreign policy issues, not due to domestic achievements. Developing countries must be able not to internalize developed countries' environmental costs, ensuring their populations not to deteriorate their home place for the benefits of people living in other parts of the world. Will they be able to do that? The economic crisis and the rise of a multipolar world is giving greater space for maneuvering to emerging powers like Brazil, and sustainable development is an

[85] Stern D. (2003) *The Environmental Kuznets Curve*, Department of Economics, Rensselaer Polytechnic Institute, Troy, NY, USA

option to gain bargaining power in the international arena. EKC is an interesting suggestion, but it should not be seen as an obstacle for sustainability to be implemented in developing areas, such as Latin America, for instance.

Now the focus can move to the core of this conclusive chapter, it being the role institutions have in the process of implementation of sustainable policies. Having eliminated the economic feature from the field, we can finally switch to the institutional side, which divides itself in two branches: the creation of an international legal framework and the domestic conditions valid to enable sustainable development.

Many believe that global governance is necessary to make great achievements in the field of sustainability. States have the need of an overarching institution that sets the rules and supervises the system. Different nations will not comply with environmental goals if there is not an authority capable of enforcing a legal frame for the protection of the environment. For instance, Koch-Weser (2002) claims that "to improve global environmental management, we need a stronger global environmental governance system"[86]. Climate change and sustainability are global challenges for sure, they are part of UN millennium goals, but will their solution pass only trough an international organization settling all the poles to guide our actions so that the environment will be preserved. I sincerely doubt it. It is extremely complicated to have everybody agreeing on such a complex topic, especially because balance of power and political games overlap to what the care for the planet is. On the international stage, sustainability becomes matter of bargaining, losing the focus on its importance. Its significance has also being questioned, with some international leaders unwilling to pursue sustainable policies considered unnecessary. As far as it concerns, it is quite important to remember the Bush doctrine, claiming that uncertainty about the effects of climate change allowed the United States to act as the environmental risk was zero, non existent. Bush theory may appear silly, but, on the opposite, it is really well planned and of impact in foreign policy. Complying with any environmental agreement would have put the United States in a condition of submission, of partial loss of its independence, hypothesis impossible to accept for the most powerful country in the world. Typical of US foreign policy is to play the so-called "chicken game", based on

[86] Koch-Weser, M.R.V.B. (2002), *Sustaining global environmental governance: Innovation in environment and development finance*. In: Esty, D. Ivanova, M., (Eds.), Global Environmental Governance, Yale University Press, New Haven, CT, pp. 1–23.

elementary economic game theory. The game, of course, has a figurative meaning. It consists in a race of two cars, running one against the other. The pilots have two options: first option is to keep driving and risk to crash against the other vehicle, second option is to make a turn, lose the game, but exit unhurt from it. Usually who is the bravest wins, opting for keeping its trajectory and wait for the other to withdraw. If both pilots follow this strategy, crash is the result. The US usually keeps on going, waiting for the other to leave the race, or being ready to accept the crash. This has been the strategy during the Cuba missile crisis during the cold war. Soviet Union withdrew its fleet at the very last moment, avoiding crash but enforcing US strength and credibility. In addition, the Americans, to show they have no fear and they shall not leave the game, act as if the pilot was to sit in the back of the car, annulling any possibility for him to make the turn. They manifest their preparation to the impact, leaving the choice to the opponent. What is the relation between the cold war, the chicken game and global environmental governance? The US is acting with regards to sustainability exactly like it was doing during the Cuba missile crisis. They are waiting and they will not make any move until all the others do. India and China, for instance, have ratified the Kyoto protocol on lowering CO2 emissions, but they have any obligation in doing so according to the current agreements. The US is not participating to the treaty, unwilling to lower their emissions in the upcoming multipolar world. Or, at least, it will not do it inside an international frame, but on its own. Great powers do not have the will to show commitment to others, preferring to maintain their full space of maneuvering. That is the reason why international treaties, organizations and agreements in general will be neither conclusive nor definitive, but just an excellent display of good intentions. Hanson (2007) tries to draft some guidelines of a successful environmental global governance, giving the picture of a modern king of international frame. He believes that governance for environment and sustainable development must include governments, joint with individuals, private sector, intergovernmental bodies and NGOs. The picture is quite interesting, it goes over the idea that nation states can act alone in the international sphere, but it does not solve the problem of involving completely the main powers. There is an important difference between what it should be and what it can actually be. The author, despite being fully aware that more efforts must be done to establish a functioning international governance for environment and sustainable development, still cares

about listing a series of successful actions taken in these years of debate on the issue. The following are what he calls "prime examples:

• Ozone monitoring in support of the Montreal Protocol and assessment of chemicals for ozone-depleting potential.

• IPCC – scientific assessment panel operating inter-governmentally, but setting the research agenda on climate for thousands of scientists around the globe. The IPCC has undoubtedly knocked decades of time off what might otherwise have been required to understand the complexity of climate change

• Global Ocean Observing System via bodies such as the IOC (Intergovernmental Oceanographic Commission), the World Maritime Organization (WMO) and ICSU (International Council for Science).

• Integrated Global Observation Strategy that links data gathered by satellites with ocean, terrestrial and atmospheric information. One contribution is the Argo oceanographic floats that monitor ocean conditions throughout the world. Argo involves international collaboration of scientists from 23 countries. It is an example of science dependent on ICT, unheralded in public, but essential for understanding complex issues such as the role of the oceans in climate change.

• Millennium Ecosystem Assessment"[87].

Hanson is very right in being enthusiastic for these kinds of results, but they are fundamentally scientific boards, with the aim of studying the issue and presenting data to whom is competent of taking decision. These kinds of international institutions are important and they represent a starting point to face the issue. It is thanks to these efforts that information about sustainability is getting more and more widespread, not only in the room of decision making, but also among the population. It is impossible not to support this evidence, but the situation becomes completely different when we talk about treaties and agreements regulating states' policies, influencing their internal sphere in a field that is not just related with the economy, it is fully part of it. Politicians seek for re-election and, some, for international consideration, two elements that do not get along well with sustainable development. Better, they do no get along with each other if we talk about multilateral bargaining, since whether we enter in the field of international bargaining, then game theory becomes the main character. As previously shown,

[87] Hanson A.J. (2007), *Global Governance for Environment and Sustainable Development*, International Institute for Sustainable Development.

games are the main obstacles to sustainability in the international competition. However, as it was mentioned with regards to Brazil in the previous chapter, sustainability can become extremely attractive in the domestic arena, being an important tool both for internal and external policy. The failures of Kyoto and Copenhagen are the symbols of an impossibility of tackling climate change, and sustainability in general, according to traditional multilateral negotiations. Sustainable development is an issue embodying a long-term horizon, even though short-term objectives can be set and accomplished. Politicians have many difficulties in promoting long-term policies domestically in their respective countries, so it is clear that it is practically impossible for them to reach international agreements on such complex and not fully known issues. Science provides us with the environmental risk, we can already feel the deterioration of the ecosystem and of the environment where we live, but the margins for adaption are still extremely broad and no deadline is fixed for any catastrophe. Catastrophe does mean only hurricanes, tsunami and heart quakes, but also the end of important resources and the sickening degradation of air quality in urban environments. Still we do not know when such things will manifest, we just know that some of them will if we keep with this pace of exploitation of the planet. Politicians and policy makers in general will not take any international commitment to prevent something unknown just for the sake of the future. Why should anyone take such a decision if the one coming after him could do it. There could be some enlightened leaderships, but they are not enough to link and join all the relevant countries in the world. International meetings and event maintain their importance, as places where to share ideas, make brainstorming to come out with new strategies and also to calculate what has been done in given periods of time. However, the transition to sustainability must be carried out country after country, each one independently in its domestic field. Cooperation is to appreciate, but it will be a spontaneous effect of individual entities aiming at the same direction. When there is a common goal it is easier to share efforts, as it has been for the European Union in a certain sense. It was impossible to think European powers, at war for ages, gathering together under one flag, but they did it when their objectives merged and they realized that joint there were higher possibilities to achieve them.

Now we can move to the second branch of institutional analysis with respect to sustainable development, that it the one related to domestic institutions.
How much do they weigh in the possibilities of enabling an economic model based on sustainability? The answer here is: not so much. It could be intuitive to support the opposite thesis, claiming that a clean democracy and efficient domestic institutions are necessary to allow a virtuous cycle based on sustainability to start. A well educated population, living in a democratic environment, should be more likely to push its government towards policies that would ensure a better future for them and their progeny, than the one of a country where education is of poor level and corruption is highly spread. Accountable politicians should probably choose the best policies for their citizens better than the ones belonging to a political arena where scandals and lack of transparency are the rule. However, the Brazilian experience shows a completely different result. The country is one of the leader in promoting sustainable policies, implementing many of the practices listed in chapter two, especially concerning green economy. The energetic sector is taken care in a very detailed way and some aspects of circular economy and knowledge economy lays on the principles founding the city of 2030. On the other hand, data on corruption, education and protection of property rights are extremely discouraging, reaching low scores both compared to the world and limiting to the Latin continent. Transparency is an issue, informality is unbridled, but the country performs extremely well in carrying out a program on sustainable development, performing much better than traditional democracies like the United States, accustomed to stay at the top of quite all world rankings. Does this mean that virtuous institutions represent an obstacle? Absolutely not; they are simply not a factor in the process of starting sustainable policies. For instance, protection of property rights has been a major impediment for capitalism performing decently in Brazil and in Latin America in general, why has it not been an obstacle in the realization of green policies? Informality has been a common practice to overcome inefficient bureaucracies, and it prevented capitalism to deliver positive dividends because that kind of economic system was based on a western model founded on legality, records and registrations. It was impossible for privates to transform their assets into capital and, with no capital, capitalism fails. Sustainable development requires no capital to fulfill itself, so that informality is not a direct obstacle to its pursue. Sustainable development requires investments and planning, it does not

matter if a house is registered or not. It is important that it is built according to green standards, and giving the builders the right incentives to do so is the best way to ensure it. A functioning bureaucracy could be a plus, but it is not conditio sine qua non for the whole process to keep going. So, if it is not thanks to virtuous institutions, how come Brazil achieved important results in sustainable policies? A possible answer is: the market. The market in its broadest meaning, comprehending private and public sector. Sustainable policies have become attractive both for policy makers in Brazil, both for companies, which operate on Brazilian soil, taking advantage of the countries' resources. The government realized that sustainability is an incredible opportunity to gain energetic autonomy, and to stand with respect to international competitors. Sustainable development has been seen by Brasilia as the ground where to become world leader, gaining bargaining power in the international arena. In addition, Brazilians have great concern of their territory, and sustainable practices are more than welcomed by the population in order to preserve the natural heritage of the country. In addition, urbanization is a present issue and a plan to tackle it could be positively seen by the population. Differently from other countries, where long-term policies are likely to be left aside by policy makers, sustainability has became politically attractive today for Brazilian leaders. Moreover, the region is seeking for independence, both on political and economic fields. Capitalism is the model of the former colonizers, and it has failed, enriching the west and disappointing the south of the world. That is another reason why sustainability has been a viable option for the Brazilian government, to adapt current capitalistic system to new features more suitable to local culture. It is clear that traditional capitalism has not been replaced yet, but few steps in that direction has been made in Brazil, not where the dominant model was borne and developed. It is all a matter of opportunity. Sustainability has been seen as the opportunity to emerge, in a period of crisis and decline of traditional powers. In addition, being sustainable practices fomented by the government, the private sector understood the possibilities of profit and investment in a new field. In addition, given the standstill of international governance on environmental issues, the private sector started to act by itself. Levy writes: "Growing concern about an international "governance deficit" has fuelled this embrace of private resources and capacity"[88].

[88] Levy D. (2011), *Private Sector Governance for a Sustainable Economy: A Strategic Approach*, In Beyond Rio+20: Governance for a Green Economy, The Frederick S. Pardee Center for the Study

The private in questions are both profit oriented companies, and organizations interested in the development of a sustainable economy. In chapter two, we showed several examples of profitable practices based on sustainable economics carried out in Brazil, joint with some suggestion for policy makers to regulate and integrate private efforts. Levy would like more, he proposes that governments should enact a new form of regulation, influencing directly the corporate governance of private companies, in order to better include the private sector in the implementation of a sustainable economy. He states "most radical approach is to restructure the foundations of corporate governance so that productive organizations internalize the drive to serve multiple stakeholders and goals, including the workforce, the community, and the environment"[89]. Levy's idea is to make companies directly accountable to the civil society, whose members would be happier to purchase services of companies that best fit their demands also in terms of community and environment. Clearly the companies keep on pursuing maximization of profits, but the civil society gets to have a voice in some aspects of decision-making. Levy's idea is still at its early stage, but the core of his theory is represented by a deep relation between a regulating public sector and an accountable private sector. When talking about private investments in sustainability, the government must be able to set the enabling conditions for the realization of profitable investments. Brazil appeared to be capable of conducting such a practice, understanding that incentives to private sector would have made more credible its direct efforts in the establishment of sustainable practices. The quality of domestic institutions has not been an obstacle to the realization of what was a need emerging from the international market. If, on the other hand, we refer just to democracy, the discussion turns a bit controversial. According to the foundation for democracy and sustainable development[90], the two concepts encounter several clashes. The most important ones are those concerning space and time. Liberal democracies have short-term horizons and are oriented to a restricted area inhabited by one People. On the other hand, sustainable development is a long-term issue and the global population is the target, both in positive and negative effects. Second, liberal democracies pursue straight economic growth, while sustainable development openly challenges such practice. Individualism vs. sharing economy and certainty vs. uncertainty are the other two

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of the Longer-Range Future, Boston University, p.83

[89] *Ivi,* p. 85

[90] http://www.fdsd.org/the-challenge/

clashes. The Foundation believes fundamental for a virtuous society to pursue both, liberal democracy and sustainable development, with some adjustment to the first to make the second fit. This description is important to state that democracy could not be an impediment to sustainable development (Brazil is a democracy), but under the light of the listed clashes, democracy cannot be seen as an enabling condition. Any kind of regime could be implementing sustainable policies if they become politically and economically attractive. What would be of primary importance is political stability. Both in democratic and non-democratic countries, stability is required to ensure continuity in the contents of the policies adopted, since sustainability demands great amount of time to be implemented, and even more to show its results. Revolutions and 'golpes' and too frequent elections are the two faces of the same coin. It is not in the interest of this dissertation to manifest any judgment on which are the best forms of governments, rather the objective is to deliver the idea that sustainability have real chances to be at the top of the political agenda of a state if it becomes attractive and if it is perceived as attractive. Brazilian policy makers have perfectly understood all the potential of sustainable economics and they opened their economy also to private investments in the sector. The hope is that Brazilian results could attract other countries in adopting similar policies, provoking a sort of spillover effect. A possibility is also that competition in the sector of sustainable economics could start a sort of leapfrogging, with the extraordinary positive effect of multiplying the performance of policies based on sustainable development.

Finally, the first dramatic effects of climate change and the contemporary crisis of traditional capitalism made it possible for sustainable development to gather some space in the international scene. The current situation has opened market opportunities for sustainable economics, and some countries are taking advantage of them, leaving wide open the door for a massive implementation of practices based on sustainable development. The hope is that such practices become wide spread rapidly, in order not to switch from market needs to survival needs.

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