Are there sustainably developed countries?

Multi-criteria social, economic and environmental indicators to identify sustainable development

A Research Paper presented by:

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Argentina

in partial fulfillment of the requirements for obtaining the degree of
MASTERS OF ARTS IN DEVELOPMENT STUDIES

Specialization:

Public Policy and Management

PPM

Members of the Examining Committee:

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The Hague, The Netherlands
December 2012

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This document represents part of the author's study programme while at the Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

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List of Acronyms

BCS	Best Case Scenario
CIA	Central Intelligence Agency
GDP	Gross Domestic Product
GHG	Green House Gases
GNI	Gross National Income
HDI	Human Development Index
IPCC	Intergovernmental Panel on Climate Change
IWI	Inclusive Wealth Index
IWR	Inclusive Wealth Report
MCS	Minimum Case Scenario
MPI	Multidimensional Poverty Index
NA	Not available
PPP	Purchasing Power Parity
SDR	Sustainable Development Ranking
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNU-IHDP	United Nations University – International Human Dimensions Programme

Abstract

Development of a country is mainly tracked towards its levels of economic production measured in GNI per capita or similar indicators. In this paper, "development" is considered as a desired state where sustainable development is met. Then a "developed" country is proposed to be a "sustainably developed" country, which is one that has a broad fulfillment of basic needs and accessibility to economic means among its population and that it does so within ecological limits, implying three dimensions: economic, social and environmental.

A multi-criteria ranking (called SDR) was developed to identify these countries.

The SDR results showed a global poor performance in terms of sustainable development. Moreover, they showed that there are no "sustainably developed" countries.

Although the dominant developmental view is aligned with higher levels of economic performance, globally the economic is not the best performing dimension according to the SDR. Even more, the GNI per capita is the second worst performing indicator.

There were also found countries with good performances in the social and environmental dimensions, and even in income distribution levels (i.e. Gini Index), although having lower GNI per capita than the minimum expected for a certain level of development. Moreover, it was found that very high levels of GNI per capita imply a bad performance in the environmental dimension. Both results support the setting of desired levels of GNI per capita to lower levels.

Finally, the SDR provides a useful tool to assess the global and individual performance in the three dimensions of sustainable development.

Keywords

Sustainable development; economic, social and environmental performances; basic needs; ecological thresholds; economic growth; development

Chapter 1
Structure of the work

Section 2: Problem Statement introduces the studied problem and the research questions that the current paper tries to address. The main objective of the paper is to identify if there are countries that are "sustainably developed".

Section 3: Theoretical Framework makes a description of the theoretical lens through which the whole analysis of the paper is done. Sustainable development and its three dimensions are defined. Based on this, a "sustainably developed" country is defined. Finally, some theoretical guidelines are given in order to identify through a system of indicators if there are "sustainably developed" countries.

Section 4: Methodology presents the analytical framework used to develop the ranking that identifies the "sustainably developed" countries as well as the analytical framework used to compare the ranking developed here and the rankings given by the Gross National Income (GNI) per capita and the Inclusive Wealth Index (IWI). The IWI is a new proposal of the United Nations to measure sustainable development (UNEP and UNU-IHDP 2012).

Section 5: Results and Analysis presents the rankings and comments on the comparative results, definitions and approaches, based on the theoretical and analytical framework. Findings from each analysis are presented in this section.

Section 6: Conclusion presents a summary of the findings and conclusions to answer the research question, unanswered questions, new questions and implications that arose through the whole research process.

Chapter 2
Problem Statement

2.1 Economic, social and environmental problems of the world

The planet is facing big problems in many dimensions. On the one hand, an important amount of people are living in extreme poverty measured in economic terms as well as in a more comprehensive way and, on the other hand, there is an increasing over-exploitation of natural resources that is driving us to an important environmental crisis that brings enormous costs, risks and uncertainties, including possible major loss of life.

There is huge evidence of these problems.

Regarding the economic problem, the world is facing high levels of income poverty and inequality. 20% of world population lives under $1.25 a day (PPP) and it goes up to 40% if the poverty line is set up to $2.5 a day (PPP), which is still an extremely low level (Mistiaen. 2012). Moreover, there is a high level of income inequality between global citizens, where global inequality between individuals is estimated at 70 Gini points[1] (Milanovic 2012: 1).

Regarding the social problem, almost 30% of world population lives under deprivation measured by the Multidimensional Poverty Index[2] (UNDP 2011: statistical tables). There is also a great inequality in life chances. The global average life expectancy at birth is 69.8 years, however in some countries it is possible to live over 80 years, showing a high level of inequality with almost 14 years of difference with the global average. Moreover, the worst situation is a country where the average life expectancy at birth is 47.8 years, 22 years less than the global average (UNDP 2011: statistical tables).

Regarding the environmental problem, there is also evidence, as stated by UNEP:

> "As human pressures within the Earth System increase, several critical [ecological] thresholds are approaching or have been exceeded, beyond which abrupt and non-linear changes to the life-support functions of the planet could occur. This has significant implications for human well-being now and in the future." (UNEP 2012: 194).

When comparing human demands on the environment to the global available biologically productive land it is suggested that there was already an "ecological overshoot[3] of about 25% (WWF, 2006)" several years ago (White

[1] The Gini Index or Coefficient measures income inequality, where a value of 0 represents absolute equality and a value of 100 absolute inequality.

[2] Calculated among the 109 countries for which the Multidimensional Poverty Index was calculated (UNDP 2011), these countries represent almost 80% of total global population.

[3] An "ecological overshoot" is "The situation that occurs when humanity's demand on the biosphere exceeds supply or regenerative capacity. At the global level, ecological

2007: 403), caused by unsustainable levels of consumption, mainly in Europe and North America (UNEP 2012: 206).

Achieving high levels of consumption is one of the major goals of developing countries, despite these levels of consumption being the main problem of the ecological overshoot as previously explained. Moreover, these high levels of consumption not only prejudice the Earth System as a whole, but also do not generate significant improvements in happiness. As argued by the Easterlin and other similar paradoxes, "above a country average of $10.000 to $15.000 per capita, further growth does not translate into greater well-being" (The World Bank 2012: 6).

So, the world is facing a dilemma where the widespread accepted objective is to increase consumption although current distribution mechanisms are unequal, do not guarantee higher human well-being among all and these levels are ecologically harmful.

2.2 What it means to be "developed"

We call as "developed" or "advanced" countries those countries that have a high level of GDP per capita, although it is known that this indicator does not measure environmental degradation, social inequality, and many other relevant aspects. Consequently, we may be calling "developed" to a country with important levels of environmental degradation for example.

The GDP per capita as the main indicator of development gives importance only to economic factors. Moreover, this doesn't acknowledge development is multidimensional, if the aim of development is improving human life conditions. Several authors have already gone through this point. For example, Nussbaum stated that:

> "We are living in an era dominated by the profit motive and by anxiety over national economic achievements. Economic growth, however, while a part of wise public policy, is just a part, and a mere instrument at that. It is people who matter ultimately; profits are only instrumental means to human lives." (Nussbaum 2011: 185);

also expressed by Ekins and Max-Neef:

> "The economy is not the only, and is perhaps not the most important, dimension and motivation of human life. […] The other principal dimensions of human life are the social, ethical and ecological. These are inseparably linked to the economic dimension and it is only rarely that any dimension can be validly considered in isolation." (Ekins and Max-Neef 1992: 424);

and as recently said by Stiglitz, Sen and Fitoussi:

> "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." (Stiglitz, J.E., Sen, A. and J. Fitoussi 2009: 7-8).

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deficit and overshoot are the same, since there is no net import of resources to the planet." (UNEP 2012: 514-515).

2.3 Sustainable development as a proposal to overcome these problems

In order to deal with these problems, the international community, embodied in the commission that published the report "Our common future", defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987: 15).

In this paper development is defined "as a vision, description or measure of the state of being of a desirable society" (Thomas 2000: 777). Moreover, "sustainable" means that is able to be maintained over time. So "sustainable development" is a desirable state that can be maintained over time. When related to the definition given above, it means that we need to maintain the environmental conditions of the Earth so that current and future generations can fulfill their needs.

In line with this argument, this paper proposes to call "developed" countries those countries that are actually "sustainably developed", this implies that they perform well in the social, economic and environmental dimensions simultaneously.

However, there is no clear methodology or approach in order to be able to identify these "sustainably developed" countries. As stated by Duraiappah and Muñoz, after the "Our common future" report the objective of sustainable development was calling countries to move into "a new era of economic growth without any suggestion for new metrics for evaluating progress left countries with little option but to continue using the gross domestic product (GDP) per capita to track progress" (Duraiappah and Muñoz 2012: 363).

Moreover, there is no clear evidence if such "sustainably developed" countries actually exist and if they are the same as the currently considered "developed" countries based on GDP per capita measures. From the social dimension perspective, although economic growth is recognized as a relevant driver of poverty reduction, it is not a sufficient or undoubtedly necessary factor. As wisely summarized in the Inclusive Green Growth Report 2012, "Some countries reduce inequality as they grow; others let it increase. Policy matters." (The World Bank 2012: 5). From the environmental dimension perspective, there is evidence that the ecological overshoot that is threatening the Earth is mainly caused by the levels of consumption of North America and Europe, whose levels of consumption dramatically exceed their own regional biocapacity as well as the global biocapacity available per person (UNEP 2012: 206). However, this doesn't mean necessarily that all countries with high GDP per capita necessarily have a bad environmental performance, since here too "policy matters".

Consequently, this research aims to find if there are "sustainably developed" countries. In this context and considering the three pillars of the sustainable development definition, a "sustainably developed" country is one that achieved desired levels of environmental, social and economic development.

2.4 Research question: Are there "sustainably developed" countries?

Main research question and sub-questions:

- Are there "sustainably developed" countries?
    - How can a "sustainably developed" country be identified?
    - Are the "sustainably developed" countries the same as the currently called "developed" countries?
    - Are there other approaches trying to identify the "sustainably developed" countries?

Summarizing, the world faces social, economic and environmental problems. However the current identification of a "developed" country is mainly related to levels of economic development (and not even considering all aspects of the economic dimension). Given that, the proposal of this research is to identify "developed" countries based on a sustainable development approach. Consequently, the identification of "developed" countries is proposed to be done considering simultaneously good economic, social and environmental performances.

Chapter 3
Theoretical Framework

3.1 What is sustainable development?

We need to define what sustainable development is in order to identify the "sustainably developed" countries. The definition used here is the one given by the "Our common future" report, where sustainable development was defined as "'development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987: 15).

As studied by Robinson, the main criticism this definition suffered was that it was a contradiction in itself because it was looking at the same time for economic growth and ecological sustainability (Robinson 2004: 369). The main reason for this was that "the "development" side of the sustainable development argument was being equated with economic growth." (Robinson 2004: 373). This was a result of the fact that the term sustainable development meant "so many different things to so many different people and organizations." (Robinson 2004: 373). Also studied by Robinson, "the lack of definitional precision of the term sustainable development may represent an important political opportunity."(Robinson 2004: 373-374).

Although some argue that considering development equal to economic growth is a valid interpretation, taking advantage of the lack of definitional precision, in this paper, sustainable development is defined considering three dimensions: social, economic and environmental as was also proposed by the "Our common future" report. The definition of the three dimensions as described in the "Our common future report" was something that was not broadly considered.

On the social dimension the report argued that "sustainable development requires meeting the basic needs of all and extending to all the opportunity to fulfill their aspirations for a better life" (World Commission on Environment and Development 1987: 15). On the environmental dimension, "sustainable development does imply limits […] imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities" (World Commission on Environment and Development 1987: 15). Finally on the economic dimension, it argues that economic growth increases living standards and quality of life of the population (World Commission on Environment and Development 1987: 28), but that it has to be within the planet's ecological means and guaranteeing the poor get their fair share of resources to sustain that growth (World Commission on Environment and Development 1987: 15).

According to this paper, a "developed" country is a "sustainably developed" country which is one that performs simultaneously well in the economic, social and environmental dimensions and not only in part of the economic dimension as currently considered.

3.2 What are the dimensions of sustainable development?

The three dimensions described above are part of the definition of sustainable development that has been used internationally for around 20 years since the launch of the "Our common future" report and it is the definition broadly used in international organizations (for example, (UNEP and UNU-IHDP 2012: 5)).

However, the definitions of the three dimensions as actually defined in the report -as they are considered here- are not widespread considered. The reasons why this happens are not going to be studied as part of this research endeavor. Nevertheless, in the following paragraphs it is going to be justified why in this paper they are in fact being considered.

The **social dimension** is important from a human's rights or social justice perspective. Having a huge amount of people living under poverty conditions and not having a certain minimum level of basic needs fulfillment goes against the Universal Declaration of Human Rights (United Nations.). As explained by Gasper,

> "Human rights can be seen as rights to the fulfillment of, or ability to fulfill, normative basic human needs. Basic human needs are whatever people require to be able to achieve a level of functioning that satisfies a given ethical conception of the acceptable minimum." […] "These normative needs provide a grounding for human rights (Klein Goldewijk and Fortman 1999). Galtung (1994) adds that even if not all needs imply rights, and not all rights correspond to needs, a central set of human rights rests on basic needs. Nussbaum (2000) proposes similarly that many human rights are best seen as rights to basic needs, in turn best seen as basic capabilities to function, in other words real access to those priority functionings." (Gasper D. 2009: 355)

The importance of the **environmental dimension** rests on two main considerations both crucial if the objective is to maintain a safe environment for future generations to survive and live. Firstly, the uncertainty we have of the negative consequences of passing ecological thresholds. Human life is limited by nature due to the uncertainty and ignorance we face about ecological mechanisms and the impacts we may suffer for changing them (UNEP 2012, Stern 2007, Intergovernmental Panel on Climate Change 2007). Given that, ecologists are advocating for the precautionary principle:

> "ecologists emphasize the complexity of natural systems and our relative ignorance about long-term, irreversible, or potentially catastrophic effects of economic behavior on the natural systems that support us. They suggest that, instead of placing blind faith in technological progress and economic growth, society should adopt the precautionary principle. This principle says that we should err on the cautious side, preferring to cooperate with natural systems rather than assuming we can safely replace them." (Goodwin et al. 2009: 13).

Secondly, the increasing certainty we are having that the consequences of passing critical ecological thresholds could be catastrophic. As studied by the IPCC:

> "Continued GHG emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century." Moreover, "Impacts are very likely to increase due to increased frequencies and intensities of some extreme weather events. Recent events have demonstrated the vulnerability of some sectors and regions, including in devel-

> oped countries, to heat waves, tropical cyclones, floods and drought, providing stronger reasons for concern" (Intergovernmental Panel on Climate Change 2007: 72)

Also by UNEP:

> "While these methods and assumptions are still being discussed in the scientific literature, their conclusions all point in the same direction: thresholds in the Earth System are being reached and the consequences are significant."(UNEP 2012: 206-207).

But also more research is being done with very relevant findings:

> "If these [ecological] thresholds are crossed, then important subsystems, such as a monsoon system, could shift into a new state, often with deleterious or potentially even disastrous consequences for humans." (Rockström et al. 2009: 472)

Finally, the importance of the **economic dimension** lies in the fact that it is a major dimension for any development endeavor. As stated by Repetto with reference to the GDP (the key indicator of economic growth):

> "the national income accounts are undoubtedly one of the most significant social inventions of the twentieth century. […] they serve to divide the world into 'developed' and 'less developed' countries. In the 'developed countries', whenever the quarterly gross national product (GNP) figures emerge, policy-makers stir. […] In the 'developing' countries, the rate of growth of GNP is the principal measure of economic progress and transformation." (Repetto et al. 1992: 310).

Although its role in development is still being contested whether it is a means with the continuing common understanding or belief that economic growth is the means for reducing poverty and meeting needs for all (World Commission on Environment and Development 1987: 15) or it is an end as one of the many dimensions of human well-being (MacGillivray 2007: 3-4). This predominant interpretation of development still needs to be considered as justified by the recommendations of Innes:

> "Design processes of indicators cannot be done as technical exercises and ignore prevailing public conceptions of the issues. While indicators often give specific form to problem perceptions, they have to be somehow related to the existing views to begin with." (Innes 1990: 292-293).

3.3 What are the sub-dimensions considered in each dimension?

In this paper, a "sustainably developed" country is one that has a broad fulfillment of basic needs and accessibility to economic means among its population and that it does so within ecological limits. However, it is not automatically clear what basic needs are, which the ecological thresholds are and what economic means are. In the following section, it is defined what is considered in this paper as part of each dimension.

In **the social dimension** the aim is to verify which countries are guaranteeing a certain level of basic needs fulfillment for most of their population. There are several theories about the different dimensions of human well-being and all these theories identify a very diverse list of aspects. As stated by MacGillivray:

> "Many well-being dimensions have been identified. The list is extremely diverse, covering such aspects as knowledge, friendship, self-expression, affiliation, bodily integrity, health, economic security, freedom, affection, wealth, and leisure (Alkire 2002). The fundamental nature of dimensions has received much attention. […] Doyal and Gough (1991:5) consider universal needs, which 'apply to everyone in the same way'. As in Alkire (2002), these needs are not seen as well-being itself, but preconditions of well-being. Doyal and Gough conclude that universal needs do exist, and that vectors of basic and intermediate needs and degrees of need satisfaction can be identified." (MacGillivray 2007: 3-4).

Given the debate about the dimensions of human well-being and the wide agreement on basic needs as the pre-conditions of well-being, in this paper basic needs fulfillment is considered as a measure of social development.

This measure has two branches. Firstly, a level of poverty penetration among the population is considered. Within this position, a multidimensional measure of poverty is considered, "Poverty should be regarded as the failure to reach 'minimally acceptable' levels of different monetary and non-monetary attributes necessary for a subsistence standard of living. That is, poverty is essentially a multidimensional phenomenon." (Bourguignon and Chakravarty 2003: 45-46). Secondly, a measure of the satisfaction of basic needs as an average among all the population is considered. With this approach not only those in extreme deprivation but also the situation of the whole population is considered.

It is important to put upfront here that an important amount of relevant dimensions of human well-being are not going to be considered and only these minimum basic needs or attributes.

In **the environmental dimension** the aim is to verify which countries are having consumption and production levels that respect a fair share of natural resources extraction and environmental pollution among people around the world within the finite ecological limits. The environmental dimension is also multidimensional. It implies the consideration of atmosphere, land, water, biodiversity and, chemicals and waste (UNEP 2012: xix), but also of "environmental factors determining human well-being" such as:

> "Ecological services such as provisioning services (consumptive use), cultural services (non-consumptive use), regulating services and supporting services (indirect use), non-ecosystem natural resources such as hydrocarbons, minerals and renewable energy and stress, inter alia diseases, pests, radiation and hazards" (UNEP 2012: xx).

The environmental dimension was also explored by Ekins and Max-Neef who stated some basic conditions of sustainability as:

> "1) Destabilization of global environmental features such as climate patterns or the ozone layer must be prevented;
>
> 2) Important ecosystems and ecological features must be absolutely protected to maintain biological diversity;
>
> 3) Renewable resources must be renewed through the maintenance of soil fertility, hydrobiological cycles and necessary vegetative cover. Sustainable harvesting must be rigorously enforced;
>
> 4) Depletion of non-renewable resources should proceed on the basis of maintaining a minimum life-expectancy of the resource, at which level consumption would have to be matched by new discoveries of the resources. […];

> 5) Emissions into air, soil and water must not exceed the capability of the earth to absorb, neutralize and recycle them, nor lead to life-damaging concentrations of toxins;
>
> 6) Risks of life damaging events from human activity must be kept at very low levels." (Ekins and Max-Neef 1992: 412).

However, some conditions are currently not being respected as there are some boundaries that have already been transgressed: climate change related emissions, biodiversity loss and nitrogen and phosphorous cycles (UNEP 2012: 208).

So, two overall measures of natural resources exploitation levels over the planet capacity to generate them and absorb the wastes are considered: one related to land and water -a measure of consumption levels compared to biocapacity- and one to the atmosphere -atmospheric pollution levels compared to what may be a high risk of climate change-.

In **the economic dimension** the aim is to verify which countries are guaranteeing a certain level of monetary flow or value added in their economy and also to consider income distribution levels among people within a country. The level of monetary flow or value added is important since it is the current definition of development of an economy. But also, inequality level is important in order to evaluate whether economic growth helps to reduce poverty or if it is not going to work in that direction, as stated by The World Bank "growth drives poverty reduction (though the extent to which it does so depends on the degree of inequality" (The World Bank 2012: 1).

All these three dimensions are themselves multidimensional, but in order to keep the analysis feasible only some sub-dimensions are chosen. The ones chosen are those which are thought to be the most important, the more relevant, the least contested, and/or the ones for which reliable data exists. However, in all the three dimensions many relevant sub-dimensions are left out. In any case, it is possible that considering more dimensions may just prove more robustly the point rather than undermining it.

3.4 What would the way be to measure sustainable development?

Nowadays, measuring a country's performance with monetary indicators is the predominant approach, aligned with the fact of equating development with economic behavior. This approach has followed the evolution of GDP per capita as the main measure of a country's performance.

However, sustainable development is a multidimensional concept. So the inclusion of the multi-dimensionality characteristic of development in a context of sustainability imperatives is a must that no longer can be neglected. This was already proposed by many authors, for example Stiglitz, Sen and Fitoussi:

> "the time is ripe for our measurement system to shift emphasis from measuring economic production to measuring people's well-being. And measures of well-being should be put in a context of sustainability. […] This means working towards the development of a statistical system that complements measures of market activity by measures centered on people's well-being and by measures

> that capture sustainability. Such a system must, of necessity, be plural – because no single measure can summarize something as complex as the well-being of the members of society, our system of measurement must encompass a range of different measures." (Stiglitz, J.E., Sen, A. and J. Fitoussi 2009: 12).

All these claims for the consideration of several dimensions in development also claim for indicators that are not only monetary and multi-criteria methods are being considered as the more accurate for that purpose. Multi-criteria methods consider at the same time many dimensions that are measured by different units. As studied by Boggia and Cortina:

> "multi-criteria assessment methodologies assume a central role in the multidimensional evaluation process. […] Thus, multi-criteria methodologies were widely used to evaluate sustainability (Liu, 2007; Shmelev and Labajos-Rodrigues, 2009)." (Boggia and Cortina 2010: 2301).

These methods are useful for conflicting dimensions. As stated by Nijkamp:

> "The major feature of multiple criteria analysis is that it addresses –in an operational sense- evaluation and choice problems marked by various conflicting interests. The aim of multiple criteria analysis is to provide –in a systematic way- information on the nature of these conflicts so as to make the trade-offs in a complex choice situation more transparent to a decision-maker or policy agency." (Nijkamp et al. 1990: 3-4).

This is particularly important for the case of sustainable development and its conflict among economic growth, distribution of social basic needs and ecological constraints.

That is why a multi-criteria dashboard of indicators is considered in this paper to assess sustainable development.

3.5 How far can this exercise go in terms of politics of indicators?

It is important to have indicators since "we only manage what we measure" (Duraiappah and Muñoz 2012: 363). Given the current problems the world is facing on social, economic and environmental aspects, indicators of sustainable development need to be identified and this paper works on this. However, this is just an exercise aiming to be incorporated into the academic debate. Any other consideration of the use of the indicators proposed here implies a deep dive into the distributions of power and politics that are out of the scope of this paper.

The results of this paper may imply changes or trade-offs among scale (relation between human use of natural resources and the planet's capacity), distribution of resources among individuals and allocation (distribution of resources among activities or end uses) (Daly 1992: 186-187). However, these changes depend on the quality of our social relations (Daly 1992: 191). So it is a political problem.

This was also concluded by Herrera et al., regarding the ability of humanity to meet basic needs for all within ecological limits, "human destiny does not depend ultimately on insurmountable physical barriers, but on social

and political factors than humans are responsible to change." (Herrera et al. 2004: 127)[4].

As stated by Innes, in her authoritative book on policy indicators, in order to build useful and impactful indicators a change in the way political decisions are made needs to take place. However, as indicators' results may change the current distributions of power important resistance may be at place:

> "Merely producing better indicators will fall far short of assuring that public decisions are better informed. Any effort to find better data for public policy necessarily involves a restructuring of the way public decisions are made so they can and will take account of data. […] However, reorganizations are disruptive to established distributions of power and, therefore, are politically difficult to achieve. They normally only occur when there is an overriding issue." (Innes 1990: 292).

In the case of this research, the approach implies that countries actually considered "developed" may not be so in light of the definitions used here. This may affect their positioning in global politics and may imply resistance to consider this approach. But also some countries ignored or considered currently "underdeveloped", may have a good performance in the system of indicators built here and may promote its use. However, the analysis of the impact of the results found here in terms of distribution of power and politics is totally out of the scope of this paper.

Moreover, incorporation into the debate of sustainable development of indicators that consider guaranteeing basic needs fulfillment for all within ecological boundaries implies a huge change in the perception of global citizens on the impact we have on others and on the environment. As stated by Redclift:

> "People define their 'needs' in ways, which effectively exclude others from meeting theirs, and in the process can increase the long-term risks for the sustainability of other peoples' livelihoods. Most important, however, the process through which we enlarge our choices, and reduce those of others, is largely invisible to people in their daily lives, although understanding this process is central to our ability to behave more 'sustainably'." (Redclift 2005: 70).

and by Maniates:

> "environmentally concerned citizens come to understand […] the "consumption problem." They would see that their individual consumption choices are environmentally important, but that their control over these choices is constrained, shaped, and framed by institutions and political forces that can be remade only through collective citizen action, as opposed to individual consumer behavior. […] Getting there means challenging the dominant view—the production, technological, efficiency-oriented perspective that infuses contemporary definitions of progress—and requires linking explorations of consumption to politically charged issues that challenge the political imagination." (Maniates 2001: 50).

This change of perception also has very huge social and political implications. The study of these implications is also out of the scope of this paper.

[4] Originally in Spanish, translated by the author.

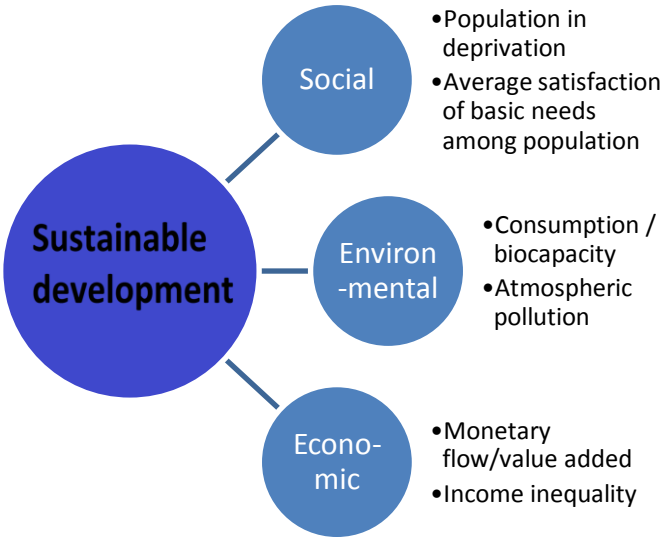
3.6 Summary of the Theoretical Framework

In order to summarize, it is needed to review what the definition of sustainable development, the included dimensions and the considered sub-dimensions are in order to verify if there are "sustainably developed" countries.

In contrast with the current dominant approach that defines as "developed" countries those that have high levels of GDP per capita, the aim of this paper is to define as "developed" countries those that are "sustainably developed". Sustainable development is a desired state that guarantees that basic needs are met for all, that provides economic means for human well-being, within ecological limits. Given this definition, a "sustainably developed" country is one that performs well in the three implied dimensions of sustainable development: social, economic and environmental.

Moreover, as each of the three dimensions is multi-dimensional in essence, some sub-dimensions are considered for each dimension as described in the figure below:

Figure 1: Summary description of sustainable development



Consequently, sustainable development is measured in this paper through a set of multi-criteria indicators.

Finally, in line with the knowledge about politics of indicators, this proposal is done as a proposal to start an interactive discussion that may only be relevant in the policy arena if it involves participation of relevant stakeholders and is part of some processes of social and political change.

Chapter 4
Methodology

4.1 Indicators of sustainable development

The main objective of this paper is to identify whether there are "sustainably developed" countries. A "sustainably developed" country is one that performs simultaneously well in the social, economic and environmental dimensions.

In order to identify the good performers then indicators and limits on what a good performance is need to be established on each dimension. In order to do so, two indicators are chosen in each dimension with corresponding limits. Consequently, a "sustainably developed" country is one that fulfills all the minimum criteria set by the limits on each indicator for all the dimensions.

Two scenarios are built to evaluate how results change according to different limits. These two scenarios are called the Minimum Case and the Best Case Scenarios (called also MCS and BCS respectively). The MCS is determined by limits that are more close to current state on each dimension and the BCS is a more desirable situation according to selected literature.

4.1.1 What are the social dimension indicators?

In the social dimension the aim is to verify which countries are guaranteeing a certain level of basic needs fulfillment for most of their population. In line with the previous statements, the Multidimensional Poverty Index is considered in order to see how many people in that country are deprived in those dimensions that define poverty in a multidimensional approach (UNDP. 2010). The index considers dimensions in three categories: health, education and living standards.

In addition, a measure of life expectancy at birth is considered since this is an indirect estimator of the satisfaction of basic needs as an average among a population (Herrera et al. 2004: 24). The second indicator complements the first one by taking into account the level of satisfied basic needs among the whole population, so not only those in deprivation but also evaluating the situation of those who are not in a situation of extreme deprivation is considered.

- Multidimensional Poverty Index (index, value): "Percentage of the population that is multidimensionally poor adjusted by the intensity of the deprivations" (UNDP 2011: statistical tables)
- Life expectancy at birth (years): "Number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life" (UNDP 2011: statistical tables)

When the time comes to specify which the desired levels are for these indicators, a difficult decision comes into place. It would be desirable to have no persons living under poverty and that all persons could live as long as they wish. However, these desires are not realistic. Based on this, limits are considered based on reality. This means that the average among all considered countries is the expected level for a country to have in the MCS; and on the BCS, the limit is the average level of the considered countries with very high level of human development[5] (UNDP 2011).

4.1.2 What are the environmental dimension indicators?

In the environmental dimension the aim is to verify which countries are having consumption and production levels within ecological limits. Given that, the national ecological footprint per capita divided by the global biocapacity per capita has been selected as indicator of the relationship of their consumption and production behavior related to biologically productive land levels given by the ecosystem (UNEP 2012). In the same line, total greenhouse gas emission per capita has been selected to evaluate the relationship between countries and the atmosphere.

- National ecological footprint per capita (hectares): "Amount of biologically productive land and sea area that a country requires to produce the resources it consumes and to absorb the waste it generates" (UNDP 2011: statistical tables)
- Biocapacity (hectares): "The capacity of ecosystems to produce useful biological materials and to absorb waste materials generated by humans, using current management schemes and extraction technologies" (UNEP 2012: 506)
- Carbon dioxide emissions per capita (tonnes): "Human-originated carbon dioxide emissions stemming from the burning of fossil fuels, gas flaring and the production of cement, divided by midyear population" (UNDP 2011: statistical tables)
- Other Greenhouse gas emissions per capita (tonnes): "Emissions from methane, nitrous oxide and other greenhouse gases including hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride, divided by midyear population. Carbon dioxide emissions are not included" (UNDP 2011: statistical tables)

[5] According to the UN, human development is measured by the Human Development Index. The Human Development Index (HDI) is a "composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living" (UNDP 2011: statistical tables). A country with very high human development has a HDI higher than 0.79, a country with high human development has a HDI between 0.79 and 0.698, a country with medium human development has a HDI between 0.698 and 0.52; a country with low human development has a HDI lower than 0.52.

- Total greenhouse gas emissions per capita (tonnes): it is the sum of the two previous emission's measures

In the case of the total greenhouse gas emissions per capita, there is still a debate on the exact maximum value that will prevent us from going into an environmental catastrophe. However, limits are considered in line with the Contraction&Convergence (Climate Change Connection.). This proposal considers a convergence towards 4 tonnes per person –which is the global average- as first step and it is set as limit in the MCS. Then the proposal establishes a contraction to 2 tonnes per person –which are sustainable levels- and this is set as the limit to the BCS (Climate Change Connection.).

For the national footprint per capita the limit for the MCS is the average national footprint per capita of all the considered countries; and the limit for the BCS is the available global biocapacity per capita, since this is the limit that shouldn't be surpassed in order to be sustainable. This approach follows the logic of the Contraction and Converge proposal (Climate Change Connection.).

4.1.3 What are the economic dimension indicators?

In the economic dimension the aim is to verify which countries are guaranteeing a certain level of monetary flow and income distribution within a country. Accordingly, the considered variables are GNI per capita and the Gini Coefficient.

- GNI per capita (Constant 2005 PPP$): "Aggregate income of an economy generated by its production and its ownership of factors of production, less the incomes paid for the use of factors of production owned by the rest of the world, converted to international dollars using purchasing power parity (PPP) rates, divided by midyear population" (UNDP 2011: statistical tables)
- Income Gini Coefficient (index, value): "Measure of the deviation of the distribution of income (or consumption) among individuals or households within a country from a perfectly equal distribution. A value of 0 represents absolute equality, a value of 100 absolute inequality" (UNDP 2011: statistical tables)

For the case of the considered limits, as argued by the Easterlin and other similar paradoxes, higher levels of GDP per capita, once a certain level is surpassed, do not bring higher levels of happiness in the long term (Easterlin 2011) or as expressed by the World Bank, "above a country average of $10.000 to $15.000 per capita, further growth does not translate into greater well-being" (The World Bank 2012: 6). Moreover, as shown in the graphs of the "Inclusive Green Growth report", countries with GDP per capita (PPP, 2005) above $10.000 per capita do not show significant improvements in terms of poverty, female literacy and mortality rate –except in a few outlier cases- (The World Bank 2012: 5).

Although it is understood that GDP and GNI are different measures, for the purposes of the exercise proposed in this research paper the limit for GDP considered by these paradoxes is considered as equivalent to a GNI limit. The reason why the GNI per capita was chosen is that there were more available data for more countries on GNI per capita than on GDP per capita in the database used for this paper (UNDP 2011: statistical tables).

Given these points, a value of $10.000 per capita (PPP, 2005) is established as the GNI per capita limit in the MCS. In the BCS, the limit that is considered is the average of the countries with very high human development index which is ~$14k per capita, also aligned with the Easterlin range given above.

For the case of the Gini Coefficient, the same approach as for the social indicators is followed: the general average of the considered countries as the MCS and the average of the very high human development index countries (UNDP 2011) as the BCS.

4.1.4 Summary table of selected indicators

Table 1: Selected indicators and limits

Dimension	Indicator	Limits MCS	Limits BCS
Social	Multidimensional Poverty Index	<0.094 (avg. 102 considered countries[6])	<0.010 (avg. very high HDI countries)
	Life expectancy at birth	>71.3 years (avg. 102 considered countries[4])	>79.3 years (avg. very high HDI countries)
Environmental	National footprint per capita	<3ha per capita (average global national footprints)	<1.8ha per capita (global biocapacity)
	Total greenhouse gas emissions per capita	<4 tonnes per capita	<2 tonnes per capita
Economic	GNI per capita	>$10k per capita	>~$14k per capita
	Gini Index	<40% (avg. considered countries)	<34% (avg. very high HDI countries)

[6] This number refers to the 102 countries finally included in the SDR as explained in Section 4.1.5.

All these selected indicators and limits were established in order to answer the research question (to evaluate whether there are "sustainably developed" countries). They were chosen in a way that may make the methodology of the paper as simple as possible to directly find the response to the question. Consequently, its simplicity is deliberate. However, the results presented in this paper as well as the selected set of indicators and limits should be considered preliminary since they may change as the debate on each of the arguments used for the current selection change.

4.1.5 Sources of information and resulting data

Table 2: Indicators and sources of information

Indicator	Sources of information	Year of data
Multidimensional Poverty Index	(UNDP 2011), Own calculus	2000-2010 (Data for most recent year available for each country)
Life expectancy at birth	(UNDP 2011)	2011
National footprint per capita	(UNDP 2011)	2007
Global biocapacity per capita	(UNEP 2012)	2002
Carbon dioxide emissions	(UNDP 2011), (Climate Change Connection.)	2008
Greenhouse gases emissions	(UNDP 2011)	2005
Limits total greenhouse gas emissions	(Climate Change Connection.)	2010
GNI per capita	(UNDP 2011)	2011
Limits GNI per capita	(The World Bank 2012)	2005
Gini Index	(UNDP 2011),(CIA. 2012)	2000-2011 (Data for most recent year available for each country)

All indicators were initially taken from the Human Development Report 2011 (UNDP 2011). However, for several countries data were missing on the Gini Coefficient and the Multidimensional Poverty Index (MPI).

For the Gini Coefficient, some missing data were completed with the data given by the CIA (CIA. 2012).

For the MPI, the missing data was not possible to be replaced from other sources. Given that, for the case of the countries with very high human development index, it was assumed that their MPI value is the same as the average value of the index for the group of countries with very high human development index (UNDP 2011). This may not be correct, but is considered as

a first estimate in order to be able to do the exercise. It is important to have this value for this full group of countries since many of them are now considered "developed" countries based on GDP/GNI estimates, so not including these countries may leave out important information for the analysis. Other countries with no MPI were eliminated.

Countries for which the full set of data couldn't be found were eliminated. Given that, 102 countries were considered for the analysis (around 50% of the total amount of countries in the world).

Full data on the 102 countries are available in the Appendix 4.

4.2 Description and Analysis of the Sustainable Development Ranking

Once all the indicators and the limits for all the considered countries were available, a ranking was built. The rationale behind the ranking is the need to identify if there are "sustainably developed" countries according to the criterion set in this paper. The proposed ranking is called the Sustainable Development Ranking, also called SDR. The construction of the ranking is described below:

1. On each indicator, each country was graded with a 1 (good performance) or a 0 (bad performance) according to the value of its indicator compared to the set limit. If it was a maximum limit, those countries that surpassed the limit had a 0 and those that were below had a 1. If it was a minimum limit, it was the other way around. The simplicity of the approach is led by the objective of the paper, which is to verify whether any country fulfills all the minimum criteria for being classified as "sustainably developed".
2. For each dimension, the resulting grades were added. This led to a 0-2 range on each dimension. Performing well in a dimension implies that the performance is good in the two indicators of the dimension at the same time. It is important to clarify here that the three dimensions have the same weight in the overall mark. The possibility of changing these weights and analyzing the related results is left for future research.
3. For each country, the resulting grades of each dimension were added. This led to a 0-6 range for the overall grade per country. A "sustainably developed" country according to the SDR is one that has an overall 6 grade and a 2 in each dimension.
4. Each country received an overall grade based on the two scenarios, one based on minimum limits (MCS) and one based on best limits (BCS).
5. The results were then compared to the GNI per capita ranking.
6. The results were also compared to the IWI ranking.

To clarify the grading system, an example is given below.

Table 3: Example SDR grading system, sub-dimensions

		Economic		Social		Environmental	
		Gross National Income (GNI) per capita	**Gini Coefficient**	**Multidimensional Poverty Index**	**Life expectancy at birth**	**Ecological footprint**	**Total GHG emissions per capita**
		(Constant 2005 PPP$)	0-100 index	index	(years)	(hectares per capita)	(tonnes)
MCS							
	Limit	10.000	40	0,094	71,3	3,0	4
		1=higher	1=lower	1=lower	1=higher	1=lower	1=lower
United States	indicators	43.017	40,8	0,010	78,5	8,0	21,0
	grades	1	-	1	1	-	-
Jordan	indicators	5.300	37,7	0,008	73,4	2,1	4,0
	grades	-	1	1	1	1	1
Ethiopia	indicators	971	29,8	0,562	59,3	1,1	1,2
	grades	-	1	-	-	1	1

Table 4: Example SDR grading system, dimensions and overall

	MCS			
	Economic	**Social**	**Environmental**	**Overall**
	range 0-2	range 0-2	range 0-2	range 0-6
United States	1	2	-	3
Jordan	1	2	2	5
Ethiopia	1	-	2	3

Table 5: Example SDR grading system, distance to meet limits

	MCS - Comparison actual vs limit (value/limit-1)					
	GNI per capita	**Gini Coefficient**	**MPI**	**Life expectancy at birth**	**Ecological footprint**	**Total GHG emissions**
United States	330%	3%	-90%	10%	167%	425%
Jordan	-47%	-5%	-91%	3%	-32%	-1%
Ethiopia	-90%	-25%	500%	-17%	-63%	-70%

The numbers in black are those indicators for which limits are met, this means the indicators obtained a 1 grade.

The numbers in red are those that do not satisfy the limits, this means the indicators obtained a 0 grade. The percentage indicates by how much the value of the indicator is surpassing the limit.

The yellow boxes are those indicators that meet the limits but by a difference of 10% or less, leaving the indicator to a high risk of changing the grade on future assessments.

Since some limits set a minimum and some limits set a maximum, and that for both cases the formula is the same: value/limit-1, then positive or negative signs of the resulting percentage difference cannot be directly analyzed as positive or negative effects.

The analysis of the results of the Sustainable Development Ranking for the two scenarios is done considering the lenses of the Problem Statement. This implies that the following questions are done when looking at the results:

- What is the global performance of sustainable development?
- What are the top performers?
- How is the relation between dimensions?

4.3 Description and Analysis of ranking comparisons

The results of the Sustainable Development Ranking (SDR) were compared to other two rankings: GNI per capita and IWI. The reasons why these two rankings were considered are the following:

- Comparison with GNI ranking: The GNI per capita ranking is aligned with the current definition of developed countries (GNI based). The goal of the comparison is to verify whether the currently called "developed" countries are in fact "sustainably developed", based on the results of the SDR which aims to re-define what a "developed" country is.
- Comparison with IWI ranking: The IWI is a new proposal of the UNEP and the UNU-IHDP to track sustainable development through its three dimensions: social, economic and environmental. This proposal seems to do something similar to the objectives of the SDR. Consequently, the goal of the comparison is to verify whether the results are similar.

The data set to build the GNI per capita ranking is the same as the one used in the SDR (UNDP 2011: statistical tables). The source of data for the IWI ranking is the Inclusive Wealth Report 2012 (UNEP and UNU-IHDP 2012).

When comparing two rankings, the comparison is done only among the countries for which all data exist in both rankings. For example, the IWI was only calculated for around 20 countries, so its top 10 is misleading if compared to the top 10 of the SDR which considers 102 countries. Given that, the comparison is done only among the 20 countries considered for the IWI ranking. The same applies to the comparison between the SDR and the GNI per capita.

The analysis of the rankings' comparison is done considering the lenses of the Theoretical Framework and the Problem Statement. Before doing this, a brief description of what the ranking is about is given.

The lenses of the Theoretical Framework are used in order to analyze whether the construction of the other rankings are done through the same lenses as the one used to build the SDR, since this may explain partly the differences in the results. Given so, other rankings are screened verifying what definition of sustainable development is used, what dimensions and subdimensions are used, if minimum levels of basic needs and maximum ecological limits are considered and what measurement method is used.

The lenses of the Problem Statement are used to analyze the results themselves. This implies that the following questions are done when looking at the results:

- Does it measure sustainable development?
- What are the top performers?
- How is the relation between dimensions?

4.4 Limitations of the methodology

Regarding the Theoretical Framework of this paper, used definitions for sustainable development, included dimensions, selected indicators and limits on each dimensions, although justified, they are all evaluative, using Gasper's definition: "With evaluative meanings—for example development defined as high quality of life—people usually must share ethical values, at least to a substantial degree, in order to agree on application." (Gasper 2004). For example, do we all agree that all human beings should be entitled by basic needs fulfillment?; do we all want to preserve nature's functioning in order to avoid a catastrophe or do we all believe that if a catastrophe is to happen, then it should…; among several others. A normative choice was taken for each case based on the given justifications. However, all this could be challenged as part of future research and several other definitions, indicators, limits could be chosen.

It is important to acknowledge that a relevant aspect that was left out in the chosen dimensions was the political situation of each country. The political situation refers to a multi-dimensional aspect that includes political rights, gender issues, civil rights, civic participation, and democracy, among others. This can lead to identify as a "sustainably developed" country to a country that is a good performer in the economic, social and environmental dimensions but that has an authoritative regime, civil wars, among other characteristics of a really bad performance in the political dimension. Although this is a main weakness of the approach, this is left for further research.

Regarding the Methodology of this paper, there is a deliberate simplicity in the proposed methodology with the objective to answer the questions based on the Problem Statement and Theoretical Framework. However, further variations to the systems of indicators built here could be done as further

research. For example, incorporate more variations to the 0/1 grade system; give different weights to the different dimensions instead of the equally weighted dimensions proposed here; choose different indicators, limits, number of indicators, number of dimensions; among other.

Another limitations is that despite all the 3 dimensions are multidimensional, each dimension is represented by only 2 indicators. Although the selection tried to incorporate those indicators that were broadly accepted as important in each dimension, many important aspects were left out. However, the selection of 2 indicators was enough to probe the usefulness of the proposed methodology and to give a first answer to the research question, also due to time constraints and data availability. Analysis of the results of the SDR due to variations in the selected indicators could be an interesting future research project.

In the case of the SDR, 102 countries were considered, leaving out a several number of countries. This may or may not be hiding significantly good or bad performances regarding sustainable development for those not considered. So it would be relevant to run again the SDR with the full set of countries. However, this depends on the data availability for all the indicators for all the countries. This constraint reminds of the importance of public availability of data in policy making and research.

Average indicators are considered for all the countries. This approach may be hiding important inequalities or distributional effects of the indicators within each country. However, due to specific objective of the paper, it was not possible to study these variations.

A hidden assumption of this paper is that indicators taken from the same sources are actually comparable. However, it was not checked and this may not be true in all the cases. To give the MPI as example, the statistical table from where it was taken clarifies that since not all indicators were available for all countries, some adjustments were made that are not equal in all the country cases; consequently, cross country comparison should be made with caution (UNDP 2011). In the case of this paper, direct comparison is done and conclusions are made anyway. However, a deeper analysis on data sources should be done as part of further research.

The lack of complete information from the same source may imply slight variations in data collection methods and considerations that may also imply slight variations in the results. A profound deep dive into the methodology and considerations of the data sources has not been done in this paper.

The value of the MPI is being assumed for some countries (especially in North America and Europe). This approach may be hiding realities that should be taken into account in this paper. Moreover, the assumption made here could be other, i.e. a minimum or maximum available for the region. However, variations on the assumption to complete the MPI data for these countries were not done in this paper and could be an interesting modification to verify results.

Finally on the limitations of the methodology to build the SDR, a detailed discussion on pros and cons of each indicator and limits was left for future research.

Regarding the comparison of rankings, the framework to do the comparisons was developed taking into account the objective of this paper and the definitions used here for the main concepts of analysis, such as sustainable development. However, a deep analysis of the methodology to elaborate the GNI or the IWI was not done. This means that only general conceptualizations and main variables were compared, but not detailed analysis of the functions, calculus, definitions, and full set of variables, among others.

In the case of the IWI, as it was only calculated only for around 20 countries the comparison leaves out relevant information. It would be relevant to do the comparison of the results with the full set of countries as a future research endeavor.

Finally, in this paper, a set of indicators is proposed to evaluate sustainable development in different countries. However, as stated by Innes, for any proposed indicator to be considered and become useful it needs to be part of a broader political process (Innes 1990). The aim of this paper is not to propose such relevant indicator but to be part of a debate on new ways to track sustainable development in the academic arena.

Chapter 5
Results and Analysis

5.1 Sustainable Development Ranking

5.1.1 Analysis of Sustainable Development Ranking's results

- What is the global performance of sustainable development?

The results of the ranking acknowledge the social, economic and environmental problems rose at the Problem Statement by showing an overall poor performance in all the dimensions, as summarized in Table 6.

In the MCS, the best performing dimension in average for the considered countries is the social dimension. This dimension has an average of 1.3 over a range of 0 to 2. The economic and environmental dimensions have the same level, 1 in the 0-2 range.

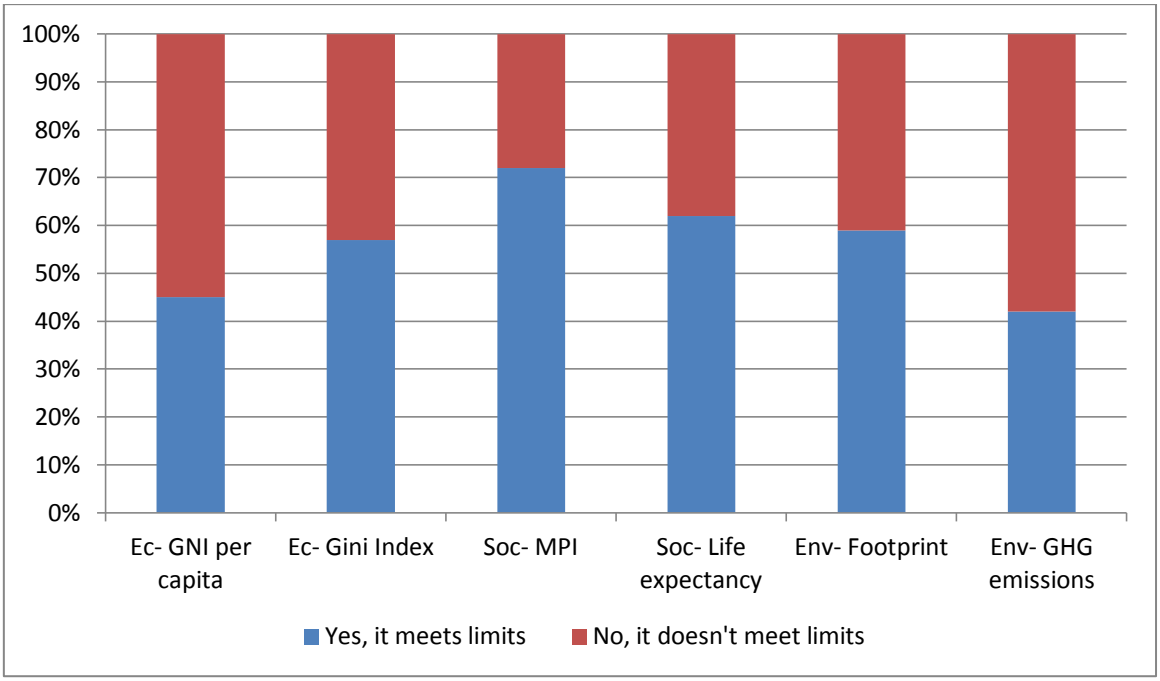
In the BCS, the situation gets expectedly worse with the social and economic dimensions having the best grade among the three but this value being 0.7 over a 0-2 range. The environmental dimension gets a 0.6 over the 0-2 range in the BCS.

These results show the very low overall performance in the three dimensions of sustainable development of current global system. It is interesting to see in both cases, but mainly in the MCS, that although the dominant view nowadays is aligned with higher levels of economic performance, the economic is not the best performing dimension according to the SDR.

Table 6: Grading ranges per dimensions and overall for the SDR

Average	Economic	Social	Environmental	Overall
Range	0-2	0-2	0-2	0-6
MCS	1.0	1.3	1.0	3.4
BCS	0.7	0.7	0.6	2.0

Figure 2: MCS: # of countries meeting the limits on each indicator



In the MCS, the graphic above shows that globally the best performing indicator is the Multidimensional Poverty Index and the worst performing indicator is the GHG emissions per capita. It is surprising to notice that although the current dominant definition of development is related to levels of GNI/GDP per capita, the GNI per capita is the second worst performing indicator with only around 45% countries worldwide meeting the limit of $10k per capita (PPP, 2005).

In the MCS, there are no countries behaving badly in all indicators at the same time. At least one indicator records well in all the cases. So there are 0 countries with a 0 overall mark. However, there are three countries with an overall mark of 1. These countries are described below:

Table 7: MCS: Examples of countries with lowest grades for the SDR

Country	Economic dimension	Social dimension	Environmental dimension	Good performance
Namibia	0	0	1	Footprint
Angola	0	0	1	Footprint
Nepal	0	0	1	Total GHG emissions

In the BCS, there are 11 countries with a 0 overall mark and 27 with an overall mark of 1. Adding these two groups, 38 countries over the 102 cases represent 37% of poor performance in terms of sustainable development.

- What are the top performers?

There is no country that performs well in all dimensions at the same time (overall mark of 6) even by the minimum set of requirements in the MCS, so there is no country meeting all the criteria to be classified as a "developed" or "sustainably developed" country.

In the MCS, there are 7 countries that meet 5 out of the 6 criteria which may be considered as the "most developed" countries in terms of sustainable development. A summary of the performance of these countries are found below:

Table 8: MCS: Examples of countries with highest grades for the SDR

Country	Economic dimension	Social dimension	Environmental dimension	Bad performance
Hungary	2	2	1	Total GHG emissions
Serbia	2	2	1	Total GHG emissions
Albania	1	2	2	GNI per capita
Armenia	1	2	2	GNI per capita
Jordan	1	2	2	GNI per capita
Egypt	1	2	2	GNI per capita
Viet Nam	1	2	2	GNI per capita

The limit in the case of the GNI per capita was established based on the graphics on poverty, female literacy and mortality rate vs GDP per capita on The World Bank report and the comments placed there on the Easterlin and similar paradoxes (The World Bank 2012). However, when analyzing the cases of Albania, Armenia, Jordan, Egypt and Viet Nam shown above, it is found that good performance in terms of the social and environmental dimensions, and even in the distribution of income (shown by the Gini Index), can be achieved although these countries have GNI per capita lower than the limit established for this exercise. This result challenges the used criteria to set the limit, suggesting a possibility to set as desired a lower level of GNI per capita. It also challenges the position that argues for higher levels of GNI or GDP per capita in order for a country to achieve a certain level of social development. This result calls for further research on both ideas.

Table 9: MCS: Distance to meet limits for topping countries in SDR

	Comparison actual vs limit (value/limit-1)					
	GNI per capita	Gini Coeffi-cient	MPI	Life expectancy at birth	Ecological foot-print	Total GHG emis-sions
Hungary	66%	-21%	-83%	4%	0%	77%
Serbia	2%	-29%	-97%	4%	-20%	83%
Albania	-22%	-13%	-95%	8%	-36%	-39%
Armenia	-48%	-22%	-96%	4%	-42%	-23%
Jordan	-47%	-5%	-91%	3%	-32%	-1%
Egypt	-47%	-19%	-74%	3%	-45%	-13%
Viet Nam	-72%	-5%	-10%	5%	-53%	-31%

Information about the values of each indicator for the top 7 countries is found in the Appendix 2.

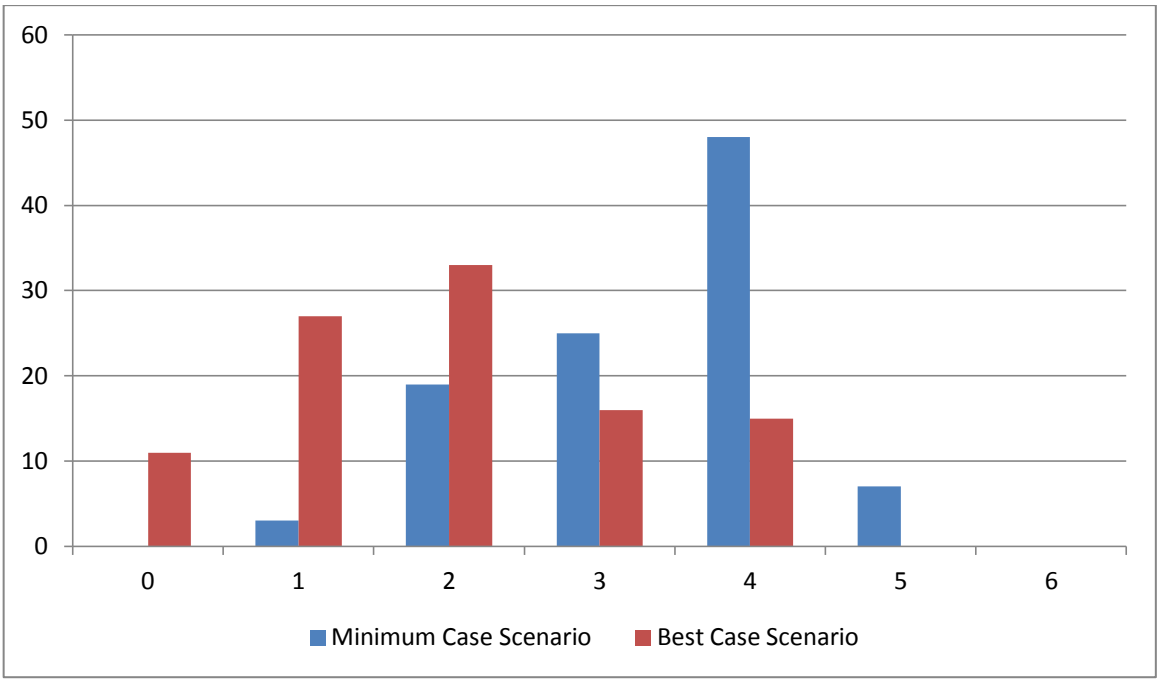
The previous chart shows how strong the grades for the different dimensions are for the "most developed" countries, according to the MCS-SDR.

All the 7 countries have 5 indicators that are black, the 5 leading to the overall 5 grade. There is one indicator in which these countries performed badly (the red one), but also, they all have at least 1 other indicator with a value that is really closed to the desired limit (yellow box), implying a potential risk to lose their current grade in future years.

Among the top 7, Albania is closest to meeting the full set of criteria since it has the lowest distance to the limit of the variable in which is performing badly.

In the BCS, there are no countries performing as well, 4 being the highest grade among countries.

Figure 3: Distribution of the overall marks among countries for the SDR



The graph above shows how the distribution of overall mark among countries is better in the Minimum Case Scenario and worst in the Best Case Scenario. Moreover, in the MCS the majority of the countries have an overall mark of 4. This situation gets worst in the BCS where most of the countries have a 2 or a 1 as overall mark.

- How is the relation between dimensions?

From the figures below two main conclusions are found.

Firstly, although there are a slightly higher number of countries with a 2 overall mark in the social dimension for those countries with a 2 overall mark on the economic dimension, there is no clear trend that higher levels of economic dimension performance imply better social dimension performance.

Secondly, the figure shows that as economic dimension performance improves the environmental dimension performance worsens.

Figure 4: # countries according to marks on the social and economic dimension in the SDR-MCS

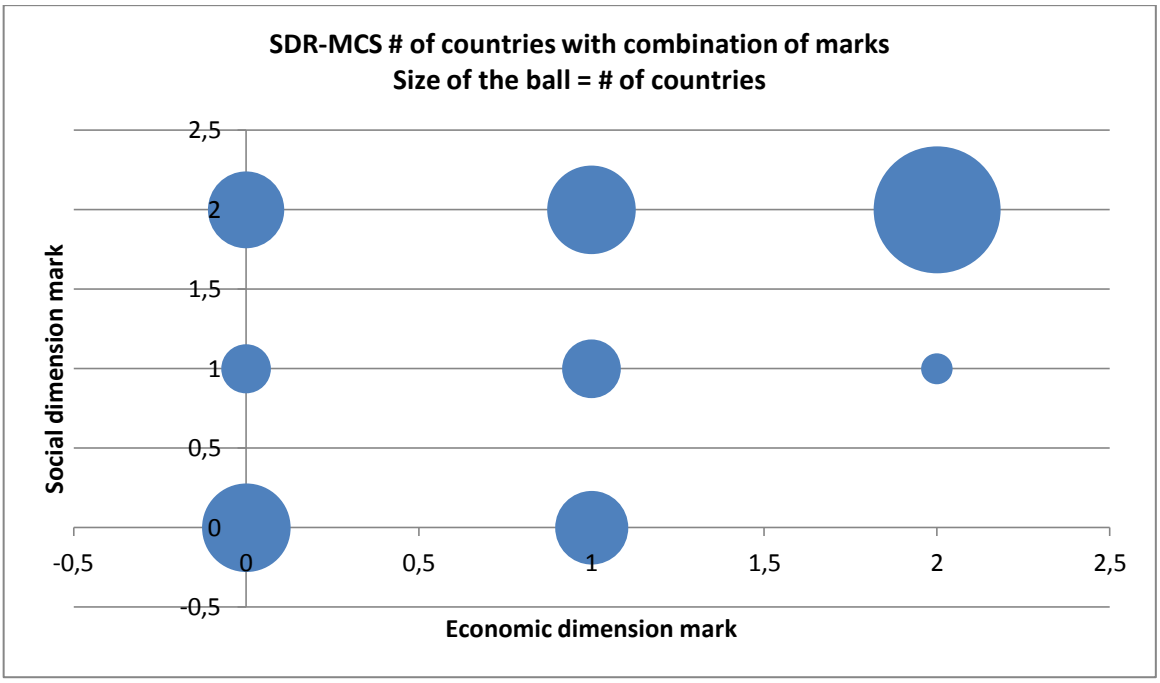
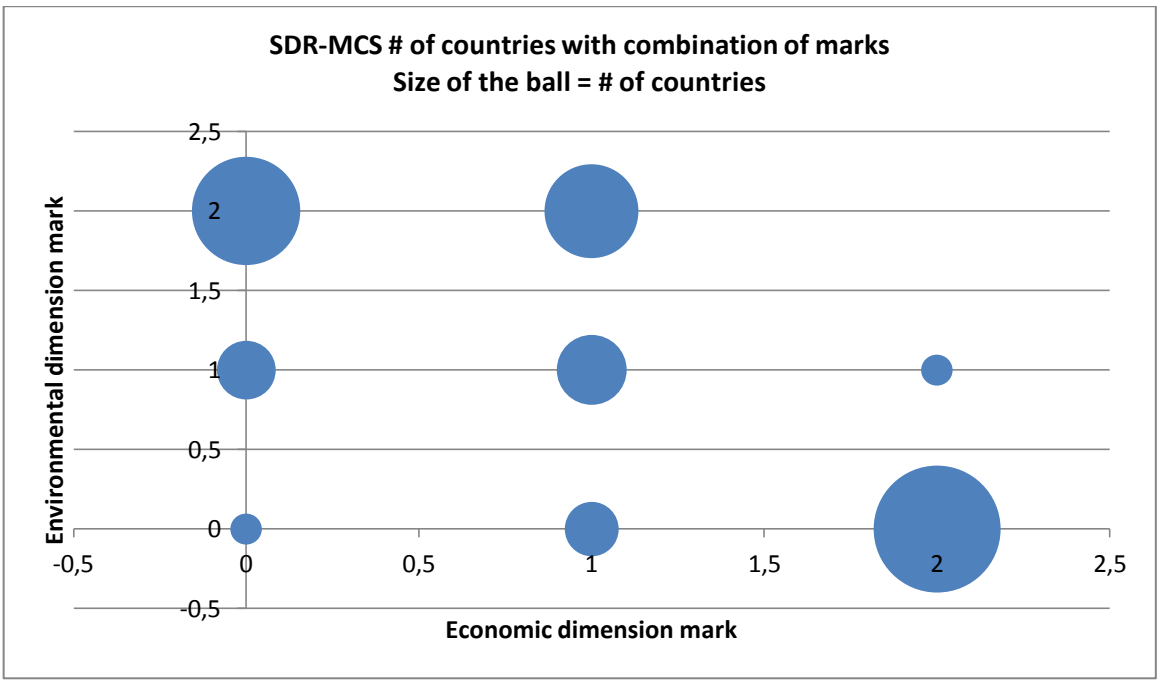


Figure 5: # countries according to marks on the environmental and economic dimension in the SDR-MCS



Consequently, it can argued that if the objective of the economic dimension is to increase indefinitely the levels of the GNI per capita, then it will always imply a bad performance in the environmental dimension. However, if results of the 5 countries analyzed above are considered (Albania, Armenia, Jordan, Egypt and Viet Nam) and the objective of the GNI per capita is

changed to a lower and defined level, then it may be the case that a good performance in the economic dimension can co-exist with a good performance in the environmental dimension.

These results support the claim for downscaling or de-growth based on the fact that infinitely increasing consumption and production levels as the main objective of the economic system is not environmentally sustainable at all, as it does not respect ecological limits, as also stated by ecological economists (such as: (Schneider et al. 2010, Martinez-Alier 2009: 1099)).

5.1.2 Summary of Sustainable Development Ranking's analysis

The results of the ranking acknowledge the social, economic and environmental problems rose at the Problem Statement. They show an overall poor performance in all the dimensions. Moreover, most of the countries in the MCS have an overall mark of 4 and most of the countries have a 2 or a 1 as overall mark in the BCS. This leads to a very delicate conclusion, since the world is facing really poor trends towards sustainable development and this may imply passing critical ecological thresholds with the catastrophic risks implied as described in other sections.

In both cases, there are no "sustainably developed" countries, according to the criteria set in the SDR (overall mark of 6). In the MCS, there are 7 countries that meet 5 out of the 6 criteria which may be considered as the "most developed" countries in terms of sustainable development.

It is interesting to see in both scenarios, but mainly in the MCS, that although the dominant developmental view nowadays is aligned with higher levels of economic performance, the economic is not the best performing dimension according to the SDR. Even more, the GNI per capita is the second worst performing indicator with only around 45% countries worldwide meeting the limit of $10k per capita (PPP, 2005) in the MCS as example.

In the MCS, when analyzing the cases of Albania, Armenia, Jordan, Egypt and Viet Nam (which are among these 7 countries), it is found that they have a good performance in the social and environmental dimensions, and even in the distribution of income indicator (Gini Index), although these countries have GNI per capita lower than the limit established for this exercise. This result challenges the used criteria to set the limit, suggesting a possibility to set as desired a lower level of GNI per capita. It also challenges the position that argues for higher levels of GNI or GDP per capita in order for a country to achieve a certain level of social development.

Moreover, if the objective of the economic dimension is to increase indefinitely the levels of GNI per capita, then it will always imply a bad performance in the environmental dimension. However, if the objective of the economic dimension is changed to be a defined and lower level of GNI per capita, then it may be the case that a good performance in the economic dimension can co-exist with a good performance in the environmental dimension. These results call for further research.

Summarizing, the SDR provides a useful tool to measure and track progress towards sustainable development in its three dimensions globally and individually.

5.2 Comparison with Gross National Income per capita ranking

5.2.1 Theoretical comparison

GDP per capita was not developed as a measure of sustainable development. It was developed as a measured of economic production:

> "GDP per capita was […] constructed by Kuznets to measure the level of economic production and to provide guidance to policy-makers on which sectors of the economy are growing and which are slowing, and the throughput that is used by the economy. It was, therefore, always meant to be used strictly as an indicator for economic production. But somewhere along the line, GDP came to be used by policy-makers to measure the overall progress and performance of a nation, and that implied the well-being of its citizens." (UNEP and UNU-IHDP 2012: 3).

Then, GDP per capita was used as the main criteria to classify countries as "developed" or "not developed". Although GDP and GNI are different, they are considered equal in light of the approach followed by this paper.

GNI per capita does not consider sustainable development. Moreover, the used definition of sustainable development was developed many years after the system of national accounts.

GNI per capita only measures economic production in monetary terms. It does not take into account directly income distributional patterns, social aspects and environmental factors. However, it may be possible to say that it considers labour compensation costs and raw material prices.

Minimum levels of basic needs fulfillment and maximum ecological limits are not considered in the GDP/GNI per capita indicators.

5.2.2 Results comparison

- Does it measure sustainable development?

The GNI per capita ranking does not consider the three dimensions of sustainable development; it rewards only countries in terms of higher levels of economic production. Moreover, its results do not represent environmental, social or income distribution problems described at the beginning of this paper.

Consequently, its results show cases of countries topping the rank which have very bad performances in the environmental dimension and in the Gini Index. It is interesting to notice that for the top 10 countries according to the GNI per capita, they all have a very good performance in the social dimension, almost in all cases for both scenarios.

Table 10: SDR results for top 10 countries according to GNI per capita

		SDR			
		MCS			
	GNI per capita 2011	Ec	Soc	Env	Overall
Qatar	top 10	1	2	0	3
Singapore	top 10	1	2	0	3
Luxembourg	top 10	2	2	0	4
Norway	top 10	2	2	0	4
United States	top 10	1	2	0	3
Switzerland	top 10	2	2	0	4
Netherlands	top 10	2	2	0	4
Sweden	top 10	2	2	0	4
Austria	top 10	2	2	0	4
Canada	top 10	2	2	0	4

- What are the top performers?

There is no country out of the top 10 in the GNI per capita ranking that is among the top 7 countries[7] in the SDR-MCS. It is important to notice that from the top 10 countries according to the GNI per capita ranking, none of them have an overall grade in the SDR higher than 4. There are even countries topping the GNI ranking that have a 3 as overall mark in the SDR-MCS. Given that, none of them are the best performing countries in terms of simultaneous social, environmental and economic performance. These results support the fact that the GNI per capita does not measure social and environmental factors, but it is focused on economic production. This also confirms that the GNI per capita hides negative social and economical distributional effects and has no consideration of the environmental degradation.

For the case of the top 10 according to the GNI per capita ranking, the chart below shows that the distances to meet the set limit are really big in the two indicators of the environmental dimension. In the case of the Gini Coefficient, the distance is not that big in the ones that are having a bad performance, being 19% the highest. So the aspiration of these countries to be considered "sustainably developed" is far from being easy to achieve.

[7] As there are no developed or "sustainably developed" countries according to the SDR, the "most developed" countries according to the SDR are being compared.

Table 11: Distance to meet limits of the MCS-SDR for top 10 countries according to the GNI per capita[8]

	Comparison actual vs limit (value/limit-1)					
	GNI per capita	Gini Coefficient	MPI	Life expectancy at birth	Ecological footprint	Total GHG emissions
Qatar	977%	4%	-90%	10%	250%	1686%
Singapore	426%	19%	-90%	14%	78%	109%
Luxem-bourg	406%	-34%	-90%	12%	212%	534%
Norway	376%	-35%	-90%	14%	85%	307%
United States	330%	3%	-90%	10%	167%	425%
Switzerland	299%	-15%	-90%	15%	67%	64%
Netherlands	264%	-22%	-90%	13%	106%	224%
Sweden	258%	-37%	-90%	14%	96%	86%
Austria	257%	-26%	-90%	13%	77%	150%
Canada	252%	-18%	-90%	14%	134%	426%

The top 7 countries according to the SDR are located below the 30th position in the GNI per capita ranking, showing how results in terms of what is to be "developed" change when taking into account social and environmental dimensions.

Table 12: Top 7 according to the MCS-SDR compared to the GNI per capita ranking position

	SDR /MCS	ranking GNI per capita 2011
Hungary	top 7	32
Serbia	top 7	45
Albania	top 7	53
Armenia	top 7	63
Jordan	top 7	61
Egypt	top 7	62
Viet Nam	top 7	79

- How is the relation between dimensions?

In order to top the GNI per capita ranking, the objective is to have as much economic production as possible and this implies high levels of natural resources exploitation with the related high potential of surpassing ecological limits. This is the case of the top 10 countries shown above. For the case of social performance, the top 10 according to the GNI per capita ranking all have a good performance in the social dimension.

[8] Explanation on how to read the chart is given in Section 4.2.

5.2.3 Summary of comparison

GNI per capita was not developed as a measure of sustainable development. Consequently, the GNI per capita ranking does not consider the three dimensions of sustainable development. It was developed as a measured of economic production. In order to top the GNI per capita ranking, a country needs to have as much economic production as possible and this implies high levels of natural resources exploitation with the related high potential of surpassing ecological limits.

The analyses and results of this paper also confirm that the GNI per capita hides social effects, economical distributional aspects and environmental degradation considerations, as has already been studied by several authors. Consequently, countries having a bad performance in social, distributional and environmental dimensions may top the ranking.

Given so, the top 10 performers in the GNI per capita ranking are different from the top 7 performers in the MCS in the SDR. Even more, the top 10 are far from reaching the criteria to be classified as "sustainably developed" as defined here. Moreover, the top 7 countries according to the SDR are located below the 30th position in the GNI per capita ranking.

The results show how a country's classification in terms of being "developed" change radically when taking into account social and environmental dimensions.

In the light of these results and with the objective of having sustainable development, it is important to switch the classification of "developed" based in GNI per capita terms to equating a "developed" country with a "sustainably developed" country. However, this holds true if development implies a desired state and if that desired state is sustainable development as defined here.

5.3 Comparison with Inclusive Wealth Index ranking

5.3.1 Theoretical comparison

The objective of the IWI report is to develop a metric that may overcome the weaknesses of the GDP and HDI indicators, by including social and environmental dimensions. This indicator intends to be a measure of sustainable development and to consider its three dimensions: social, environmental and economic.

The proposed indicator is the Inclusive Wealth Index which is calculated based on a country's capital asset base, where this wealth is mainly the value of human, natural and manufactured capital stocks. These capital stocks are called altogether the "productive base of a country". The proposed indicator will help government to target investments to increase the "productive base of a country" and get higher returns on those investments; this productive base will then support human well-being.

There are some quotes highlighting these statements below:

- "The primary objective of the Inclusive Wealth Report is to provide quantitative information and analysis that present a long-term perspective on human well-being and measures of sustainability." (UNEP and UNU-IHDP 2012: 2)
- "The Inclusive Wealth Report (IWR) provides a metric of measurement for sustainable development. While GDP and the HDI are based on a flow concept, inclusive wealth relies on the stocks of different assets: natural capital (natural resources, land, and ecosystem services, etc.); produced capital (machinery, buildings, etc.); and human capital (education, health, skills, etc.), which make up the productive base of a country." (UNEP and UNU-IHDP 2012: 267-268)
- "In this case, we refer to the various capital assets a country is able to accumulate. This asset base is called the productive base of the nation. The productive base forms the basis for sustainable development and provides a tangible measure for governments to use and track over time." (UNEP and UNU-IHDP 2012: 6)
- "Changes in the various capital assets and their contribution towards the inclusive wealth of a country can provide information on where to target future investments in order to get the best returns for increasing the productive base of the country." (UNEP and UNU-IHDP 2012: xxii)

The definition of sustainable development used in the IWR is taken from the report: "Our common future" (World Commission on Environment and Development 1987) which is the same that it is being considered in this paper, as stated in the IWI report (UNEP and UNU-IHDP 2012: 5).

Moreover, the IWI report considers the three dimensions of sustainable development as in this paper: "Integrated framework bringing together the social, economic, and environmental spheres to address the notion of sustainability" (UNEP and UNU-IHDP 2012: 5).

In the table below, the objective is to compare the main variables considered in each dimension for each approach (IWI and SDR). As already highlighted in the limitations (Section 4.4), it is not going to be done a full comparison about the functions and all its related variables for each case, but the main variables considered in each dimension.

Table 13: Analysis of the definitions used in each dimension on the IWI

Concept	Definition	Comparison
Economic	Manufactured capital: It is specified as mainly dependent on output, productivity, investments, among others (UNEP and UNU-IHDP 2012: 282).	The manufactured capital considers quite similar dependents to the selected GNI per capita on the economic dimension of the SDR (output, investments, productivity). However, the IWI report is not including income distribution patterns (as with the Gini Index).
Social	Human capital: It is specified as mainly dependent on the level of educational attainment, labour compensation, employment levels, population, among others (UNEP and UNU-IHDP 2012: 281-282). Health capital: It is specified as mainly dependent on "the years of life remaining of a country's population […] and the value of a statistical life year" (UNEP and UNU-IHDP 2012: 287).	The educational dimension and the years remaining of the IWI report, can be considered quite similar to the educational variables considered in the Multidimensional Poverty Index and the life expectancy indicator that have been chosen in this paper. However, the IWI does not consider variables about living conditions and inside health: nutrition and child mortality as are considered inside the Multidimensional Poverty Index. On the other hand, the SDR does not consider any measure of employment and labour compensations as are being considered by the IWI. Guaranteeing the satisfaction of basic needs is not part of the IWI.
Environment	Natural capital: It is specified as mainly dependent on available physical amount of the natural assets for which a market exists and the related price (UNEP and UNU-IHDP 2012: 281-282). It only considers: agricultural land, forest resources, fisheries, fossil fuels, metals&minerals (UNEP and UNU-IHDP 2012: 283-287).	In the IWI, the environment is considered only when it is a source of resources for which a market exists. Although the finite magnitude of natural resources is acknowledged, levels of pollution, degradation or exploitation over ecological limits are not being comprehensively nor directly considered (UNEP and UNU-IHDP 2012: 25, 232 & 268). Consequently, how to guarantee and not surpass relevant ecological thresholds is not considered.

There are also two differences in the measurement that applies to all dimensions. Firstly, the IWI measures capital stock instead of flow. Secondly, the IWI is a monetary indicator. Multi-criteria indicators are not considered.

In the IWI report, the definition of the social dimension -implied in the human capital- and the definition of the environmental dimension -implied in the natural capital- are more focused on guaranteeing market performance within a framework of sustainable development. However, the full implications of the sustainable development definition as used here, which are guaranteeing basic needs for all within ecological limits, are not considered. The economic dimension -implied in the manufactured capital- is more similar to what it is being considered in this paper, although it does not consider income distributional patterns.

The IWI report considers the same definition of sustainable development and its three constituents than in this paper. However, the full implications of the definition given by the "Our common future" report for its three dimensions are not addressed. The main prospective use of the IWI indicator is to help target more profitable investments, but not guaranteeing the satisfaction of minimum needs for humans within ecological thresholds.

5.3.2 Results comparison

- Does it measure sustainable development?

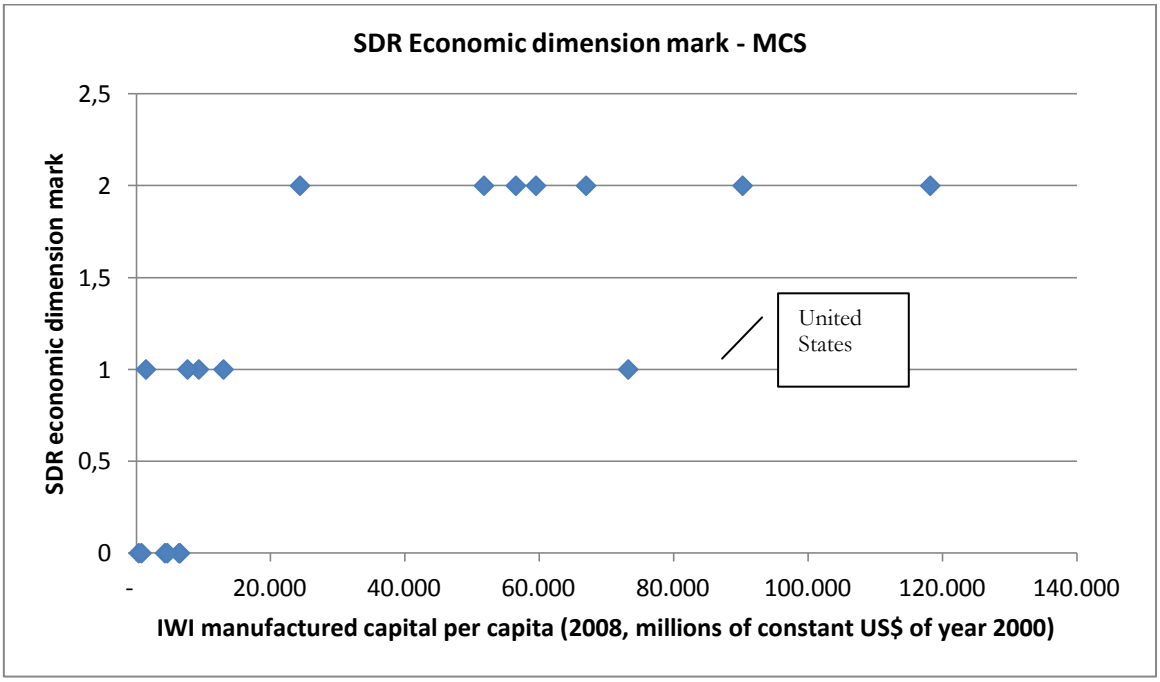
The IWI ranking considers the three dimensions. It calculates the value of the three types of capitals as described by them: manufactured or produced, human and natural. The summary of the overall performance on each dimension is summarized as follows:

> "The majority of the countries in our sample have had an increase in their stocks of manufactured capital per capita. […] Human capital, being the prime capital form that offsets the decline in natural capital in most of the economies, has increased in every country." (UNEP and UNU-IHDP 2012: xxiv).

This implies that the depletion of natural resources are mostly seen as a way to increase other forms of capital, but surpassing ecological thresholds is not seen as a limitation or problem in this approach.

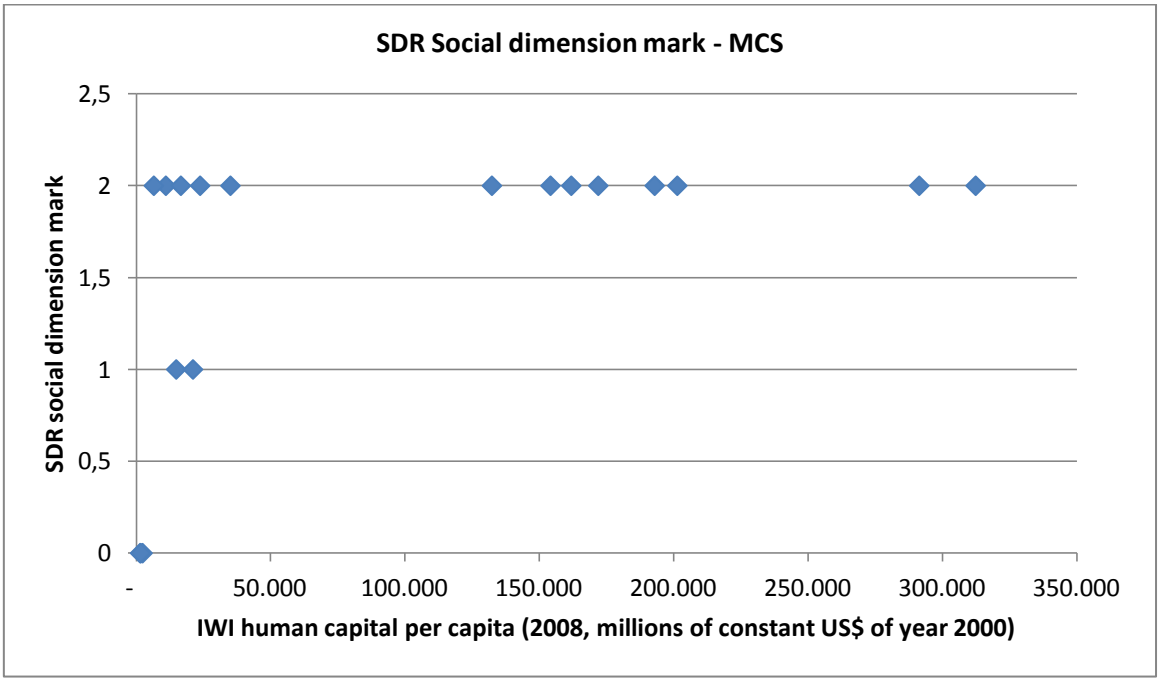
When comparing the results of the IWI ranking with the results of the SDR, some differences are found.

Figure 6: SDR-IWI comparison of the economic dimension results



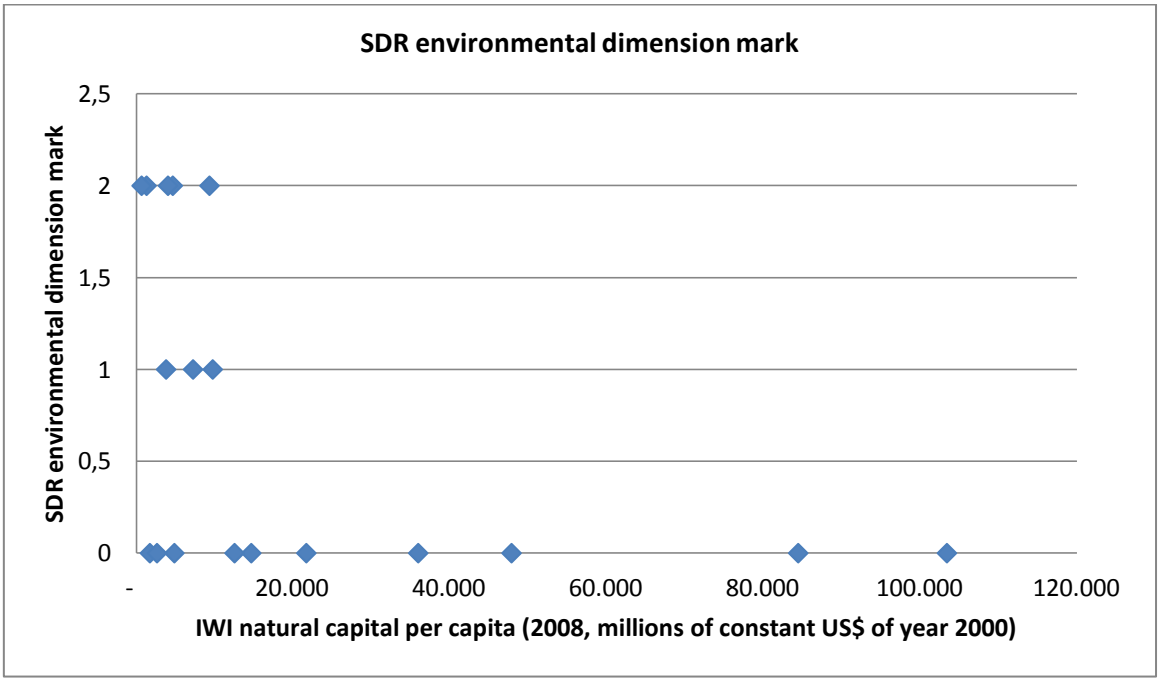
In the case of the economic dimension, most of the countries passing the $10k per capita perform well also in the Gini Index for the SDR, so they have a 2, except for the case of the United States which perform badly in the Gini Index and they have an overall mark in the economic dimension of 1. As the two approaches are similar in general aspects as seen before (they only differ in the stock measure and the lack of consideration of the Gini Index), the results are aligned with what was expected, where countries with higher marks in the economic dimension of the SDR have higher levels of IWI manufactured capital. The only outlier is United States.

Figure 7: SDR-IWI comparison of the social dimension results



In the case of the social dimension, the results are more different mainly due to the different considerations in the definitions given to this dimension. The IWI human capital does not reward countries that have low levels of poverty (in terms of the Multidimensional Poverty Index) and high levels of life expectancy, then there are several countries with 2 as overall mark in the SDR social dimension, that receive comparatively low values of IWI human capital, not showing the good performance in the social dimension of these countries according to the SDR criteria.

Figure 8: SDR-IWI comparison of the environmental dimension results



Finally, the case of the environmental dimension is where the differences are even higher. Also the different results can be explained by the different definitions considered in each of the approaches. As the IWI ranking does not punish countries consuming above ecological limits and puts value over natural resources for which markets exist, it rewards those countries that exploit the most their natural resources, though those that pollute the most. This ends up with results that are radically different between the two rankings, where those countries that are rewarded with the highest marks in the case of the SDR have the lowest ones in the IWI and vice versa.

For the case of the general performance, the SDR shows a relatively low performance in terms of sustainable development when comparing the global average performance of each dimension to the set limits. However, the IWI ranking concludes that "70 percent of countries assessed in the 2012 Inclusive Wealth Report present a positive Inclusive Wealth Index (IWI) per capita growth, indicating sustainability." (UNEP and UNU-IHDP 2012: xxx). This difference is mainly due to the fact that the proposal of this paper is based on not surpassing certain ecological limits and complying with certain minimum basic needs, however these considerations are not taken in the IWI ranking.

- What are the top performers?

First of all, the countries that are top 7 according to the MCS-SDR were not considered for the IWI. So the countries topping the SDR are not possible to be compared to the IWI ranking.

Table 14: Countries rank according to the IWI compared to SDR for those countries

			SDR			
	Ranking by IWI		MCS			
	country	IWI per capita, 2008, millions of constant US$ of year 2000	Ec	Soc	Env	Overall
1	Japan	435.466	2	2	0	**4**
2	United States	386.351	1	2	0	**3**
3	Canada	331.919	2	2	0	**4**
4	Norway	327.621	2	2	0	**4**
5	Australia	283.810	2	2	0	**4**
6	Germany	236.115	2	2	0	**4**
7	United Kingdom	219.089	2	2	0	**4**
8	France	208.623	2	2	0	**4**
9	Saudi Arabia	189.043	NA			
10	Venezuela	110.264	NA			
11	Russia	72.137	1	1	0	**2**
12	Chile	60.649	1	2	0	**3**
13	Brazil	38.706	1	2	1	**4**
14	South Africa	37.431	0	1	1	**2**
15	Colombia	26.779	0	2	2	**4**
16	Ecuador	25.613	0	2	2	**4**
17	China	15.027	0	2	1	**3**
18	Nigeria	5.924	0	0	2	**2**
19	India	5.176	1	0	2	**3**
20	Kenya	3.194	0	0	2	**2**

NA: Not Available information since the full set of data for the proposed exercise was not found

Except United States, the top 8 countries leading the IWI per capita ranking have very good performance in the economic and social dimensions. However, they do all have a very bad performance in the environmental dimension according to the SDR. This is mainly because the IWI approach does not punish those countries that are consuming or producing above ecological thresholds or those countries that do not guarantee minimum levels of social well-being as explained in the sections above.

Moreover, the IWI rewards more those countries that behave well in the economic dimension than those countries that behave well in the social dimension according to the SDR limits and indicators. Even more, as shown by the case of United States the IWI does not punish low levels of performance in distributional effects.

Summarizing the IWI rewards more the economic dimensions, then the social and finally the environmental.

- How is the relation between dimensions?

According to the approach given by the IWI, it is not possible to have a good economic performance with a good environmental performance at the same time according to the limits established by the MCS-SDR. The reason is that for the IWI a good economic performance implies infinite levels of growth in terms of output; moreover a good environmental performance implies high levels of exploitation of marketable natural resources. However, this crashes with the criteria set by the SDR in which certain ecological levels cannot be surpassed.

The human and manufactured capitals according to the IWI are highly correlated, mainly due to the fact that the human capital is mainly related to levels of employment, compensation and education which are related also to the levels of industrial and commercial development of a country.

5.3.3 Summary of comparison

The IWI was designed to overcome the weaknesses of the GDP and HDI by incorporating social and environmental dimensions into consideration in the framework of sustainable development as defined here. Consequently, the IWI ranking considers the social, economic and environmental dimensions. It calculates the monetary value of the three types of capitals as described by them: manufactured or produced, human and natural.

However, the IWI gives a higher weight to the economic dimension than to the other aspects of sustainable development, where the environmental dimension is the least considered. This is shown by the fact that countries having good performance in social and environmental dimension based on the SDR criteria rank at the lowest levels of the IWI. Moreover, the IWI does not give a clear relevance to complying with natural limits; this is probed by the fact that all countries topping the IWI rank perform strongly bad in the environmental dimension as defined by the SDR.

These results are mainly due to the different criterion set by the two approaches. On the one hand, this paper states that a good performance implies not surpassing certain ecological limits and complying with certain minimum basic needs fulfillment. On the other hand, the IWI does not incorporate such considerations. Moreover, as stated by the IWR, the main expected use of the IWI indicator is to help target more profitable investments, but nothing is said in the report about guaranteeing the satisfaction of minimum needs for humans within ecological thresholds.

It is interesting to bring here a quote from Dasgupta (one of the authors of the IWI) in a previous book of his:

> "So we will regard Nature as an array of capital assets. […] There are sensibilities that go beyond the viewpoint adopted here. For example, nature is seen by some people to be more than a means to human ends. My treatment of the subject is therefore minimalist. As I shall show, economic practice neglects a good portion of the sources of human well-being. So, widening our perception of Nature would reveal that the neglect is even greater and our economic policies even more misguided than are identified in this essay." (Dasgupta 2001: xviii).

As the SDR is considering a wider perception of nature, it brings to the surface the neglect Dasgupta is referring to.

IWI may be an improved measure of the productive base of a country, an improved indicator that aims to build on the weaknesses of the GDP in order to incorporate environmental and social aspects of it, in a stock instead of a flow measure. However, it shouldn't be understood as a comprehensive measure of sustainable development since it doesn't consider the satisfaction of basic needs for all the population and the respect for ecological limits. It may be used as one indicator of the system of indicators proposed here, but not as a single measure for sustainable development.

Chapter 6
Conclusion

The world is facing social, economic and environmental problems. However, the development of a country is mainly track towards its levels of economic production measured in GNI per capita or similar indicators.

In this paper, "development" is considered as a desired state where sustainable development is met. Sustainable development implies the three dimensions: economic, social and environmental. Then a "developed" country is proposed to be a "sustainably developed" country, which is one that has a broad fulfillment of basic needs and accessibility to economic means among its population and that it does so within ecological limits.

Then, this paper is aimed to verify if these "sustainably developed" countries exist.

Given that, a set of indicators and desired limits in the three dimensions were designed to be able to identify the "sustainably developed" countries. The objective was also to be able to measure the overall performance of the dimensions globally and to identify how far countries are from the pattern of sustainable development. Moreover, results were then compared to current GNI per capita ranking and to the Inclusive Wealth Index (IWI) results. The IWI is a new proposal of the United Nations to measure sustainable development (UNEP and UNU-IHDP 2012).

It intends to start a debate of a new way to classify countries considering simultaneously social, economic and environmental aspects. However, it is not intended to be a final proposal of a perfect selection of indicators.

In this section, the research questions are reviewed, each sub questions are answered and finally a comprehensive answer of the main research question is given.

- Are there "sustainably developed" countries?
    - How can a "sustainably developed" country be identified?
    - Are the "sustainably developed" countries the same as the currently called "developed" countries?
    - Are there other approaches trying to identify the "sustainably developed" countries?

6.1 How can a "sustainably developed" country be identified?

The definition of sustainable development and its three dimensions given by the "Our common future" report is widely used. However, there are two characteristics defined in such report that were not taken into account broadly. Firstly, the objective of meeting basic needs for all human beings.

Secondly, the objective of doing so within ecological limits. These two characteristics were considered in this paper as part of the definition in order to identify a "sustainably developed" country.

The selected indicators and related limits were designed to take all this into account and to be able to use them in order to answer the research question by identifying whether there were countries which were behaving simultaneously good in the social, environmental and economic dimensions. These set of indicators and limits were selected in a multi-criteria way based on the fact that sustainable development is multidimensional as well as each of its dimensions.

The Sustainable Development Ranking (SDR) was built in order to assess the levels of sustainable development in its three dimensions globally and individually on each country.

SDR results acknowledged the social, economic and environmental problems rose at the Problem Statement, by showing an overall poor performance in all the 3 dimensions. Moreover, it clearly assessed the performance of the countries considering the three dimensions of sustainable development and an overall performance. Summarizing, the SDR provides a useful tool to measure and track progress towards sustainable development in its three dimensions globally and individually.

6.2 Are the "sustainably developed" countries the same as the currently called "developed" countries?

Currently, being a "developed" country implies mainly having high levels of GNI or GDP per capita. However, in this paper being "developed" implies being "sustainably developed" which means having good performances in social, environmental and economic dimensions. The results of this paper show that "developed" countries according to the two approaches differ radically.

Developed countries when classified only in GNI per capita terms hide important social, distributional and environmental problems, as widely known and verified in this paper. However, it is important to remind that the GNI was never developed to consider sustainable development. Moreover, in order to top the GNI per capita ranking, a country needs to have as much economic production as possible and this implies high levels of natural resources exploitation with the related high potential of surpassing ecological limits.

In the light of these results, it makes no sense then calling countries with high GNI per capita "developed" if being "developed" implies achieving a desired state and if this desired state is to have sustainable development in terms of the "Our common future" report definition as used in this paper. Then, being "developed" should be being "sustainably developed".

6.3 Are there other approaches trying to identify the "sustainably developed" countries?

There are other approaches intending to measure sustainable development. The case analyzed here was the IWI. The IWI was designed to measure progress towards sustainable development. The IWI uses the same definition of sustainable development and its 3 dimensions from the "Our common future" report as it is being considered in this paper. It calculates the monetary stock value of the three types of capitals as described by them: manufactured or produced, human and natural. As stated by the IWR, the main expected use of the IWI indicator is to help target more profitable investments.

Consequently, their focus is mainly on returns over investments and in doing a monetary evaluation of the three dimensions. The definitions they use for humans and the environment only consider those things for which market exists. Moreover, the IWI does not give a clear relevance to complying with natural limits nor to guaranteeing the satisfaction of minimum basic needs among all human beings. As a result, the IWI gives a higher weight to the economic dimension than to the other aspects of sustainable development, where the environmental dimension is the least considered.

In conclusion, IWI may be an improved measure that builds on the weaknesses of the GDP in order to incorporate environmental and social aspects into it, in a stock instead of a flow measure. However, all the weaknesses related to monetary measurement are not overcome.

It shouldn't be understood as a comprehensive measure of sustainable development since it doesn't consider the satisfaction of basic needs for all the population and the respect for ecological limits. It can be used as part of a multi-criteria set of indicators for measuring sustainable development, but not as a comprehensive measure by its own.

6.4 Are there "sustainably developed" countries?

Unfortunately there are no "sustainably developed" countries according to the criteria set in this paper. Consequently, no country should called "developed", if development equals sustainable development. Moreover, the current performances of countries are showing that achieving this desired state is going to be hard since the current performances are far away from the desired state.

According to its results, current global economic, social and environmental performances are quite low when compared to expected levels of development. Moreover, there are no countries meeting at the same time all the criteria of sustainable development.

It is interesting to see that although the dominant developmental view nowadays is aligned with higher levels of economic performance, the economic is not the best performing dimension according to the SDR. Even more, the GNI per capita is the second worst performing indicator with only around

45% countries worldwide meeting the limit of $10k per capita (PPP, 2005) in the MCS as example.

When analyzing the cases of Albania, Armenia, Jordan, Egypt and Viet Nam (which are among the countries topping the SDR in the MCS), it is found that they have a good performance in the social and environmental dimensions, and even in the distribution of income indicator (Gini Index), although these countries have GNI per capita lower than the limit established for this exercise. This result challenges the used criteria to set the limit, suggesting a possibility to set as desired a lower level of GNI per capita. It also challenges the position that argues for higher levels of GNI or GDP per capita in order for a country to achieve a certain level of social development.

Moreover, if the objective of the economic dimension is to increase indefinitely the levels of GNI per capita, then it will always imply a bad performance in the environmental dimension. However, if the objective of the economic dimension is changed to be a defined and lower level of GNI per capita, then it may be the case that a good performance in the economic dimension can co-exist with a good performance in the environmental dimension. These results call for further research.

Comparison of the SDR and GNI per capita results show that the countries classified as "developed" change radically when considering social and environmental dimensions. Moreover, it is confirmed that the GNI per capita hides social inequalities, environmental degradation and income distribution patterns as it is not part of its measurement. Finally, results show that considering the GNI per capita as an indicator of development is not useful when development is to be sustainable.

When comparing SDR results to IWI, it is observed that although the IWI is a positive step since it is an improvement in terms of including into the national accounts statistics social and environmental dimensions, it still has some weaknesses related to a monetary measurement of social and environmental dimensions. It can be used as part of a multi-criteria set of indicators for measuring sustainable development, but not as a comprehensive measure by its own.

Summarizing, the SDR provides a useful tool to assess the global and individual performance in the three dimensions of sustainable development.

This paper is not a complete proposal of what the full and more accurate set of sustainable development performance indicators for a country should be. Further research is undeniably necessary, both in terms of the selected indicators as well as in terms of the process to select them. Instead, this is a first attempt to see if countries that are behaving well in all the three dimensions (environmental, economic and social) actually exist. One implication of this exercise however is that some countries which are currently defined as "developed" are not so in light of the definition proposed herein. Then, the current division of countries among "developed" and "underdeveloped" may not be maintained anymore and may be rethought.

6.5 New questions, limitations and topics for further research

Several questions, concerns and limitations were raised during the research process that are brought back here for consideration in future research endeavors.

A question that was not answer in this paper is why the full definitions of the social and environmental dimensions as described in the "Our common future" report were not broadly considered. Moreover, a deep dive into the different interpretations of the definitions given by the report could be also researched. Going into the details of the political economy behind this could be an interesting research topic out of the scope of this paper. This concern also applies for understanding why multi-criteria methods are not broadly employed for sustainable development in international organizations.

Another topic for research could be to understand the policies followed by the top 7 countries according to the MCS-SDR in the different dimensions.

In order to address some of the weaknesses but also some of the findings of the methodology proposed here, it could be relevant to do several variations to the design of the SDR[9]. For example, i) inclusion of a maximum limit to the GNI per capita indicator; ii) elimination of the economic dimension if considered a means and not an end of sustainable development; iii) variation in type and number of dimensions, indicators, limits; iv) more variations in the grades; v) different weights to the different dimensions; vi) consideration of distributional factors on each indicator to see regional patterns inside countries; vii) different assumptions for the MPI missing data; viii) consideration of political aspects; among others.

All these may imply different normative choices regarding the framing of the problems and the definitions considered for sustainable development, its dimensions, indicators and limits. A more in depth investigation of all these issues would require a much larger study.

The lack of complete information from the same source may imply variations in data collection methods and variations in the results. A profound deep dive into the data collection methods has not been done and could be relevant for further research. Moreover, a call for the need of increasing public data is made considering its importance to policy making and research.

Finally, in line with the knowledge about politics of indicators, this proposal is done as a proposal to start an interactive discussion that may only be relevant in the policy arena if it involves participation of relevant stakeholders and is part of some processes of social and political change.

[9] For example, when considering variations in the environmental dimension some interesting results appear. For example, with national footprint over national biocapacity per capita, with its limit equal to 100% and GHG emissions per capita, with its limit equal to the average of the considered countries, then Latvia appears to be the only country that meets all criteria and performs as a "sustainable developed" country. Moreover, there are 16 countries with a 5 as overall mark.

Appendices

Appendix 1: Theoretical Framework comparison among GNI per capita, IWI and SDR rankings

Summary	GNI per capita	IWI	SDR
What definition of sustainable development is used?	Not applicable	"Our common future" report	"Our common future" report
What is the proposed way to measure sustainable development?	$	$	Multi-Criteria
What are the dimensions of sustainable development?	Economic	Economic, Social, Enviromental	Economic, Social, Enviromental
Economic	GNI per capita	Output, productivity, investment, among others	GNI per capita, Gini Index
Social	Not applicable	Education, compensation, employment, remaining life, among others	Multidimensional Poverty Index (health, education and living conditions), life expectancy at birth
Environmental	Not applicable	Marketable agricultural land, forest resources, fisheries, fossil fuels and metals&minerals	Ecological footprint per capita, GHG emissions per capita
Are the minimum levels of basic needs and the maximum ecological limits considered?	No	No	Yes

Appendix 2: Top 7 countries indicators' values for the SDR

	Economic		Social		Environmental	
	Gross National Income (GNI) per capita	**Gini Coefficient**	**Multidimensional Poverty Index**	**Life expectancy at birth**	**Ecological footprint**	**Total GHG emissions per capita**
	(Constant 2005 PPP$)	Index	Index	(years)	(hectares per capita)	(tonnes)
Hungary	16.581	31,2	0,016	74,4	3,0	7,1
Serbia	10.236	28,2	0,003	74,5	2,4	7,3
Albania	7.803	34,5	0,005	76,9	1,9	2,4
Armenia	5.188	30,9	0,004	74,2	1,8	3,1
Jordan	5.300	37,7	0,008	73,4	2,1	4,0
Egypt	5.269	32,1	0,024	73,2	1,7	3,5
Viet Nam	2.805	37,6	0,084	75,2	1,4	2,7

Appendix 3: Total IWI, produced, human and natural capital per capita values for each country according to the IWI

		IWI per capita, 2008, millions of constant US$ of year 2000			
	Country	Total IWI	Produced capital	Human capital	Natural capital
1	Japan	435.466	118.193	312.394	4.879
2	United States	386.351	73.243	291.397	21.711
3	Canada	331.919	56.520	171.960	103.439
4	Norway	327.621	90.274	201.361	35.986
5	Australia	283.810	66.970	132.376	84.463
6	Germany	236.115	59.513	161.914	14.688
7	United Kingdom	219.089	24.386	192.953	1.751
8	France	208.623	51.774	154.190	2.658
9	Saudi Arabia	189.043	19.468	66.370	103.204
10	Venezuela	110.264	14.121	55.851	40.292
11	Russia	72.137	9.328	14.916	47.893
12	Chile	60.649	13.003	35.092	12.555
13	Brazil	38.706	7.644	23.804	7.258
14	South Africa	37.431	6.515	21.147	9.768
15	Colombia	26.779	6.377	11.051	9.351
16	Ecuador	25.613	4.298	16.639	4.675
17	China	15.027	4.637	6.571	3.819
18	Nigeria	5.924	388	1.474	4.062
19	India	5.176	1.458	2.388	1.330
20	Kenya	3.194	793	1.707	694

Appendix 4: Indicators' values for all considered countries in the SDR

	Economic		Social		Environmental	
	Gross National Income (GNI) per capita	**Gini Coeffi-cient**	**Multidimensional Poverty Index**	**Life expec-tancy at birth**	**Ecological footprint**	**Total GHG emissions per capita**
	(Constant 2005 PPP$)	HDI preferred	Avg very high HDI	(years)	(hectares per capita)	(tonnes)
	2011	Last availa-ble (2000-2011)	Last available (2000-2010)	2011	2007	2005 & 2008
Norway	47.557	25,8	0,010	81,1	5,6	16,3
Australia	34.431	30,5	0,010	81,9	6,8	28,6
Netherlands	36.402	30,9	0,010	80,7	6,2	13,0
United States	43.017	40,8	0,010	78,5	8,0	21,0
New Zealand	23.737	36,2	0,010	80,7	4,9	17,9
Canada	35.166	32,6	0,010	81,0	7,0	21,0
Ireland	29.322	34,3	0,010	80,6	6,3	15,6
Germany	34.854	28,3	0,010	80,4	5,1	11,5
Sweden	35.837	25,0	0,010	81,4	5,9	7,5
Switzerland	39.924	33,7	0,010	82,3	5,0	6,6
Japan	32.295	37,6	0,010	83,4	4,7	10,5
Korea (Republic of)	28.230	31	0,010	80,6	4,9	11,7
Denmark	34.347	24,8	0,010	78,8	8,3	11,3
Israel	25.849	39,2	0,010	81,6	4,8	6,4
Belgium	33.357	33,0	0,010	80,0	8,0	11,7
Austria	35.719	29,1	0,010	80,9	5,3	10,0
France	30.462	32,7	0,010	81,5	5,0	8,4
Slovenia	24.914	31,2	0,000	79,3	5,3	11,1
Finland	32.438	26,9	0,010	80,0	6,2	14,0
Spain	26.508	34,7	0,010	81,4	5,4	9,1
Italy	26.484	36,0	0,010	81,9	5,0	8,9
Luxembourg	50.557	26	0,010	80,0	9,4	25,4
Singapore	52.569	47,3	0,010	81,1	5,3	8,4
Czech Republic	21.405	31	0,010	77,7	5,7	13,4
United Kingdom	33.296	34	0,010	80,2	4,9	10,3
Greece	23.747	34,3	0,010	79,9	5,4	10,2
Estonia	16.799	36,0	0,026	74,8	7,9	15,9
Slovakia	19.998	26	0,000	75,4	4,1	8,4
Qatar	107.721	41,1	0,010	78,4	10,5	71,4
Hungary	16.581	31,2	0,016	74,4	3,0	7,1
Poland	17.451	34,2	0,010	76,1	4,3	11,0
Lithuania	16.234	37,6	0,010	72,2	4,7	7,1
Portugal	20.573	38,5	0,010	79,5	4,5	7,1
Latvia	14.293	35,7	0,006	73,3	5,6	5,7
Chile	13.329	52,1	0,010	79,1	3,2	6,0

Argentina	14.527	45,8	0,011	75,9	2,6	8,8
Croatia	15.729	33,7	0,016	76,6	3,7	6,8
Uruguay	13.242	42,4	0,006	77,0	5,1	10,6
Mexico	13.245	51,7	0,015	77,0	3,0	6,1
Serbia	10.236	28,2	0,003	74,5	2,4	7,3
Belarus	13.439	27,2	0,000	70,3	3,8	8,9
Russian Federation	14.561	42,3	0,005	68,8	4,4	17,0
Kazakhstan	10.585	30,9	0,002	67,0	4,5	19,5
Albania	7.803	34,5	0,005	76,9	1,9	2,4
Bosnia and Herzegovina	7.664	36,2	0,003	75,7	2,7	9,5
Georgia	4.780	41,3	0,003	73,7	1,8	2,7
Ukraine	6.175	27,5	0,008	68,5	2,9	9,1
The former Yugoslav Republic of Macedonia	8.804	44,2	0,008	74,8	5,7	6,8
Peru	8.389	48,0	0,086	74,0	1,5	2,3
Ecuador	7.589	49,0	0,009	75,6	1,9	3,6
Brazil	10.162	53,9	0,011	73,5	2,9	6,0
Armenia	5.188	30,9	0,004	74,2	1,8	3,1
Colombia	8.315	58,5	0,022	73,7	1,9	3,3
Azerbaijan	8.666	33,7	0,021	70,7	1,9	10,1
Turkey	12.246	39,7	0,028	74,0	2,7	5,3
Tunisia	7.281	40,8	0,010	74,5	1,9	3,5
Jordan	5.300	37,7	0,008	73,4	2,1	4,0
Sri Lanka	4.943	40,3	0,021	74,9	1,2	1,2
Dominican Republic	8.087	48,4	0,018	73,4	1,5	3,0
China	7.476	41,5	0,056	73,5	2,2	6,7
Thailand	7.694	53,6	0,006	74,1	2,4	5,9
Gabon	12.249	41,5	0,161	62,7	1,4	8,1
Paraguay	4.727	52,0	0,064	72,5	3,2	4,8
Bolivia (Plurinational State of)	4.054	57,3	0,089	66,6	2,6	6,3
Moldova (Republic of)	3.058	38,0	0,007	69,3	1,4	2,4
Philippines	3.478	44,0	0,064	68,7	1,3	1,7
Egypt	5.269	32,1	0,024	73,2	1,7	3,5
Uzbekistan	2.967	36,7	0,008	68,3	1,7	6,5
Syrian Arab Republic	4.243	35,8	0,021	75,9	1,5	4,3
Namibia	6.206	70,7	0,187	62,5	2,2	6,3
Honduras	3.443	57,7	0,159	73,1	1,9	2,3
South Africa	9.469	57,8	0,057	52,8	2,3	10,7
Indonesia	3.716	36,8	0,095	69,4	1,2	3,3
Kyrgyzstan	2.036	33,4	0,019	67,7	1,2	2,1
Tajikistan	1.937	29,4	0,068	67,5	1,0	1,3
Viet Nam	2.805	37,6	0,084	75,2	1,4	2,7
Nicaragua	2.430	52,3	0,128	74,0	1,6	2,5
Morocco	4.196	40,9	0,048	72,2	1,2	2,0
Guatemala	4.167	53,7	0,127	71,2	1,8	2,0
India	3.468	36,8	0,283	65,4	0,9	2,2

Ghana	1.584	42,8	0,144	64,2	1,8	1,0
Congo	3.066	47,3	0,208	57,4	1,0	3,2
Cambodia	1.848	44,4	0,251	63,1	1,0	2,2
Kenya	1.492	47,7	0,229	57,1	1,1	1,2
Pakistan	2.550	32,7	0,264	65,4	0,8	2,0
Bangladesh	1.529	31,0	0,292	68,9	0,6	1,0
Angola	4.874	58,6	0,452	51,1	1,0	6,4
Cameroon	2.031	44,6	0,287	51,6	1,0	1,9
Tanzania (United Republic of)	1.328	37,6	0,367	58,2	1,2	1,5
Yemen	2.213	37,7	0,283	65,5	0,9	1,5
Senegal	1.708	39,2	0,384	59,3	1,1	1,4
Nigeria	2.069	42,9	0,310	51,9	1,4	1,7
Nepal	1.160	47,3	0,350	68,8	3,6	1,1
Haiti	1.123	59,5	0,299	62,1	0,7	0,8
Togo	798	34,4	0,284	57,1	1,0	1,0
Zambia	1.254	50,7	0,328	49,0	0,9	3,9
Benin	1.364	38,6	0,412	56,1	1,2	1,4
Côte d'Ivoire	1.387	46,1	0,353	55,4	1,0	1,3
Zimbabwe	376	50,1	0,180	51,4	1,2	2,0
Ethiopia	971	29,8	0,562	59,3	1,1	1,2
Mozambique	898	45,6	0,512	50,2	0,8	1,2
Congo (Democratic Republic of the)	280	44,4	0,393	48,4	0,8	1,9

Appendix 5: SDR grades for all considered countries in all dimensions and overall for MCS and BCS

	MCS				BCS			
	Eco-nomic	So-cial	Envi-ron-men-tal	Ove-rall	Eco-nomic	So-cial	Envi-ron-men-tal	Ove-rall
Norway	2	2	-	**4**	2	2	-	**4**
Australia	2	2	-	**4**	2	2	-	**4**
Netherlands	2	2	-	**4**	2	2	-	**4**
United States	1	2	-	**3**	1	1	-	**2**
New Zealand	2	2	-	**4**	1	2	-	**3**
Canada	2	2	-	**4**	2	2	-	**4**
Ireland	2	2	-	**4**	1	2	-	**3**
Germany	2	2	-	**4**	2	2	-	**4**
Sweden	2	2	-	**4**	2	2	-	**4**
Switzerland	2	2	-	**4**	2	2	-	**4**
Japan	2	2	-	**4**	1	2	-	**3**
Korea (Republic of)	2	2	-	**4**	2	2	-	**4**
Denmark	2	2	-	**4**	2	1	-	**3**
Israel	2	2	-	**4**	1	2	-	**3**
Belgium	2	2	-	**4**	2	2	-	**4**
Austria	2	2	-	**4**	2	2	-	**4**
France	2	2	-	**4**	2	2	-	**4**
Slovenia	2	2	-	**4**	2	2	-	**4**
Finland	2	2	-	**4**	2	2	-	**4**
Spain	2	2	-	**4**	1	2	-	**3**
Italy	2	2	-	**4**	1	2	-	**3**
Luxembourg	2	2	-	**4**	2	2	-	**4**
Singapore	1	2	-	**3**	1	2	-	**3**
Czech Republic	2	2	-	**4**	2	-	-	**2**
United Kingdom	2	2	-	**4**	2	2	-	**4**
Greece	2	2	-	**4**	1	2	-	**3**
Estonia	2	2	-	**4**	1	-	-	**1**
Slovakia	2	2	-	**4**	2	1	-	**3**
Qatar	1	2	-	**3**	1	1	-	**2**
Hungary	2	2	1	**5**	2	-	-	**2**
Poland	2	2	-	**4**	1	1	-	**2**
Lithuania	2	2	-	**4**	1	1	-	**2**
Portugal	2	2	-	**4**	1	2	-	**3**
Latvia	2	2	-	**4**	-	1	-	**1**
Chile	1	2	-	**3**	-	1	-	**1**
Argentina	1	2	1	**4**	1	-	-	**1**

Croatia	2	2	-	**4**	2	-	-	**2**
Uruguay	1	2	-	**3**	-	1	-	**1**
Mexico	1	2	1	**4**	-	-	-	**-**
Serbia	2	2	1	**5**	1	1	-	**2**
Belarus	2	1	-	**3**	1	1	-	**2**
Russian Federation	1	1	-	**2**	1	1	-	**2**
Kazakhstan	2	1	-	**3**	1	1	-	**2**
Albania	1	2	2	**5**	-	1	-	**1**
Bosnia and Herzegovina	1	2	1	**4**	-	1	-	**1**
Georgia	-	2	2	**4**	-	1	-	**1**
Ukraine	1	1	1	**3**	1	1	-	**2**
The former Yugoslav Republic of Macedonia	-	2	-	**2**	-	1	-	**1**
Peru	-	2	2	**4**	-	-	1	**1**
Ecuador	-	2	2	**4**	-	1	-	**1**
Brazil	1	2	1	**4**	-	-	-	**-**
Armenia	1	2	2	**5**	1	1	1	**3**
Colombia	-	2	2	**4**	-	-	-	**-**
Azerbaijan	1	1	1	**3**	1	-	-	**1**
Turkey	1	2	1	**4**	-	-	-	**-**
Tunisia	-	2	2	**4**	-	-	-	**-**
Jordan	1	2	2	**5**	-	1	-	**1**
Sri Lanka	-	2	2	**4**	-	-	2	**2**
Dominican Republic	-	2	2	**4**	-	-	1	**1**
China	-	2	1	**3**	-	-	-	**-**
Thailand	-	2	1	**3**	-	1	-	**1**
Gabon	1	-	1	**2**	-	-	1	**1**
Paraguay	-	2	-	**2**	-	-	-	**-**
Bolivia (Plurinational State of)	-	1	1	**2**	-	-	-	**-**
Moldova (Republic of)	1	1	2	**4**	-	1	1	**2**
Philippines	-	1	2	**3**	-	-	2	**2**
Egypt	1	2	2	**5**	1	-	1	**2**
Uzbekistan	1	1	1	**3**	-	1	1	**2**
Syrian Arab Republic	1	2	1	**4**	-	-	1	**1**
Namibia	-	-	1	**1**	-	-	-	**-**
Honduras	-	1	2	**3**	-	-	-	**-**
South Africa	-	1	1	**2**	-	-	-	**-**
Indonesia	1	-	2	**3**	-	-	1	**1**
Kyrgyzstan	1	1	2	**4**	1	-	1	**2**

Tajikistan	1	1	2	**4**	1	-	2	**3**
Viet Nam	1	2	2	**5**	-	-	1	**1**
Nicaragua	-	1	2	**3**	-	-	1	**1**
Morocco	-	2	2	**4**	-	-	1	**1**
Guatemala	-	-	2	**2**	-	-	2	**2**
India	1	-	2	**3**	-	-	1	**1**
Ghana	-	-	2	**2**	-	-	2	**2**
Congo	-	-	2	**2**	-	-	1	**1**
Cambodia	-	-	2	**2**	-	-	1	**1**
Kenya	-	-	2	**2**	-	-	2	**2**
Pakistan	1	-	2	**3**	1	-	2	**3**
Bangladesh	1	-	2	**3**	1	-	2	**3**
Angola	-	-	1	**1**	-	-	1	**1**
Cameroon	-	-	2	**2**	-	-	2	**2**
Tanzania (United Republic of)	1	-	2	**3**	-	-	2	**2**
Yemen	1	-	2	**3**	-	-	2	**2**
Senegal	1	-	2	**3**	-	-	2	**2**
Nigeria	-	-	2	**2**	-	-	2	**2**
Nepal	-	-	1	**1**	-	-	1	**1**
Haiti	-	-	2	**2**	-	-	2	**2**
Togo	1	-	2	**3**	-	-	2	**2**
Zambia	-	-	2	**2**	-	-	1	**1**
Benin	1	-	2	**3**	-	-	2	**2**
Côte d'Ivoire	-	-	2	**2**	-	-	2	**2**
Zimbabwe	-	-	2	**2**	-	-	2	**2**
Ethiopia	1	-	2	**3**	1	-	2	**3**
Mozambique	-	-	2	**2**	-	-	2	**2**
Congo (Democratic Republic of the)	-	-	2	**2**	-	-	2	**2**

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