# *Working Paper Series nr. 16 (draft)*

## *Arguments for and the elaboration of the 'Manifesto on climate change' : development toward sustainability*

*Laurent J.G. van der Maesen c.s.*

*Version 1 April 2016*

# 1. Introduction

## 1.1. Some outcomes of the Paris conference on climate change

In December 2015 the French Government hosted all state-leaders participating in the 21st Conference of Parties to the United Nations Framework Convention on Climate Change in Paris (COP21). The most central objective was to reach an agreement with all participating nations to "*strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by [also] holding the increase in the global average temperature to well below 2oC above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5oC above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change*". [1] And indeed, scientific evidence – as presented in the Intergovernmental Panel on Climate Change's (IPPC) fifth Report - refers to the global accumulative greenhouse gasses as a main cause of the climate change.[2]

The agreement has to pave the way for rules, modalities and procedures. They have to recognize the importance of "*integrated, holistic and balanced non-market approaches being available to Parties to assist in the implementation of their nationally determined contributions, in the context of sustainable development and poverty eradication, in a coordinated and effective manner, including through, inter alia, mitigation, adaptation, finance, technology transfer and capacity-building, as appropriate*". [3] This agreement is in line with e.g. the report by the SDSN and IDDRI on the question of decarbonisation. Concluded is that the dangerous climate change and the achieving sustainable development are inextricably linked. With this in mind, the report's main assumption is that "a*ddressing climate change requires deep emission reductions of all greenhouse gases (GHGs), including the deep decarbonisation of energy systems (…..) robust economic growth and rising prosperity are consistent with the objective of deep decarbonization under the assumption of rapid technological evolution combined with their large-scale dissemination on terms that are economically and socially viable.*" [4]

---

[1] UN (2015), *'Framework Convention on Climate Change'*, (FCCC/CP/2015/L.9/Rev.1), p. 22.

[2] Intergovernmental Panel on Climate Change (IPCC) (2014), '*Climate Change 2014: Impacts, Adaptation, and Vulnerability'* , (http://ipcc-wg2-gov/AR5).

[3] UN, see note-1, p. 24.

[4] Sustainable Development Solutions Network (SDSN) and Institute for Sustainable Development and International Relations (IDDRI) (2014), '*Pathways to deep carbonization'*, (http://unsdn.org/wp-content/upload/2014/09/ DDPP_Digit.pdf), p. Vll.

Unclear remains in this SDSN-Report what 'sustainable development' is as well what we do understand with economic and social viability. Undiscussed crucial topics. Hypothesized is that the increase in mean surface temperature to less than 2°C imposes "*a tough constraint on global cumulative CHG emissions, including CO² emissions, which are the largest single source (76%) of GHG emissions*".[5]   The report explains also serious difficulties. Only a few countries had studied pathways how to reach reductions that will contribute to the objective of staying within the 2°C limit. Further,   global studies are not appropriate for stimulating effective actions at the country level. And – as is e.g. the case for India – global studies may be inconsistent with individual countries' socio-economic development objectives. Serious disagreements exist   "*how to take into account historic emissions, the potential options and cost for mitigation, and the basis for CHG accounting rules (…) [notwithstanding this]  every country will have to undertake a deep transformation of their energy systems to low-carbon energy by 2050. Of course, the question of who pays for such transformation, and how the cost of climate change mitigation can be shared equitably across countries, will necessarily have to be resolved*.". [6]

## 1.2.      The rationale of the working-paper

We should realize that environmental scientists explain already for many decades that the resilience borders are becoming over crossed dramatically.[7] Not only the increase of temperature is alarming. Their convincing research outcomes clarify that the conference's accent on climate change instead of the overall sustainability - including climate change as an aspect of the decrease of sustainability - is not defensible. For example, immense effects of the increasing shipping and air traffic remained undiscussed. Furthermore, the interminable unsustainability of nuclear power plants (22 in the conference's host country) and its consequences for future generations has not been put on the agenda. What are the dangers of these plants in the context of highly advanced strategies of terrorists? What do we learn from e.g. Tsjernobyl (100.000 dead) and Fukushima (19.000 dead) and their victims who are far beyond number? Are the specific causes of carbon emissions treated too much as a stand-alone aspect? Are they incorporated in comprehensive approaches and policies to defend the overall sustainability as central challenge for all people? The rationale of this working-paper is to resent arguments for going beyond the question of the carbon emissions.

---

[5] SDSN/IDDR, see note-4, p. V111.

[6] SDSN/IDDR, see note-4, p. 24-25.

[7] IPCC, see note-2.

Comprehensive approaches are a condition to understand what 'sustainable development' or development toward the 'overall sustainability' means. It is also a condition to enable us – with a clear understanding of the overall sustainability in mind - to conclude which strategies are socio-economically and socio-politically viable. It is too easy to present a simple axiom that robust economic growth and rising prosperity are consistent with the objective of deep decarbonisation (as an objective for combatting climate change as an implicit aspect of the overall sustainability) as happened in the SDSN-Report. The president of the International Social Science Council argues in his letter for supporting the Manifesto initiative, that *"we live in a world where environmental change, poverty inequality in its countless forms, corruption and social discontent are intricately linked; the cannot be disentangled or addressed in isolation. Undoubtedly, the biggest challenge we now face is to secure [with this in mind] the transition of societies to global sustainability."* [8]

As Oliver Geden remarks, "*we need to seriously discuss the effects of technologies designed to remove carbon from the atmosphere, and to have this discussion not only among scientists but on the political level as well. Because right now, we're on the verge of repeating the same mistake that led to the financial crisis: relying on economic models that are completely detached from what's going on in the real world*".[9] In the same vain in the Preface of the World Social Science Report 2013 argued is, that "*reducing greenhouse gas emissions is inextricably linked with human behaviour and the model of development we choose to follow. The question before social scientists is how we direct human behaviour and social practice away from a well-established development model and lifestyle that continues to add to global greenhouse gas emissions. Transforming emissions from industry is one thing, and by no means simple, but caging an entire nation's lifestyle is another. Perhaps before this question can be answered, social scientists must first ask why human behaviours which add to greenhouse gas emissions are so resistant to change*". [10] The Report emphasises that the development toward sustainability requires a change of societal processes which underlie current institutions and structures, human conventions, preferences and behaviours.

### 1.3. Exploring a broader perspective, indicators and the urban context

[8] A. Martinelli (2015), "*Letter of support for the Sustainability Initiative'*, International Social Science Council, President, Paris, 26 November

[9] O. Geden (2015), '*The dubious carbon budget'*, (German Institute for International and Security Affairs), *International New York Times*, 2 December, p.11.

[10] O. Shisana (2013), 'Preface: A lighter carbon footprint, a greener world', in: ISSC and UNESCO (2013), '*World Social Science Report 2013, Changing Global Environments',* (Paris: OECD Publishing and UNESCO Publishing), p. 9.

Climate change because of the carbon emissions will not cease if we are unable to reach agreement on politics resulting in transformative changes in order to address all aspects of overall sustainability. There are several explanations for this. First, the current dominant way of life in especially the 'Western world' demands high energy use and does and will lead - next to carbon emissions – to many other forms of pollution. In addition, the United Nations' right support for the average improvement of living conditions of the growing world population, will under the same circumstances (ceteris paribus) inevitably add to the effects of all these forms of pollution. This will be especially the case if the 'Western style' will function as an ideal of all people (a socio-cultural argument). Second, current forms of global oriented governance are inadequate to face the new challenges concerning overall sustainability, also due to increasing political contradictions expressed in serious conflicts. Added can be that neo-liberal oriented political backing of an independent space for financial-economic interests – ignoring the normative based principles as human dignity, social justice, solidarity and equal value of people worldwide [11] - prevents the necessary transformation (socio-political argument) [12].

Third, under remaining circumstances (ceteris paribus) this will open the door for a reinforcement of economic inequalities and strengthen the drive for more Western oriented consumption-patrons which implies further economic growth as a necessity sui generis. This will strengthen the existing production systems and therefore provoke migration-flows (a socio-economic argument).[13] Fourth, these issues transcend the consequences of the current energy production systems and will function in their turn as drivers of climate change as well (socio-environmental argument). Therefore, on the eve of the Rio+20 Conference on sustainability in June 2012, Gro Harlem Brundtland criticized national governments all over the world for "*refusing to make the transformative changes needed to resolve the global sustainability crisis (…) [A] transition to a safe and prosperous future is possible, but will require the full use of humanity's extraordinary capacity for innovation and creativity*".[14]

This working-paper will underline the need to broaden our attention on the environmental dimension to also include the socio-economic, socio-political and socio-cultural dimensions.

---

[11] This refers to the four normative points of departure of the social quality approach, see; W.A. Beck, L.J.G. van der Maesen, F. Thomése, A.C. Walker (eds) (2001), *'Social Quality: A Vision for Europe '* (The Hague/London/Boston: Kluwer Law International).

[12] T. Cadman (2011), ' *Quality and Legitimacy of Global Governance; Case Lessons from Forestry'*, (Basingstoke : Palgrave Macmillan), and: T. Cadman (2012), 'Evaluating the Quality and Legitimacy of Global Governance: A Theoretical and Analytical Approach', *International Journal of Social Quality*, Vol. 2 (1), pp. 4-24.

[13] ……………………………………………..
………………………………………

[14] G. H. Brundtland (2012), 'Earth Agonistes', *International Herald Tribune*, June 19:8.

For social scientists (including economists and jurists) this is a serious challenge because the existing divide between the first and the other three dimensions. The objective is to research the **interconnection** of these **four dimensions** and to understand the **interrelationships** of the multiple processes in and between these four dimensions which are essential for the development of the overall sustainability. This differs – first of all -  from the globally accepted three-pillar approach, differentiating the economic, the social and the environmental dimension of sustainability as presented in the so-called Brundtland Report.[15]In its interpretation of sustainable development the social dimension remains a rag-bag and the economic and environmental dimensions dominate. It refers to the supposition of 'social-as-residual-and-shock-absorber'.[16]It differs also from the dominant discourse on human development and human rights founded in an individualistic anthropocentric orientation disentangled from nature. According to Johannes Waldmüller – and referring to the new Constitution of Ecuador which  accentuates the meaning of 'nature' for human existence and societal relationships - the ontological linkages drawn between human development, human rights, and nature – understood as interlocking ecosystems and actors – as yet remain superficial and too little explored. Logically, this is also the case with the 'human development indicators' or 'social indicators'.[17] This will also imply the construction of indicators which are applicable to all four dimensions as well in order to understand their interrelationships. [18] This goes far beyond the construction and application of only empirical based and eclectic chosen 'monitoring devices' which are usually called 'indicators'[19] In a general sense the attention for these interrelationships remained underdeveloped because the restriction to these monitoring devices. [20]

All these issues should be placed in context of daily circumstances of people. Since in the near future around 75% of the earth's population will be living in an **urban context**, this interconnectedness will especially take place in this context as the main space of the production and reproduction relationships of people. Again in a general sense the role of the

[15] United Nations (1987), "*Commission for Sustainable Development: the Brundtland Report 'Our Common Future'*, (New York: UN).

[16] R. Apthorpe….

[17] J. Waldmuller……..2016

[18] This is discussed in; L.J.G. van der Maesen and A.C. Walker, eds (2012), '*Social Quality: From Theory to Indicators'*, (Basingstoke: Palgrave Macmillan), Chapter-11.This book is based on the contribution by sixteen academics from fourteen Member States of the EU, collaborating in the European Network on Social Quality Indicators, financed by the European Commission (DG Research) and the herewith engaged universities (www.socialquality.org).

[19] L.J.G. van der Maesen (2013), 'Analysing Societal Circumstances, Sustainability and Sustainable Urban Development: New Theoretical and Methodological Challenges for Social Quality Indicators'*, International Journal of Social Quality*, Vol. 3 (1), pp. 82-105.

[20] T.K. Lissner, D.E. Reusser, T. Lakes, J. P. Kropp (2014), 'A systemic approach to assess human well-being demonstrated for impacts of climate change', *Change Adaptation Socioecol.Syst*, 1: pp. 98-110.

urban context in sustainability discourses is underdeveloped as well. However, politics aiming at 'sustainable urban development' - including those regarding employment, housing, securing acceptable living conditions and livelihoods (according the above mentioned four normative principles), public health, education, the position of migrants, older people etc. and new information and communications technologies[21] - are crucial for 'development toward overall sustainability. This will also imply a fundamental change of perspective. Thus far, all these policy areas are usually approached as entities sui generis. A change of education, security systems, or employment etc should be understood though as pillars of sustainable urban development as a main aspect of the development toward sustainability.

A start with this form of reasoning was made by a Dutch think-tank, organized by the ISS and the IASQ. It tried contribute to the Rio+20 conference on sustainability in June 2012 with its Working-paper nr.11.[22] This was followed by some expert-meetings[23] and the IASQ's participation in the Chinese-EC project for analysing the 'model of environmental protection by citizens' in the Jiaxing city, resulting in the working-paper nr. 15. Also from the side of the ISS different studies are made.[24] This work functioned as point of departure for a Manifesto concerning the COP21 Paris conference. It became finally a product of representatives of different institutes and is signed by nearly 300 scientists from all over the world. In the following sub-section we will present this Manifesto. Herewith the initiators of the Manifesto became very close to the International Social Science Council (ISSC), which Executive Board supported the Manifesto with the words: "*the Executive Committee of the International Social Science strongly supports the Sustainability initiative of the International Association on Social Quality.* "[25]

### 1.4. Manifesto for Paris climate conference[26]

---

[21] C. Wallace (2012), 'Can Information and Communications Technology Enhance Social Quality', *International Journal of Social Quality,* Vol. 2 (2), pp. 98-117.

[22] J. van Renswoude, L.J.G. van der Maesen, P. Herrmann et all (2012), ' *Development toward Sustainability: The Need for a comprehensive Conceptual and Methodological Framework for new Politics and Policies: a Social Quality Perspective',* (Amsterdam/The Hague: IASQ, Working Paper Series nr. 11, www.socialquality.org). This think tank was supported by an international audience.

[23] ….
…………

[24] …..
………

/.

[26] This manifesto is published first on the website; www.socialquality.org and written by 9and support from) L.J.G. van der Maesen (IASQ), Des Gasper (ISS/Erasmus University, Netherlands), Tim Cadman (Griffith University, Australia), Margaretha Wewerinke (School of Law University of the South Pacific),

*"We, academics from all parts of the world, invite all state leaders to stimulate and support their universities to address the severe challenge of increasing unsustainability of living conditions on our planet.*

***Considering that:***

- *The World Bank concludes in its report of 8 November 2015 that climate change could (under current circumstances) push more than 100 million additional people back into poverty by 2030;*
- *As Gro Harlem Brundtland has recently remarked, one-dimensional solutions cannot address multidimensional problems like those we currently face. The 2014-15 joint statements between the USA and China about decrease of carbon emissions, for example, are a major but one-dimensional step. The mitigation of carbon emissions is essential for the sustainability of humankind on earth, but we have to go much further than this;*
- *Many current authoritative reports clarify that the world needs extra and orchestrated efforts from universities in order to fill gaps in past and current approaches. They demonstrate that many gaps lead to fragmentation and stagnation in our development toward sustainability;*
- *The ISSC's (with UNESCO and OECD) 2013 World Social Science Report ('Changing global environments') shows that these gaps arise because environmental change is still viewed primarily in physical science terms, whereby the (interrelationships of) socio-environmental, socio-economic, socio-political and socio-cultural dimensions of sustainability receive insufficient attention. It shows too the regional divides in social sciences (including economics and law) are as strong as the divides between social sciences themselves and between these and natural sciences. We lack a comprehensive approach that links all relevant dimensions of human existence with the challenges posed by climate change. This inhibits the creation of knowledge about interrelated processes in these dimensions. For these reasons, the ISSC has called for the promotion of interdisciplinary and cross-disciplinary science to fill the gaps in our understanding of overall sustainability;*
- *UN-Habitat and UNDP (e.g. UNDP-China in 2013) warn that management of the current growth of cities to become mega-cities remains insufficiently connected with the sustainability challenge. The Sustainable Development Goals miss a systematic approach concerning (mega) cities;*
- *The manifestations of climate change in many parts of the world, not least in parts of Africa, South-East Asia and the Pacific, are already dramatic. The international*

*response to recent climate change-related disasters further illustrates the gap in our understanding of the interrelationships of dimensions of sustainability, and the way in which these dimensions influence the effectiveness of responses.*

**We declare that:**

- *Part of the core business of universities should be to contribute to a sound understanding of all dimensions of sustainable development, including the role of all these dimensions in the prevention of and response to climate change;*
- *To enable universities and academics to cross disciplinary, bureaucratic and other conventional boundaries, the world needs orchestrated common academic efforts to invent new conceptual and methodological frameworks that draw connections between the huge diversity of studies related to sustainability. Such efforts should be aimed at creating a comprehensive understanding of sustainability suitable for addressing multidimensional problems, thus offering alternatives to overly top-down approaches promoted by many governments and business-players;*
- *Herewith the academic world should make a contribution to policies oriented towards sustainable development that strengthens social justice, human dignity, solidarity within and across societies and equal opportunities for all peoples of the world;*
- *The results of these efforts should be made accessible so as to stimulate and mobilize individuals, communities and policy-makers at all levels to act as positive forces in the diverse processes towards sustainable development.*
- *For the proposed orchestration of academic institutes and academics from across the world, we need 'academic change-agents' in order to promote the work at conceptual and methodological levels and to communicate about the outcomes, especially to and from 'grassroots-levels'.*

**Therefore the undersigned propose that:**

- *Supporters of this manifesto take steps towards the realization of a comprehensive approach to the study of sustainability, in collaboration with the ISSC and other appropriate agencies, thereby stimulating the academic world to contribute proactively to the achievement of sustainable development;*
- *Academic 'change-agent' centres will be created for coordination of these efforts in cooperation with associated university departments, which will agree on a common work plan and start with the implementation of this plan during the coming five years;*

- *Governments all over the world will support the establishment of these centres by providing financial resources and supporting the creation of channels of interaction."*

Innovative approaches are needed for a more rigorous and comprehensive analyses of the interrelationships of processes determining the 'development toward sustainability', to build up a globally carried approach that is complementary to the accent on the environmental research carried out so far. As well as from the side of the ISSC argued is that we have to pioneer "*Social [including economic and juridical] scientists bring a wealth of knowledge about processes of social [societal] transformation that will be critical to dealing with issues of environmental change and sustainability [needed are] holistic research approaches to sustainability and social justice"*. [27]The operationalisation of the Manifesto is oriented on connecting university departments and their student populations to contribute in an orchestrated way to these objectives.

## 1.5.    The content of the paper

Section two of this paper refers to the International Panel on Climate Change's (IPCC's) fifth Report[28] and connects these with the Brundtland comment in 2012. Also the need to incorporate the urban surrounding is stressed. Furthermore the paper summarises a number of new pathways to reduce carbon emissions as a result of current negotiations between the USA and China. Finally, this exploration will deliver arguments for renewing governance standards at global level, and for broadening the perspective.

Thanks to the inspiring ICCP fifth Report, the paper's third section is dedicated to various environmental issues as point of prior reference. It is an excursion. These issues may function as arguments to focus on complex societal processes caused by human interferences. It presents  a short overview of the effects of global warming, the rate of sea-level rising, marine biodiversity and ocean pollution, the ongoing process of deforestation and the ecological footprint, arguing that the current production and reproduction relationships also lead to an increase of carbon emissions. The objective of this excursion is to deliver new points of departure, see following sections.

The fourth section is dedicated to the urban context which, as said above, is relatively neglected in much of the sustainability and climate change discourses. The paper refers to

---

[27] ISSC (2016),  'Three Transformative Knowledge networks launched by ISSC' ………………………….

[28] Intergovernmental Panel on Climate Change (IPCC) (2014), '*Climate Change 2014: Impacts, Adaptation, and Vulnerability*' (http://ipcc-wg2-gov/AR5

the global work by the Italian Aldo Della Rocca Foundation, the UN-Habitat, UNEP and UNDP-China. It also discusses recent outcomes of China-EU research about models for citizens' empowerment underpinning environmental protection[29] This section hypothesises that this neglect is contra-productive for understanding processes leading to overall sustainability. This hypothesis has already been formulated in the context of the Friends of the Earth International since the 2000s.

Section five of this Working-paper refers to reflections about the current economic discourse, mostly disregarding 'the world around' and thus also leading to a neglect of the urban context in the sustainability debate. Especially the current economic discourse often refers to undefined and thus empty concepts as the 'social dimension' and to individualistically conceived concepts as 'quality of life' or 'social capital'. The 'social dimension' remains an unopened black-box, a ragbag of everything that is not economic or environmental. A more careful consideration is required including at least a heuristic distinction between the socio-political and a socio-cultural dimension as alternative of the so-called 'social dimension'. The section also discusses a recent main topic in the world of European banks, the recent speech of the President of the Bank of England and studies by the World Bank, the UNDP and the International Monetary Fund for underlining its argument for a paradigm shift for contribution to the development of sustainability.

Section six is dedicated to arguments presented in the 'World Social Science Report 2013' [30]to underpin the paper's plea for focussing on the interconnectedness of the four main dimensions. This will – in connection with the fifth section – pave the way for the following section. Especially the section refers to the Report's issue about resilience and safe planetary boundaries as a start for the following section about 'the problematique'.

Section seven argues that we need a 'point of Archimedes' to understand the problematique of sustainability. This leads to the question which conceptual framework and related methodological framework 'as point' are adequate for analysing the interconnectedness of the four dimensions and how the human security and social quality approaches may contribute to the constitution of both frameworks. In other words what is the significance of this attempt to accomplish global consensus on the essence of sustainability, regarding

---

[29] Center of Environmental Education and Communications of Zhejiang Province (CEECZJ), '*EU-China Environmental Governance Programme (EGP); Part B.Full Application Form',* Europe Aid/ 132-005/l/ACT/ CN. This project is financed by the European Union and the Chinese Government. The IASQ, the University of Leeds and the University of Glasgow functioned as main partners of this project, oriented on the Zhejiang Province.

[30] …………
…….

climate change as merely an aspect of it. And which indicators are needed for assisting empirical research?

Section eight is dedicated to proposals for a complementary approach to ongoing environmental studies as summarized by the IPCC and the ISSC. The specific theme of the previous section is not raised in the IPCC's fifth Report and the ISSC's 2013 Report. The proposals concern an extra effort for the orchestration with a real 'point of Archimedes' of a manifold of separate studies in order to assist the contribution toward the development of overall sustainability. In other words to stimulate the academic world to take on board the challenge of sustainability as the most important issue of mankind in the coming decades. It is a plea to upgrade the ambition to be as adequate as possible for the future of mankind.

## 2. To broaden the climate change discourse

In this section the path-breaking work by the Intergovernmental Panel on Climate Change (IPCC) is discussed[31] and connected with the Brundtland argument. Implicitly the necessity to broaden our attention to the urban context is thus legitimized. This is followed with outcomes of the recent negotiations on the reduction of carbon emissions - stimulated by the IPCC's work - with which to prepare the Paris conference in December 2015. This referral demonstrates more clearly the consequences of neglecting the urban context as socio-political space of all production and reproduction relationships. This section will be completed with some considerations about the need to change forms of governance addressing this discrepancy.

The world's top two emitters have finally stepped up, announcing concrete climate commitments in a joint statement.

### 2.1. The IPCC's fifth Assessment Report

Since the Brundtland Report on 'Our Common Future' an extensive acceleration of studies have generated policies designed for, and aimed at, addressing issues concerning 'overall sustainability'. In the IPCC's Fifth Assessment Report (AR5), published in the late 2014, we read "*the number of scientific publications available for assessing climate-change impacts, adaptation, and vulnerability more than doubled between 2005 and 2010, with especially*

---

[31] IPCC, see note-9.

*rapid increases in publication related to adaption.*"[32] This is not remarkable, because "*each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850 (…) Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by* **economic** *and* **population growth** *(…) Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century.*"[33] Furthermore the report argues that: "*Delaying additional mitigation to 2030 will substantially increase the challenges associated with limiting warming over the 21*st *century to below 2°C relative to pre-industrial levels. It will require substantially higher rates of emissions reductions from 2030 to 2050.*"[34]

With this in mind and the awareness of the serious insufficiency of the results of politics and policies Gro Harlem Brundtland criticized national governments all over the world not to take the question of sustainability on board as the most important challenge for human mankind.[35] Processes caused by the reciprocity of the manifold of aspects of the four dimensions mentioned above are not really included. To understand these processes we need a cross-disciplinary and comprehensive approach, going beyond the topic of the reduction of carbon emissions as consequences of current methods of energy production. The ICPP's Report also refers to this point. It argues: "*comprehensive strategies in response to climate change that are consistent with sustainable development take into account the co-benefits, adverse side effects and risks that may arise from both adaptation and mitigation options.*"[36] But comprehensive strategies assume a 'comprehensive understanding' of the development toward sustainability. The first implies an adequate conceptual framework for realizing this approach. The second implies a theoretical grounded notion of sustainable development with the help of the first. Both are currently lacking in the discourse on sustainability and therefore in the climate change debate.

### 2.2  The Brundtland argument

In fact Brundtland's comment in 2012 is rather complicated. The Fifth Assessment Report (AR5) clearly demonstrates a substantial increase of activities by governments, companies,

---

[32] Intergovernmental Panel on Climate Change (2014), '*Climate Change 2014: Impacts, Adaptation, and Vulnerability.* **Summary** *for Policymakers',* (IPCC/Cambridge University: Cambridge University Press –http://ipcc.ch/pdf/assessment-report/ar5/wg2/ar5_wg11, p. 4)

[33] Intergovernmental Panel on Climate Change (2014), ' *Climate Change 2014:* **Synthesis Report**. *Summary for Policymakers',* (IPCC: Geneva,  https://www.ipcc/pdf/assessment-report/ar5/syr/ar5_syr_final_spm) , p. 2 and p.4

[34] IPCC (Synthesis Report), see note-14, p. 24.

[35] Brundtland, see note-5.

*36* IPCP (Synthesis Report), see note-13,  p. 17.

non-for-profit organisations, international and national operating ngo's, community based action groups to address the increasing ecological problems during the past years. It declares *"people, governments and the private sector are starting to adapt to a changing climate. Since the IPCC Fourth Assessment Report (AR4), understanding of response options has increased, with improved knowledge of their benefits, costs and links to **sustainable development** (…) There is increasing recognition of the value of social (including local and indigenous), institutional, and ecosystem-based measures and of the extent of constraints to adaptation"*. [37] But in the same vain, it also concludes that "*Most assessments of adaptation have been restricted to impacts, vulnerability, and adaptation planning, with **very few (sic)** assessing the processes of implementation or the effects of adaptation actions".*[38] Was Brundtland's judgement compatible with the IPCC's conclusions recently drawn about the implementation of adaption actions? What is the 'problematique' behind the increasing strategies to prepare for – in terms of the IPCC – sustainable development?[39] And how to understand the essence of sustainable development in connection with climate change and climate systems? How does the IPCC Report interpret 'assessing the processes of implementation' and how to explain its dangerous insufficiency? And this insufficiency, is this also the point Brundtland made in 2012?

## 3.  *The need to incorporate the urban question*

An important issue in this paper is how the role of the urban context is perceived in the discourse on climate change. During the Rio+20 conference on sustainability in June 2012 it was rather non-existent.[40] The traditional distinction between the economic, social and environmental dimensions of sustainability does not stimulate the incorporation of the urban question in the sustainability discourse. The ICPP Report (AR5) concludes that many global risks of climate change are concentrated in urban areas: "*Steps [made in the urban areas] that build resilience and enable sustainable development can accelerate successful climate-change adaptation globally*".[41] This seems to be true although at the same time it implies a reduction of 'the problematique' (see below). Very soon more than 70 per cent of the world population will live in these areas. It is mainly in the urban context  where the productive and

---

[37] IPCC ( (Synthesis Report)), see note-13,  p.95.

[38] IPCC (Summary), see note-12, p. 8.

[39] Important to notice is the ICPP Report (AR5) does not elaborate the issue of 'sustainable development', theoretically nor practically.

[40] L.J.G. van der Maesen, P. Herrmann  (2012), '*Paper on behalf of the Dutch expert-meeting about the outcomes of the Rio+ sustainability conference in June 2012'.* (Amsterdam/The Hague: IASQ).

[41] ICPP (Summary), see note-12,  p. 18.

reproductive relationships of people will be 'realized'. Therefore – and see also the WWF (World Wide Fund for Nature) – cities/metropoles are responsible for 70 percent of global CO2 emissions as well as massive material consumption and waste.[42]

According the report by the UN-Habitat of some years ago – which is still very up-to-date – we should broaden our perspective. It describes how *'the first decade of the twenty-first century has been marked by overwhelming challenges including a food crisis, an energy crisis, a financial crisis, and   growing realization of the consequences of climate change. Thousands of organizations are developing tools and offering policy options to meet these challenges. But these activities are disparate and tend to ignore an equally unprecedented mega trend: that the world is undergoing an irreversible process of rapid urbanization. Failure to accommodate this mega trend has resulted in unsustainable forms of production and consumption, poverty and social exclusion, and pollution.'*[43] This is repeatedly underlined by the Italian Aldo Della Rocca Foundation, explaining the nature of the current crisis   of metropoles and megacities: *"a total of 20 million human deaths occurred in 2011, more than 15 million are attributable to the city: 9 million from hunger, 2 million from cancer (data relating only to urban causes), 1 million from road accidents and 3,5 million for pollution".*[44] If we also take into account that, today, about 1 billion people (one-third of the world's urban population) live in slums in inequitable and life-threatening conditions and are directly affected by increasingly frequent occurring environmental and societal crises, it becomes clear that much of the developmental work toward sustainability will have to be directed at cities - and (ultimately) be carried out by cities.[45]

As we argue below, these urban areas – see the ICPP's fifth Report -  function for a manifold of reasons as the most important points of departure for sustainable development or the lack of it. Politics and policies coping with climate change and the challenge of sustainability cannot appreciate urban areas as an appendix of these politics and policies. These areas are mainly the space where the productive and reproductive relationships of people will be 'realized'. It is here where the interconnectedness of the socio-economic, socio-political, socio-cultural and socio-environmental dimensions takes place. The outcomes are decisive for climate change as well as for overall sustainability. Do we need a complementary

---

[42] http://wwf,panda.org/what_we_do/footprint/cities/urban_solutions/2015.

[43] UN Habitat (2009), *For a better Urban Future* (Paris: UN).

[44] C. Beguinot (2014), *UN Event: The contribution of the Della Rocca Foundation'*, (Rome: Aldo Della Rocca Foundation).

[45] C. Beguinot et al (2012), '*Human rights and The city Crisis: for the Urban future'*, (Naples: Gianni: series of urban studies).

approach of the work of the Intergovernmental Panel on climate change in order to go beyond the accent on the environmental dimensions?

## 4.    New pathways for reducing carbon emissions

The ICPP's fifth Report is quite clear about the current environmental state of affairs as a consequence of the refusal or lack of decisiveness as mentioned by Brundtland. The warming of the climate system continues. Two essential conclusions are made, namely first, that "*human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems*", and second, "*Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen*".[46]  The Report also claims that "*less than 400 billion dollars a year is being spent around the world to reduce emissions or otherwise cope with climate change. That sum is smaller than the revenue of a single American oil company, Exxon Mobil*".[47]

In 2002 China surpassed the United States as the world's largest emitter of carbon dioxide. According to data from the US Energy Information Administration China was also top emitter by fossil fuels Co2 in 2009: China 7.710 million tonnes (25,4%) about of US with 5.420 mt (17,8%), India 5.3%, Russia 5,2% and Japan 3,6%. China was also the top emitter of all greenhouse gas emissions including building and deforestation in 2005: China 7.220 mt (16.4 %), US 15.7%, India 4.2%, Russia 4,6%, and Japan 3.9%. [48] But we have to realise that anno 2015 the Chinese population is 4.5 times more than the USA' population; this was more or less also the case in 2005 for emissions per million inhabitants see below).

For these reasons, the landmark agreement, jointly announced by President Obama and President Xi Jinping at the end of 2014 concerned the reduction of carbon emissions. For the USA the target is to cut emissions by at least 26 percent from 2005 levels by 2025. With regard to China it concerned a first-ever commitment to stop its emissions from growing by 2030. Unexplained remained the extent of this growth and the reasons behind it.[49] Added is

---

[46] ICPP (Synthesis Report), see note-13,  p.2

[47] UN Report (2014), *International New York Times*, 3 November: 1.

[48] https://en.wikipedia.org/wiki?Climate_change_in_china.

[49] U.S. and China Reach Climate Accord After Months of Talks (http://wwwnytimes.com/2014/11/12/world/asia/china-us-xi-ob.)

China will increase the sun and wind energy production until 20 percent in 2030 compared to 6 percent in 2014.[50] Recently the Obama Administration launched its elaboration of this commitment in August 2015, saying it is time to intervene, because of the fact that globally the 10 warmest years on record all occurred since 1998. Since carbon pollution is the biggest driver of climate change – causing an increase of average temperature by more than 1.5 degrees between 1980 and 2012 – this Administration will put the USA on path toward a 32 percent reduction in carbon polluting by 2030. An impressing strategy is presented to reach this goal in all levels of society: industry, energy production, agriculture, transport, in cities, urban quarters, hospitals, schools, homes, business and factories.[51]

The European Union launched a plan to reduce emissions by at least 40 percent by 2030 compared to 1990 in its 'Vision for the new agreement' (on behalf of the forthcoming Paris conference) and it put the world on track to reduce global emissions by at least 60 percent to be below 2010 levels by 2050.[52] The EU and China also decided to collaborate to fight 'climate change' following the 17th EU-China summit held in Brussels. Miguel Arias Canete, European Commissioner for Climate Action and Energy "*applauded China's commitment to becoming a resource efficient and climate resilient, low-carbon economy. (….) Add the United States, and we have [with the EU and China] around half of world emissions (….) We expect this to be reflected in an ambitious and binding global climate change agreement in Paris this December*".[53]

However, from India contrary statement were heard last year. This is of interest because in this way the socio-political dimension, not addressed in the Chinese, North-American and European examples, becomes apparent. India's new environment minister explained that India will not decrease these emissions because it has to eradicate poverty; 20 per cent of the population does not have access to electricity: "*The USA should decrease these emissions as the world's largest historic greenhouse polluter*". [54] This is an argument to be considered seriously. The Global Carbon Atlas explains that the production of greenhouse gas emissions **per million inhabitants** in 2013 differs significantly between the USA, the EU,

[50] L. Taylor and T. Branigan (2014), 'US and China strike deal on Carbon Cuts', *The Guardian Weekly*, 21-27 November, Vol. 191, nr.24:6.

[51] President Obama (2015), '*Climate Change and President Obama's Action Plan'*, (http://www.whitehouse.gov/climate-change.

[52] European Union (2015), *'The 2015 international agreement'* (http://ec.europa.eu/clima/policieis/ international /negotiations /future/ index_en.htm).

[53] European Union (2015), 'EU and China step up cooperation in fight against climate change', (http://ec.europa/clima/news/ articles/ news_2015062901_en.htm).

[54] C. Davenport (2014), 'Delhi warns that carbon emissions will increase', *International New York Times*, September 26, 5.

China and India, namely respectively: 15, 7, 7.5 and 2 mtCo2.[55] Implicitly this underlines India's point of view.

As we will describe below, the ecological footprint of Indian inhabitants is also much below the footprint of inhabitants of the USA, the EU or China. This issue refers to a political argument as well, namely the immense inequality of daily circumstances between populations on earth. With this in mind the International Friends of the Earth with regard to the USA-China commitment take it as good news that China is taking up the fight against climate change. However the cuts pledged by President Obama are nowhere near what the USA needs to cut if it will prevent a runaway climate change: Furthermore it says, that "*Disgracefully, today's announcement ignores the fact that developing countries urgently need finance and technology to transform their energy system and adapt to climate change*". Furthermore it concludes, the world has to do more than this. Not only the greenhouse gas emissions are the problem. [56]

## 5.    The question of new governance standards

It is evident, that the accent on reduction of carbon emissions to safeguard our 'common future' is crucial: but is it sufficient as well? For example ocean researchers examined that "*Ships intentionally dump more engine oil and sludge into the oceans in the span of three years than that spilled in the Deepwater Horizon and Exxon Valdez accidents combined (….) and emit huge amounts of certain air pollutants far more than all the world's cars. Commercial fishing, much of it illegal, has so efficiently plundered marine stocks that the world's population of predatory fish has declined by two thirds (…) When wrongdoing occurs, no single agency within a country or specific international organization typically has a sufficient stake in the matter to pursue it*".[57] In the case of China, the UNDP-China concluded in an extensive study, that "*the current performance evaluation system for **local governance** is focused mainly on economic growth, with little attention to resource conservation, environmental protection and social development, and there are no incentives for sustainable planning and development*".[58] This UNDP Report indeed broadens the perspective. Climate

---

[55] www.globalcarbonatlas.org.

[56] S. Shaw (2014), Friends of the Earth International Climate Justice and energy Coordinator, www. foei.org/news/us-climate-pledges-just-a-drop-in-the-ocean.

[57] I. Urbina (in collaboration with D.Bounias, N. Leontopoulous, K. Bennett) (2015), 'Crimes aboard a scofflaw ship: The Dona Liberta offers case study in misconduct rife on the world's seas', *International New York Times*, July 18-19: 6.

[58] UNDP-China (2013), '*China National Human Development Report: Sustainable and Liveable Cities: Toward Ecological Civilization',* (Beijing: China Publishing Group Corporation), p. 89.

change is an aspect of overall sustainability (see below). Without changing past and current politics with regard to metropoles and mega-cities, oceans, forests as condition also for the supposed necessity for economic growth the restriction to carbon emissions reduction will not be sufficient for the development toward sustainability.

This is also the interpretation of many Dutch NGO's who supported the NGO Urgenda to take this matter to the Dutch Court. The Court concluded that the Dutch State had undertaken insufficient action to address the multiple causes of climate change. It is the **first example** in the world, where a Court reproached the State.[59] This Dutch failure is quite logical because the lack of a broad perspective on sustainability; it is non-existent in the dominant political discourse in this country. It is astonishing, that the Dutch governmental studies demonstrates recently that use of coal for the production of energy substantially increased in 2015 despite the urgent need for a decrease.[60] In fact in the same vain the Volkswagen (and most likely other auto producers as well) deceived authorities in the USA and the EU with lowering "*emissions to legal standards during emission testing but let the pollutants spew the rest of the time increasing performance.*"[61] These practices were debunked in the USA, not in the EU. Who conducts emissions tests and how they go about it remains a central question on both sides of the Atlantic in the wake of the Volkswagen scandal. That producers of auto cars in the EU yearly spend more than 20 million euros on lobbying may be an outcome of their policies. Furthermore in the case of Volkswagen the German Government is represented in its board. According a Dutch newspaper, this government, supported by those of Italy, France, Hungary and Slovenia will not accept the plans by the European Commission to reduce the nitrogen dioxide (NOx) according to also US standards. No lessons are learned from the scandal according the newspaper.[62] With this in mind it is of interest to notice that Pope Francisco in his second Encyclical call of June 2015 especially broadened the debate. With regard to the forthcoming Paris conference he argued, that "*I am concerned to encourage an honest and open debate so that particular interests or ideologies will not prejudice the common good".* [63] The issue of the 'common good' is crucial for the issue of 'overall sustainability' and is not really applied in the political discourse.

[59] J. Trommelen (2015), 'The Judge punished lax climate politics', *de Volkskrant*, 25 June:1.

[60] Dutch Central Office of Statistics (2015), 'Stateline: use of coal for energy production' (http://Stateline.cbs.nl/ StateWeb/publication/ DM=SLNL&PA=3762)

[61] Editors (2015), 'What was Volkswagen thinking?', *International New York Times*, September 25, 8.

[62] M. Peeperkorn (2015), Countries which produce auto cars as France, Germany and Italy negate the Volkswagen scandal'*, De Volkskrant*, 22 October, p.1.

[63] Pope Franciscus (2015), *'Laudato Si: On care for our common home (on the environment and sustainable development)'.* Rome: Vatican: (http://en.wikipedia.org/wikli/laudato_si%27 #content)

A reversal of the argument is also of interest. Considerable amounts of money have been provided or are pledged to combat climate change through adaption and mitigation activities.[64] One such example is the initiative to reduce emissions from deforestation and forest degradation in developing countries (REDD+). Countries have agreed to a number of 'safeguards' to ensure such challenges as ensuring free prior and informed consent (FPIC) of local communities. But the criteria that guide these are inconsistent across funding agencies and projects.[65] NGOs have already raised concerns about the potential for corruption.[66] Without clear standards for good governance which should safeguard the 'common good', the many billions of dollars that flow into climate finance may not be used with integrity, and could lead to perverse and unsustainable societal and environmental outcomes on the ground.

## 3.   *Environmental issues as point of prior reference: an excursion*

In this section describes different environmental issues as point of prior reference. These issues may demonstrate that our focus should be oriented on **complex societal processes** (see below) caused by human interferences which also lead to climate change. This excursion may be appreciated as background for following sections. The ICPP's fifth Report preliminary point to take on board is that the collected risks of climate change are so profound they could stall or even reverse generations of progress related to eradicating poverty and hunger if also carbon emissions continue at a runaway pace. With this in mind it is of interest to refer to a study by Pakistan experts who made an overview covering a great number of issues mentioned below. It shows the consequences for this country and refers to government measures – despite the difficult political relations – for preparing sustainable development or development toward sustainability. One of the consequences is the land degradation: "*Erosion is accelerating due to anthropogenic factors such as the destruction of naturel vegetation and over-grazing. Degradation of arable land caused by wind and water erosion increased by almost 3.5 million hectares from 1993 to 2003 and comprised about 18*

---

[64] http://unfccc.int/focus/climate/items/7001.php#intro.

[65] Lopez-Casero, F. Cadman, T., and Maraseni. T. (2015), '*Quality-Of-Governance Standards for Carbon Emissions Trading. Developing REDD + Governance Through a Multi-Stage, Multi-Level and Multi Stakeholder Approach – Updated Version,* (Kanagawa: Institute for global Environmental Strategies).

[66] See for example: Martin, C and Elges, E. (2013),  '*Protection climate finance: an anti-corruption assessment of the Forest Carbon partnership Facility*', (Berlin: Transparency International), And: http://files.transparency.org/content/download/1442/10766/file/2013, Protection Climate finance FCPF EN. Pdf, And: Martin, C. (2013), '*Protecting climate finance: an anti-corruption assessment of the UN-REDD programme*', (Berlin: Transparency International), And http://files.transparaency. Org/content/download/723/3100/file/2013, ProtectingClimateFinance UN-REDD EN pdf.

*million hectares in total in 2003.*" [67] It is a demonstration of forms of destruction caused by current production and reproduction relationships which also cause the increase of carbon emissions. This is also the concern of the following six examples of this excursion.

## 1. Global warming

The IPCC (AR5) concludes that the warming of the climate system continues. This threatens many ecosystems and cultures. Their number will rise with additional warming of around 1°C: "*many species and systems with limited adaptive capacity are subject to very high risks with additional warming of 2°C (…) risks from extreme events such as heat wave, extreme precipitation, and coastal flooding, are already moderate and high with 1°C additional warming.*" The Report also concludes that risks are unevenly distributed and are generally greater for disadvantaged people and communities in countries at all levels of development. It adds furthermore that "*extensive biodiversity loss with associated loss of ecosystem goods and services results in high risks and 3°C additional warming. Aggregate economic damages accelerate with increasing temperature*".[68] According this Report,  the collected risks of global warming are so profound they could stall or even reverse generations of progress related to eradicating poverty and hunger if greenhouse gas emissions continue at a runaway pace. This is also caused, because "*ecosystems may be at risk of abrupt and irreversible changes. Risks associated with such tipping points become moderate between 0-1°C additional warming (…) risks increase disproportionately as temperature increases between 1-2°C additional warming and become high above 3°C.*"[69]

## 2. Ocean warming, the rate of sea-level rising and societal consequences

Outcomes of recent studies also demonstrate that in the upper 700 meters the heat content of the oceans has increased- as a consequence of global warming -  significantly from 1955-2010.[70] Glaciers have continued to shrink almost worldwide. The ICPP concludes that the global ocean will continue to warm during the 21st century, with the strongest warming projected for the surface in tropical and Northern Hemisphere subtropical regions: "*Earth System Models project a global increase in ocean acidification for all RCP scenarios by the end of the 21st century (….) It is virtually certain that near-surface permafrost extent at high*

[67] S. S. Hussain, P.S.U. Sabri (2014), 'National Environmental Policy development for sustainable Economic Growth in Developing countries: a Case Study of Pakistan', *International Journal of Social Quality* , 4 (1):  78-94,   88

[68] ICPP (Summary), see note-12, p. 12

[69] ICPP (Summary), see note-12, p.12

[70] http://en.wikipedia.org/wiki/effects_of_global_warming_ocean

*northern latitudes will be reduced as global mean surface temperature increases with the area of permafrost near the surface (upper 3.5 m) projected to decrease by 37% (RCP2.6) to 8% (RCP8.5) for the multi-model average.*"[71] This is very crucial for the sea-level, because the 'thermal expansion' of the ocean due to the increase of its temperature which is the main driver of the rise.

The ICPP Report outlines "*there has been significant improvement in understanding and projection of sea level change since the AR4. Global mean sea level will rise continue during the 21st century, very likely, at a faster rate than observed from 1971 to 2010*".[72] During the past century the sea level rose about 15-20 cm meters: at the end of the century greater than over the earlier part. Glaciers and ice sheets are large, slow moving assemblages of ice that cover about 10% of the world's land area and exist on every continent except Australia: "*over the last century, most of world's mountain glaciers and ice sheets in both Greenland and Antarctica have lost mass. With regard to the Mountain Kilimanjaro in Africa the volume of its glacial has decreased 80% in the past century.*" [73] In other words, over the last two decades, the Greenland and Antarctic ice sheets have been losing mass and glaciers have continued to shrink almost worldwide.[74] With regard to Greenland, it is now losing 20 per cent more mass than it receives from new snowfall each year: "*Ice sheet are thick, broad masses of ice formed mainly from compaction of snow. They spread under their own weight, transferring mass towards their margins where it is lost primarily by runoff of surface melt water of by calving of icebergs into marginal seas or lakes.* "[75]

Due to the sea level rise projected throughout the 21st century and beyond "coastal systems and low-lying areas will increasingly experience adverse impacts such as submergence, coastal flooding, and coastal erosion and immense drought in many regions. According to the Human Development Report 2007/8 the question for who all of this is dangerous is not really on the global agenda. It is not dangerous for most of the affluent but for millions of poor people: "*262 million people were affected by climate disasters annually from 2000 to 2004, over 98 percent of them in the developing world*". [76] Furthermore: "*The 1 billion people*

---

[71] ICPP (Synthesis Report), see note-13, p.12.

[72] ICPP (Synthesis Report), see note-13, p.13.

[73] www.climate.org/topics/sea-level.

[74] B. Clark Howard (2014), *National Geographical Daily News*, May 14 ( http://www.google#q-geographical-Research-Letters).

[75] Global Greenhouse Warming: Melting Greenland (2015)  (http://www.global-greenhouse-warming.com/melting-greenland.html).

[76] UNDP (2007), '*Human Development Report 2007/8 –Fighting Climate Change Human Solidarity in a Divided World',* (New York: Palgrave Macmillan), p.16.

*currently living in urban slums on fragile hillsides or flood prone river banks face acute vulnerabilities.*"[77] And according to the ICPP Report, the population and assets projected to be exposed to coastal risks as well as human pressures on coastal ecosystems will increase significantly in the coming decades due to population growth, economic development, and urbanization."[78]  In the case of China the rising sea level is an alarming trend because China has a very long and densely populated coastline, with some of the most economically developed cities, see e.g. Shanghai, Tianjin, and Changzhou. Chinese research has estimated that a one-meter rise in seal level would inundate 92.000 square kilometres of China's coast, thereby displacing 67 million people.[79]What are the consequences for the socio-political and socio-cultural dimensions of sustainability if the sea level continues to rise significantly?

### 3.    Coral reef and marine-biodiversity destruction and pollution of the oceans

Another effect is a serious marine-biodiversity reduction in sensitive regions which will challenge the sustained provision of fisheries productivity and other ecosystem services: "*climate change adds to the treats of over-fishing and other non-climate stressors, thus complicating marine management regimes.*"[80] Not only the greenhouse gas emissions and the related warming of oceans are a problem. For instance, the Global Coral Reef Monitoring Network demonstrates that coral reefs – the well-springs of Ocean life – are threatened also by localized effects of overfishing, run off pollution from the land and the destruction of habitats from costal development.[81] In 2008 international coral reef specialists estimated that 19% of the existing area of coral reefs has already been lost, and that a further 17% is likely to be lost over the subsequent 10-20 years. Only 60% of the world's reefs may could currently be regarded as in good health: "*intense harvesting, especially in maritime Southeast Asia (including Indonesia and the Philippines) damages the reefs. This is aggravated by destructive fishing practices, such as cyanide and blast fishing (….) with increased human population and improved storage and transport stems, the scale of human impacts on reefs has grown exponentially. For example, markets for fish and other natural resources have become global, supplying demand for reef resources*".[82] On the other hand, due to projected

---

[77] UNDP, see note-56, p. 19.

[78] ICPP (Summary), see note-12, p. 17

[79] Climate change in China, wikipedia, https://en.wikepedia.org, wiki, climate_change_in_China.

[80] (ICPP (Summary), see note-12, p. 17.

[81] J. Jackson and A.E. Johnson (2014),  How to save Caribbean Coral Reefs?", *International New York Times*, 18 September, p. 8

[82] https://en.wikipedia.org/wiki/environmental_issues_with_coral_reefs.

climate change by the mid-21st century and beyond, global marine-species redistribution and marine-biodiversity reduction in sensitive regions will challenge the sustained provision of fisheries productivity and other ecosystem services: "*The progressive expansion of oxygen minimum zones and anoxic 'dead zones' is projected to further constrain fish habitat.*"[83]

This also refers directly to human actions, responsible for the nature of such permissible socio-political and socio-cultural dimensions of societal life. Such a permissibility also concerns the increasing number of waste dumped in rivers and thus the oceans, causing the immense areas of 'plastic soup', poisoning ocean life: *"it floats forever. Plastics are a curse of the world's oceans".* [84] The forthcoming Olympic game for sailboats cannot take place in the Rio de Janeiro Bay because of the incredible amount of garbage in this water area. Recent studies show that degradation, particularly of shoreline areas, has accelerated dramatically in the last three centuries. This is not only the result of enormous shipping or fishery pollution, but also by industries and urban lifestyles. Scientists have already counted some ***400 dead zones*** (see above) around the world where little or no marine life can exist anymore.[85] According to the National Geographic, the bad news is that in 2010, eight million tons of plastic trash ended up in the ocean from coastal countries – far more than the total that has been measured floating on the surface in the ocean's garbage patches: "*The even worse news is that the tonnage is on target to increase tenfold in the next decade unless the world finds a way to improve how garbage is collected and managed*".[86] The UNEP adds, that the accumulation and possible impact of micro plastic particles in the ocean have been recognized as an emerging environmental issue.[87]

## 4.  The process of deforestation

Forests feed our rivers and are essential in supplying water for nearly 50% of the largest cities, including new York, Jakarta and Caracas. They help to regulate the often devastating impact of storms and floods.[88] They cover one third of the earth's land mass and next to performing these vital functions around the world are also delivering a live hood for 1.6 billion

---

[83] ICPP (Summary), see note-12, p. 17.

[84] Editorial (2015), 'A Welcome Ban on Forever Foam', *International New York Times*, 10 January, p.8.

[85] National Geographic (2015), 'Marine Pollution', (http://ocean.nationalgeographic.com/ocena/explore/pristine-seas/ critical-issues-marine)

[86] L. Parker (2015), '*Eight Million tons of Plastic Dumped in Ocean Every year*", National Geographic (http://news.nationageographic. com/news/2015/02/150212-ocean-debris-plastic-garbage).

[87] www.unep.org/yearbook/2011/pdfs/plastic_debris_in_the_ocean.

[88] www.unep.org/yearbook/2011/pdfs/emerging_perspectives_on_forests

people. They are also the most biologically-diverse ecosystems on land, home to more than half of the terrestrial species of animals, plants and insects. Despite its significance for human existence forests are destroyed at an alarming rate, namely 13 hectares of forests are destroyed annually, equal to the size of Portugal.[89] According the UN Report *"there's no silver bullet to halt forest loss and degradation. A suite of solutions – ranging from expanded protected areas to more sustainable consumption patterns – are needed to ensure that forests survive the 'land squeeze' creating by the rust to supply humanity's growing demand for food, energy and materials"* [90]

As the WWF's analysis shows the amount of wood we take from forests and plantations each year may need to triple by 2050 under the same circumstances (ceteris paribus).[91] This has a very negative impact on the environment. The most dramatic impact is the loss of habitat for millions of species. It is also a drive of climate change. According the National Geographic, *"Forest soils are moist, but without protection from sun-blocking tree cover they quickly dry out. Trees also help perpetuate the water cycle by returning water vapor back into the atmosphere. Without trees to fill these roles, many former forest lands can quickly become barren deserts."*[92]  Due to this process wildfires exploded the past decennia. Fires ravaging parts of Indonesia during the 1997 El Nino driven dry season pumped as much carbon into the atmosphere as all living things on the planet remove from it in one year.[93] This is underpinned by Australian studies.[94]

A summary of the outcomes of related factors are presented in a recent article by Pakistan experts: *"The rapidly shrinking wetlands, some of which are of international significance, and the wondrous juniper forests inhabited by numerous forms of fauna and flora are in danger of extinction due to rapid deforestation, discharge of sewage and industrial effluents into marine and aquatic ecosystems, increase in both wind and water erosion due to reduction in*

---

[89] UNEP (2015), 'Forests are home to more than 50% of terrestrial biodiversity', http;??ww.unep.org/forests/ aboutForests/tabid/29845/ Derfault.aspx.

[90] WWF-UN (2015), '*UN report finds deforestation slowing, but not fast enough for forest communities or the climate'*, http:// wwf.panda.org/homepage.cfm?252071/UN-report-finds-deforestiation-slowing.

[91] WWF-UN, see note-70.

[92] National Geographic (2015), '*Modern-Day Plague: Deforestation'*, (http://environment.nationalgeographic.com /environment/global-warming/deforestation.

[93] S.E. Pace et al (2002) , 'The amount of carbon released from peat and forest fires in Indonesia during 1997', *Nature*, 420, pp.61-65.

[94] R.L. Langefelds et al (2002), 'Interannual growth rate variations of atmosphere CO2', *Global Biogeochemical Cycles*, 16, 1048 (http// www.nature.com/news/2002/021107/full/news021104).

*vegetation cover, and so forth, and these are only some of the crucial challenges facing the country*".[95]

This effect on climate change in the long run refers to human actions. Logging operations, which provide the world's wood and paper products, also cut trees each year. Loggers, some of them acting illegally, also build roads to access more and more remote forests – which leads to further deforestation. Forests are also cut as a result of growing urban sprawl.[96] Very serious are the circumstances in southeast Asia.  Tash Ae describes how, for the last two decades, a cloud of pollution has drifted over the region during September and October. The smoke is coming from Indonesia where large corporations and small landowners alike take advantage of the dry season to clear the land of forest. The Indonesian government "*failures to rein in the powerful corporations that run the increasingly lucrative palm oil plantations in Sumatra and Kalimantan. Rising worldwide consumption and booming prices have made the commodity a major contributor to the Indonesian Economy – representing, by 2012, about 11 percent of the country's export earnings, second only to oil and gas (…) much of the frustration felt in Malaysia and Singapore lies in the lack of institutional means to force Indonesia's hand*".[97] This is a good example to illustrate the lack of adequate governance standards.

A clear example of such a process will be presented in a forthcoming study about the outcomes of impressive endeavours of Western Australian local communities and non-governmental organization to protect the old-growth Karri, Jarah, Marri, Tuart and Tingle forests. The Western Australian Government is overruling these groups because of economic interests to pave the way for plantations. With support of the governmental policy of 'sustainable forest management' loggers are enabled for economic reasons to destroy large parts of these forests. However, hese plantations will not maintain biodiversity, quite the contrary. The adjective 'sustainable' is synonym with 'continuation' of trees only, destroying the real characteristics  and especially ecological functions of these forests.[98]

---

[95] S.S. Hussain et al, see note-46, p. 92.

[96] National Geographic, see note-72.

[97] T. Aw (2015), 'Southeast Asia's hazy future'*, International New York Times*, 2 October, p.7

[98] L. van der Maesen (2015), 'Sustainable Forest Management in Western Australia: the case of…..' International Journal of Social Quality……. See further:  L. van der Maesen (2002),  '*Assessment of Forest  Blocks: Karri and Jarrah forests in Western Australia. Report for the EPA'*, (Utrecht: Utrecht University, Dep. of Physical Geography)., and: L. van der Maesen (2006), '*Investigation into forest Management in Western Australia using Remote Sensing and Field Surveys'*, (Utrecht: Utrecht University, Dep.  of Physical Geography), and: L. van der Maesen (2009), '*Submission  to Forest Stewardship Council, Australia. High Conservation Value Forests and Risk Assessment in Australia* (Utrecht: Utrecht University Dep. of Physical Geography), and: L. van der Maesen (2009), '*Submission Report. Forest management Plan 2004-2013. Midterm audit of Performance. Report for the Environmental authority and Minister for the Environment'*, (Utrecht: Utrecht University, Dep. Physical Geography).

## 5. Ecological footprint

The ecological footprint is a resource accounting tool that helps countries understand their ecological balance sheet and gives them the data necessary to manage their resources and secure their future. It is a composite index which gives an impression of the extent to which humanity is using nature's resources faster than they can regenerate. It estimates the amount of biologically productive land and sea area necessary to supply the resources of human population consumes, and to assimilate the waste that populations produce. According to Anna Coote, calculations find "*that the footprint has grown two and a half times in the last half century, and now exceeds the planet's capacity by 0.9 global hectares per person. Put another way, the human race needs a planet half as big again to support its current activities or three and a half planets if everyone were to live like the average US citizens*" [99]The Global Footprint Network explains, that *"if everyone lived the lifestyle of the average American (USA) we would need 5 planets"*.[100] The Network published the outcomes of the footprint per capita in the USA, Brazil, China and India (and many other countries:, respectively 7.0 (remains rather constant), 11,0 (is declining), 2.5 is increasing and 0.9 is increasing).[101]

The current differences on global level cannot be denied anymore. In global hectares per capita, residents of the USA and the EU cause a significantly much higher footprint than for instance residents of India or China. In the context of the four normative factors of social quality thinking – social justice, solidarity, human dignity, human capacity[102] – governments are not only obliged to decrease the emissions of carbon dioxide in common efforts, but **all forms of activities** which threaten human and natural systems on earth.[103] According to researchers, two conclusions can be drawn. First, the current average is already above the acceptable average. Second, a number of particular countries or regions is responsible for this situation. These need to decrease their 'footprint per capita' and others should be allowed to increase this 'footprint' in order to reach the same circumstances, to realize the four normative factors referring to human dignity etc. Technological innovations can help out

---

[99] A. Coote (2015), 'People, Planet, Power: Towards a New Social Settlement'*, International Journal of Social Quality*, Vol. 5 (1), She refers also to: V. Johnson, A. Simms and P. Chowla (2010), '*Growth isn't possible*', (http://www.neweconomics.org/publications/entry/growth-isnt-possible)

[100] Global Footprint network (2014), http//www.footprintnetwork.org/en/index.php/GEN/page/basic.

[101] Global Footprint Network, see note-80.

[102] L.J.G. van der Maesen, A.C. Walker (2012), '*Social Quality: From Theory to Indicators*', (Basingstoke: Palgrave Macmillan).

[103] A. Coote , see note-79.

here as well. However, in the end the final sum should be under the current average.[104] The UNDP's Report on sustainability and equity concludes that a person living in very high HDI (Human Development Indices) country accounts for more than 30 times the carbon dioxide emissions per person in a very low HDI country. How to reach an acceptable average for everyone?[105]

## 6. *Instability, criminality, and civil wars*

In this subsection we will distinguish three related topics; instability, criminal organizations and civil wars and the relationship with sustainability cq climate change. According Russian experts, societal instabilities cause 'environmental destructions' and in one way or the other this will influence the increase of carbon emissions as well. They argue, that the current 'state-monopoly capitalism' in Russia stimulates "*material self-interest, the monetary absolutization of human beings, and a socio-economic model of society as well as the achievement of personal freedom at the expense of justice and solidarity, [leading to] environmental destruction, asymmetric distribution of economic power in favour of [groups of] large business and bureaucracy"*.[106]  Implicitly they argue that for strategies combating climate change we should look at causes of instability and how to influence them. This issue is also highly relevant for many South American countries.

A second point concerns criminal organisations, illustrated by the Mafia in Europe. There is growing recognition that the Mafia is not only an Italian issue. Mafia practices have become global and mafia business money laundering takes place on an international scale. Highly professional criminal organizations from Russia or China are moving into legal business sectors in Europe as well. Jim Yardley describes how Confesercenti, one of Italy's largest business associations, has estimated that organized crime accounts for roughly 7 per cent of Italy's gross domestic product. The European Parliament is preparing legislation making it easier for national authorities to confiscate criminal assets because these criminal organizations are undermining the basic principles of the free market. Yardley discusses the analyses of Roberto Saviano, the author of a book about Neapolitan crime to understand also the global effects.[107] Even serious is the fact that these organizations undermine all

---

[104] J. van Renswoude et al, see note-7.

[105] UNDP-HDR (2011),  Sustainability and Equity: A Better Future for All, Overview' ([http://hdr.undp.org/en](http://hdr.undp.org/en) /media/ HDR_2011_en_Overview.pdf.

[106] V. Bobkov, O. VO. Veredyuk and U. Aliyev (2013), 'Risks of Society Stability and Precarity of employment: A look at Russia', *International Journal of Social quality*, Vol. 3 (1), 21-44, p. 22.

[107] J. Yardley (2014), 'mafia tentacles grow amid European crisis', *International New York Times*, April, 15: 4.

endeavours all attempts to prepare for sustainable development. They develop the most professional electronic communication strategies for their criminal objectives causing a so-called cyberwar with unforeseen consequences.  It is remarkable that this issue is not taken on board in the IPCC's AR5 at all.

More fundamental instability will be caused by civil wars, creating socio-political circumstances which are completely unable to cope with environmental questions. The question is wheter these situations cause an increase of carbon emissions as main cause of climate change. Since they prevent adequate economic investments for increasing production and reproduction processes they cause a decrease instead. As we will discuss the neo-classical economic approach presents the incentives for this increase. But wars will destruct other aspects of the environmental dimension, equally serious as the consequences of carbon emissions.

These three issues can be observed in a dramatic integrated way in Mexico. Recently a Dutch newspaper published an extensive overview how *instability* – mostly caused by serious poverty and lack of employment -   the *criminality* of drugs organisations with their own armed members applying cruel forms of torture and supported by corrupted policemen and the implicitly created form of *civil war* caused more than 200.000 deaths since 2006. Concluded is that 80 percent of the Mexican cities are infiltrated by organised criminality. Because this societal disorder, issues of climate change and the encompassing sustainability cannot play a role at all. [108]

## 4.  Revisiting the urban context

The paper's previous section started off with the issue of climate change caused by carbon emissions. Suggested is to broaden the view to a manifold of forms of environmental pollution and destruction caused by collected human interferences. Argued is, these interferences are mostly taking place in the urban context. In this subsection we will focus on debates with regard to the urban context, followed by attention for some dominant discourses with regard to the socio-economic dimension. Both topics are highly different but on abstract level they are interconnected. These discourses are also a cause for the neglect of the urban context as source of drivers of carbon emissions and a manifold of other emissions causing climate change. This counterproductive neglect is a consequence of the paradigm underpinning the dominant economic discourse. This thesis, if it makes sense, delivers arguments to approach the production of carbon emissions from a broader perspective. With

---

[108] M. van de Water  (2015), 'The Mexican Drug state: Everyone can traitor you: ', (De Volkskrant/Vonk, 7th November, pp 4-9.

regard to the topic of the urban context we will refer to Chinese examples because its exemplarily role for many other large countries. With regard to the second topic we will refer to a specific debate of the world Bank, the UNDP and the IMF which may contribute to rationale of this paper.

## 4.1 Outdoor air pollution and failing infrastructure

An interesting manifestation of the current problems in megacities refers to the decision by the Chinese government on behalf of the APEC-meeting in Beijing in the first week of November 2014. The amount of highway auto cars in that week was reduced by 50% and steel factories in its surroundings had to stop functioning to guarantee a blue sky for the high level international guests. However, in normal circumstances heavy environmental pollution in Beijing has become a disaster for its residents.[109] The 2011 UNEP Report 'Towards a Green Economy' dedicates  a chapter to the role of cities in a transition to a 'green economy' preventing such circumstances in Beijing, but gives relatively few handles on how cities can/ should be enabled to make such a transition in developing and emerging countries.[110] This becomes more important because recent studies demonstrate that premature mortality can be linked to a wide range of causes including pollutions such an ozone and fine particulate matter on human health.  Jos Lelieveld et al find that outdoor air pollution, mostly by particulate matter (from auto cars etc) leads to around three million premature death per year worldwide. The Aldo Della Rocca Foundation also refers to studies concluding this.[111] Emissions from residential energy use such as heating and cooking, prevalent in India and China, have the largest effect on premature mortality worldwide. In USA these concern emissions from traffic and power generation and Russian and East Asia agriculture emission.[112]

In a world where the majority is urbanized, the global economy's production and consumption systems are dependent on the urban infrastructures of cities to conduct the most important resource flows (energy, water, sanitation, solid waste, mobility, food). How these urban infrastructures are configured determines how the resources are deployed, used and re-used. However, the urban infrastructures in many (mainly developing country) cities are inadequate or (as is the case in many developed country cities) inappropriately configured

---

[109] *Daily China* (2014), 7th November, page-4.

[110] UNEP (2011) *Towards a Green Economy – Pathways to Sustainable Development and Poverty Eradication* (New York: UNEP).

[111] C. Beguinot et al, see note-24.

[112] J. Lelieveld, J.S. Evans, M. Fnais, D. Giannadaki and A. Pozzer (2015), A.Nature 525, pp. 367-371. See also: http://www.nature.com/nature/journal/v525/n7569/full/525330a.html

from a sustainable resource use perspective. With this in mind the message of the UN-Habitat is that "*to ensure that green economy initiatives achieve the goal of shared prosperity with societal resilience against future shocks and surprises, a clear and shared definition of what it means for sustainable urban development will be required before the Earth Summit 2012.*"[113] Or we need a clear definition of sustainable (urban) development.

## *4.2    Attention for socio-political and socio-cultural dimension*

Cities are complex entities, with population densities that are often – especially in megacities and hypercities – well over 2,000 per square kilometre. As argued by a Dutch 'think tank', apart from the economic and environmental aspects, which in fact traditionally receives all attention, the socio-political and socio-cultural dimensions of cities will need to be drawn into the discussion explicitly. A transition to sustainable development should profoundly alter the way in which people live in cities. Governance, the availability of shared (public) goods or 'commons', existing inequalities (for example in standard of living) and inequity, participation, education, and the sustainability-awareness of city dwellers, just to name a few topics, will need to be put into the equation. Indeed, many cities in Europe are preparing policies for sustainable urban development. This demands a consistent conceptual and methodological framework. However, many of these developments take place at small scale in urban regeneration projects, in particular neighbourhoods (eco-quarters or eco-towns) or in the development of new neighbourhoods and cities. In each case one particular element of sustainable urban development (e.g. housing, transport infrastructure, ecology, social cohesion) is usually dominant. [114]

According a European-wide study, consensus about a conceptual framework to steer processes in all four main dimensions, also of the urban context is totally lacking. The different elements of sustainable development are often ill-balanced or integrated for a whole city or an important district, suburb, quarter of a city. Concluded is that often local professionals of urban development feel a trade-off between sustainable infrastructures and achieving more sustainable societies. Tension between the two may arise when infrastructural projects are designed to meet certain environmental protection or resource efficiency criteria without, however, sufficiently taking into account societal criteria, both in

---

[113] UN Habitat, see note-23.

[114] J. van Renswoude et al, see note-7.

terms of how these projects may affect the lives of individuals, groups and communities, and in terms of the needs and behaviour of the people using related services.[115]

## 4.3     Fragmentation in urban research

An important European conference on sustainability concluded that urban research and policy are still highly sectoral and not adapted to handle the complexity with regard to sustainable (urban) development, and that we need "*more creative management of the cultural heritage of cities [and ] a better engagement of citizens in local governance".*[116] For the European Union it is highly important that urban processes in European metropoles and cities can be compared with processes in cities in other continents. Therefore an unequivocal scientific and policy language is needed. The EU argued that new methods are needed to analyse the complex dynamics of societal change within our societies and notably the cities.[117]    China, for example, has to cope with far more severe problems though. According to UNDP-China, recently 260 million people changed from living in rural areas to urban areas. In the next 20 years about 310 million people are expected to join the urban population. That is more or less the whole population of the USA.[118] At this moment, millions of migrants in China *"don't have residence rights, which limits their families' access to social services, education and even the right to own housing in some cases (…) most local governments are under heavy fiscal pressure when it comes to providing public services".*[119] More recently the influx of immigrants from Syria and Africa to the European Union is challenging the Union in an unexpected way. It is stimulating right-wing movements which will prevent their full acceptance; a political wing which is not open for questions about sustainability either. With regard to the socio-political dimension this will become a real factor in the debate on sustainability.

Besides this increasing problem, from a Western perspective therefore, cities in China have exploded into huge metropoles in 'no time' because the waves of migrants from West to East. The accent was and will remain to first of all build enough houses to manage these waves.

---

[115] K. van Dijken,  M. Grisel  and W.Hafkamp  (2008), '*Levers of Public Action for the Development of sustainable Cities: A European Study on Request by the French Government',* (The Hague: NICIS).

[116] N. Lucas and D. Rosetti di Valdalbero (2009), '*People, the Economy and Our Planet: Sustainable Development Insights from Socio-Economic Sciences and Humanities'* (Brussels: DG for Research of the European commission).

[117] EC (European Commission)  (2007), '*Opportunities, Access and Solidarity: Towards a New Social Vision for the 21th Century Europe'*, (Brussels: Commission of the European communities: COM726 final)

[118] UNDP-China, see note-38, p. 101.

[119] L. Lan (2014), Test sites identified for urbanization Program'*, China Daily*, 8/9 November.

But the recent tragedy in Tianjin, an important industrial port in north-eastern side of China, refers to serious problems in labour and the overall industrial relations with tragic consequences for the urban context and also environmental issues. On the night of August 12 in 2015 a series of huge blasts at a hazardous-materials warehouse killed more than 100 people, reduced the surrounding area to ruins, displacing thousands of local residents. Xiao Shu also referred to previous chemical explosions around the country and to other accidents: "*The China Labor bulletin has recorded more than 300 industrial accidents in the last seven months (…) China has industrial safety regulations but toothless enforcement. Local governments, filled with unscrupulous profit-seekers, act like ruthless corporations, aiming to maximize gain with reckless disregard for environmental safety*".[120] For the ongoing chemical explosion, threatening urban areas and climate systems we will refer to studies by H. Guizhen et al.[121] The UNDP-China Report (see note-76) refers to the Chinese economist Wu Jinglian, who identified four reasons for the inefficiency of Chinese urbanisation,[122] namely: "*a flawed land rights system, a misconceived government role in urbanisation, a hierarchy that rewards city size above all other criteria, and a general misconception that larger cities are always better*".[123] Rightly, the Report notices that the uniqueness of China's urban transformation simply means that there are no obvious lessons or best practices to adopt. Notwithstanding this "*unless bold, creative and decisive action is promptly taken, cities may turn into major obstacles to China's development aspirations, instead of acting as the engines for progress*".[124] The referrals to China makes sense because this huge country is one of the most important players with regard to environmental issues and, at the same time, China may be appreciated as representative for the other BRIC-countries. The way its government and population cope with environmental issues may influence all other BRIC-countries as well.

### 4.4    The China-Europe exploration of the role of citizens

With the above mentioned issues in mind it is interesting to notice that also from provincial levels the attention for the role of citizens in environmental protection is increasing in China. The EU-China Environmental Governance Programme (called the **EGP-project**) started in 2012 to analyse the outcomes of the applied model in Jiaxing with which to increase "public

---

[120] X. Shu (2015), 'Chinas Industrial Calamities', *International New York Times*, August 22-23: 7.

[121] H. Guizhen, L. Zhang, L. Yonglong and A.P. Mol (2011), 'Managing major chemical accidents in China: Towards effective Risk information', *Journal of Hazardous Materials*, 187, pp. 171-181, p. 180

[122] W. Jinglian (2013), '*The growing Pains of Urbanisation*', (http://english.caixin.com/2013-01-22/10048502 j.html, last accessed June 2013)

[123] UNDP China, see note-76, p. 61.

[124] UNDP China, see note-76, p. 100.

participation of environmental governance" in the Zhejiang Province as well as to formulate policy advice concerning the implementation of this model in eight other cities/metropoles of the Zhejiang Province.[125] In terms of a recent EGP-document: *"democratic consultation is included in the governance mechanism. In the traditional environmental management model, management power is centred on the government, which is highly centralized and reacts slowly with higher running costs. Under the Jiaxing Model, social organisations and the public start to share management power with the government, shouldering the responsibility of management and cooperating with the government.*[126] As argued by Sangli during one of the seminars of the EGP-project: *"public participating is the driving force and support of the ecological system. Without public participation the whole ecological system cannot operate".* [127] The International Association on Social Quality (IASQ) was invited to participate in its evaluation given its work recently carried out how to enhance the role of residents in the urban context for contributing to overall sustainability. With this in mind, this model is highly interesting because (1) it concerns an aspect of a much broader context, and (2) it aims to be implemented in eight other Chinese cities of the Zhejiang Province.[128]  In other words, there is a strong awareness that  not only the socio-political dimensions  but especially the socio-cultural dimension is a condition sine qua non for the development toward sustainability and for combatting climate change in China.

As an aspect of the EGP-project Neill Munro analysed the significance of the Jiaxing model in the context of the current role of NGOs in China. He concludes that China's environmental NGOs are not able to provide the channel for mass participation in environmental governance which China's citizen say they want: *"Combined with reforms aimed at encouraging the development of mechanisms for popular participation and fostering the development of a vigorous third sector, would not only do a great deal to ameliorate an unfolding environmental crisis, but also in the long term fill in some of the gaps in China's social cohesion".*[129]

Seen from a theoretical perspective, Munro refers to different concepts which demand for an explication in order to analyse and to understand the outcomes of the Jiaxing model: namely

---

[125] CEECZJ, see note-9.

[126] EGP-project (2014)*, 'Policy Suggestion Report',* (Hangzhou: CEECZJ), p.7

[127] EGP-project (2013),  'Newsletter n.2, serial nr.3, (Hangzhou: CEECZJ), p.2

[128] L.J.G. van der Maesen (2015), '*The Position of citizens with regard to environmental protection: a contribution to a Chinese and European comparison based on reflections on the applied model by the Chinese city Jiaxing',* (Amsterdam/The Hague: IASQ, Working Paper Series nr. 14, www.socialquality.org). Further: K. Wang (2014),  *'The Jiaxing model of environmental protection by its citizens'* (Amsterdam/the Hague: IASQ).

[129] N. Munro (2013), 'The Socio-political Bases of Willingness to join Environmental NGO's in china. A Study in Social Cohesion', International Journal of Social quality, Vol. 3 (1), pp. 57-82,  p. 72

government, governance, social capital, social cohesion, participation. His empirical conclusions can be a help for a consistent and coherent application. According to Munro, the appropriateness of different forms of participation is effectiveness.[130] But compared to quantitative aspects of simple objectives, 'effectiveness' in the context of complex societal relationships is or does not have an evidence sui generis. This refers to the tension between aspects of the socio-political and the socio-cultural dimensions. In the dominant discourse on sustainability and climate change exactly related issues are not taken on board. This is not only the case in China, it is a global question or problem and stimulated by applying the idea of the 'social dimension' as a black-box, preventing analyses of interrelationships of processes in and between the four main dimensions.

This conclusion is rather remarkable because also the change of focus of Friends of the Earth International (FoEI) from sustainable development processes on sustainable societies and their cities already took place in the 2000s. According the FoEI, sustainability is not just about national resources, production or technology but about people (mostly living in the urban context) and a just society in harmony with nature.[131]

## 5. The current economic paradigm as driver of climate change

As will be explicitly discussed in section-7, this paper does not distinguish between three dimensions like the UN-Report[132] but between four dimensions, namely: the socio-economic, the socio-political, the socio-cultural and the socio-environmental dimensions. Anticipating the sixth section it makes sense to refer here to the plea from the side of the Republic of Ecuador for a change of paradigm, to go beyond the restricted interpretation of development to good living'. The hegemonic ideas of progress and development have generated a monoculture that make the historic experience of the diverse peoples that compose our societies invisible. In other words there is one dominant model that all societies should follow. Whatever falls outside these ideas is considered savage, primitive, obsolete, pre-modern: *"in general terms, however, the prevailing concept of development has remained immune to questioning. It has ' resisted feminist, environmental and cultural attacks and criticisms. Its detractors have been unable to institutionalize their alternative proposals. This is the reason, today - more than*

---

[130] N. Munro (2014), 'letter to the coordinators of the EGP-project about the analysis of the Jiaxing model', (Glasgow: University of Glasgow), 12 June.

[131] L. van der Maesen (2010), '*Sustainability: a complex concept*', (Utrecht: Utrecht University, Dep. Physical Geography). See further: D. Yencken and D.Wilkinson (2000), *'Resetting the Compass: Australia's Journey towards Sustainability'*, (Collingwood: CSIRO Publishers).

[132] UN-Report, see note…..

*ever - the South [of the Americas] needs to put forward proposes which re-think social [or political] , cultural, economic and environmental relations.*"[133]

## 5.1    The current debate on the banking sector and neo-classical economics

The disconnection between analyses and actions with regard to the economic dimension and both other dimensions – the socio-political and socio-cultural – may be explained with the current debate about the role of the European continental banking sector. According to the president of the European Banking Federation, the policy is to organise the European capital markets around small and medium-sized domestic or regional banks. However, in order to play a powerful and more independent role on the global stage by the European level strong investment banks with headquarters in Europe are a conditio sine qua non. The reason is that otherwise a handful of robust US universal banks are gaining market share abroad while strengthening their position at home: "*this formidable competition demands a response. But Europe is considering several counterproductive steps (….) Does Europe want its own investment banks to be capable of operating efficiently in capital markets? (….) or are European states happy to look outside Europe for investment banks which can finance their debt?*"[134]

From a strict financial-economic perspective it would not be wise under the current circumstances for Europe, for South America, for Africa, for Asian countries to be dependent on five 'universal USA banks'. For the development toward overall sustainability strong universal operating banks with their very narrow logic of profit-making - disconnected from the logic of other dimensions - will lead to catastrophic environmental outcomes.  And exactly these tendencies in the USA and the need for an adequate answer in other continents concerns an issue that  does not play a real role in the current debate on climate change. Without a change some universal banks determine what should happen on all far corners of the world. The current economic-technocratic approach of climate change based on neo-classical economics is denying this crucial question.

Also with the environmental based limits in mind, Ian Gough criticises some assumptions of neo-classical economics. Three of them are of interest here. First that market institutions encourage the very self-interested behaviour assumed by welfare economic theory, which

---

[133] SENPLADES (2010), '*National Plan for Good Living 2009-2013: Building a Plurinational and Intercultural State*' , (Quito/Ecuador: www.senplades.gov.ec) , p.17

[134] F. Oudéa (2015), 'Europe needs homegrown bulge bracket banks' , *Financial Times*, 12 October, p.7.

means that "*preferences are thus endogenous to such institutions, not exogenous and peculiar to individuals.*" [135] Second that the model of the homo economics has been subject to withering criticism from all directions. That every individual is actuated only by self-interest is simply wrong. This critic "*forms the basis for anthropological and social studies of cultural values and their transmission, but are destructive for orthodox economic theory*".[136] This means that for underpinning and defending this economic theory the actors have to disconnect this from the reality of human circumstances and the surroundings of their daily circumstances. This refers to the neo-classical theory of consumption, that there are no necessary limits to preferences and desires: "*individuals can become satiated through the consumption of individual goods via the mechanism of diminishing marginal utility, but there are no necessary limits to satisfaction through consuming more different goods and services (….) Specifying welfare entirely in terms of preferences flattens moral distinction between the seriousness that different welfare demands make on both individual and social choices'.*"[137] In essence these three issues regard the inconsistency of for example the World Bank and the United Nations Development Program in debating overall sustainability without debating the neo-classical paradigm.

### *5.2    Two dominant perceptions related with neo-classical economic paradigm*

We may distinguish two dominant perceptions related with the existing and powerful neo-classical economic paradigm in the world today, which influence the discourse on 'sustainable development' and related practices.[138] According to Des Gasper, the one dominant perception is, that: "*well-being consists in maximizing monetized flows, which reflects the activist stance that the good life is the packed, busy, strenuous life – the exertion to the full of one's human forces, in unceasing aspiration, acquisition and contestation. At the moment that we watch the near disappearance of the Northern polar cap far faster than previously feared, it becomes essential for work on social quality and human development [human security] to look not only at environmental devastation and dangers but at the deeper forces driving it.* "[139]

---

[135] I. Gough (2015), 'climate change and sustainable welfare: the centrality of human needs', *Cambridge Journal of Economics*, 1 of 24, 9doi:10.1093/cje/bev039), p.3.

[136] I. Gough, see note-130, p. 3.

[137] I. Gough, see note-130, p. 4.

[138] L.J.G. van der Maesen et al, see note-10. This subsection  is based on Chapter-11: L.J.G. van der Maesen and A. C. Walker, 'Conclusion: Social quality and Sustainability'. Pp.250-275..

[139] D. Gasper (2009), '*The Human and the Social: A comparison of the Discourses of Human Development, Human Security and Social Quality*' , (The Hague: ISS).p. 12.

The second is articulated by Alan Walker.[140] Since the UN Brundtland Commission twenty years ago sustainability has been a term associated with development. This Commission recognized three aspects or dimensions of which two were (and are) dominant, the economic and the environmental/ecological as well as the trade-off between them.[141] As a consequence it could not prevent a one-sided economistic interpretation of sustainability, reflecting the dominant neo-liberal paradigm, accentuating economic growth as the condition for human existence. This must be attributed, at least to some extent, to the influence of the IGO's in the economic and financial fields, the institutions of globalism: the OECD, World Bank, IMF and WTO.[142] As with globalisation itself, these global institutions have played important roles in framing the discourse on sustainability[143] as well as in the application of one-dimensional policy prescriptions for example in the Eurasian transition countries and Latin America.[144] These two critical dimensions of the policy work of the IGO's are founded within the same economic paradigm: the neo-liberal Transatlantic Consensus on globalisation. According to De Gaay Fortman, this underpins the dominance of economic growth, expressed in terms of GDP per capita, which demands a constant increase in aggregate production.[145]

### 5.3 the interrelationship of both tendencies

In practice the second tendency paves the way for the first one. Gasper implicitly explains the symbiosis of both tendencies with the help of his analysis of Stiglitz's book on globalization.[146] According to Gasper, Stiglitz offers a virtuoso exercise in progressive technocracy which argues for a re-engineering of the market system to get the incentives right. Yet the concept of 'incentives' remains untheorized and, implicitly, they are largely monetary.[147] In order to address the most important global challenges what is required is an evolution of perceptions, motivations and attitudes and not merely a technical exercise of 'getting incentives right'. This also implies a new theoretical, political and ethical approach to

---

[140]  A. Walker (2011)'Social Quality and Welfare System Sustainability', *International Journal of Social Quality*, 1 (1); pp. 5-19

[141]  UN-Commission, 1987 etc. ……….

[142] Deacon et al (1997)….

[143] Stone (2004)…..

[144] World Bank (1994)…..

[145] De Gaay  Fortman, (2009)

[146] Stiglitz (2007)….

[147] D. Gasper (2010a)….

the question of 'public goods'. In the neoclassical economic formulation the conceptualisation of public goods proceeds in terms of what the goods are not, rather than what they are. This is the same case with the concept of NGOs which are defined only negatively.[148] That is the reason the World Bank argues that *'there is no reason to think that a low-carbon path must necessarily slow economic growth*".[149]

Stern's book on a safer planet [150] goes beyond the well-known 'Stern Review'[151] and states that climate change is deemed the biggest market failure ever. But, according to Gasper, cooperation around (global) public goods for combating this failure cannot be conducted only in 'economic man terms'.[152] First, people are not 'economic men', unflagging and unfailing calculators of narrow self-interest. Second, people are both unhabituated and often unable to calculate indirect effects and thus fail to move to the stage of enlightened self-interest. Therefore he is strongly oriented on the question of how to motivate action.[153] Gasper concludes however: *"public action around public goods requires an appropriate feeling of what is the public including some sympathetic feeling for 'distant others' and future generations (….) Stern fails to investigate the images of identity and 'interests' that structure and constrain behavior. He offers a policy blueprint rather than serious reflection on motivation values; and words with insufficiently examined assumptions about the identity of the 'We' (Treasury and World Bank economists: well-intentioned Establishment advisers) who supposedly can, in the title of his book, 'Save the World'."[154]*

## 5.4 About economic-growth, the social and the environmental (ecological)

Following previous arguments, neither Stiglitz nor Stern indicate how to integrate the economic and environmental aspects of sustainability because they abstract from the socio-political understanding of public goods and a cultural understanding of values, conventions and attitudes.[155] This abstraction is again demonstrated in the report by the Commission Social Progress (Stiglitz, Sen, Fitoussi) – instated by the French Government. The reason is

---

[148] D. Gasper, see note-92, p. 5.

[149] World Bank (2009), 'World Development Report 2010: Development and climate change' (Washington DC: World Bank), p. 7.

[150] Stern (2010)….

[151] Stern (2007)….

[152] D. Gasper, see note-80.

[153] D. Gasper, see note-92, p. 124.

[154] D. Gasper, see note-92, p. 11.

[155] D. Gasper, see note…

that at the end of the day they applied a heterogenic approach.[156] Therefore they remained embedded in the dominant economic paradigm with their elaboration of the idea of 'social progress'. This is expressed with their referral to the black box of 'quality of life' as a metaphor of 'social' as the mediator between the economic and environmental dimensions of sustainability.[157] In this way they uncritically followed all scholars who accept the 'social dimension' as a pillar of sustainability the essence of the UN-Report about sustainability.[158] According to Herrmann their report shows its eclectic approach, namely the justification for a separation of economic, social life (or quality of life) and ecological issues: "*In this context 'social life' remains in a bin liner of all aspects of society outside of the economic and ecological realms that are artificially separated. On the other hand, the implicit based notion of 'the social' is applied very much in an individualistic sense.*" [159]

This embeddedness in neo-classical economic thinking prevents a clear conceptualisation of sustainability because this type of thinking is a priory disconnected from analytical instruments to understand the three other dimensions. Possibly, this may explain why not only Stiglitz and Stern but also Giddens [160] are committed to endlessly ongoing economic growth as potentially welfare-given and as condition for sustainability. The word growth seems to function for also Friedman as a talisman of the good.[161] According to Gasper, "*he keeps repeating it. We must keep innovating better ways to drive growth with fewer and fewer electrons (p. 232) and find a way to create wealth - because everyone wants to live better – without creating toxic assets in the financial world or the natural word that [will] overwhelm us (p.9). We must have more: we want it, and, by assumption, economic growth is the only way for even rich countries to live better. That more is always wanted suggests though the emptiness of much of what is already possessed*". [162] According to Gasper, often and see also recently the Obama administration, economic growth is presented as an essential part of modern identity: the source of hope, meaning, and self-profiling, at the level of individuals

---

[156] In fact they referred to the Paretonian ontological orientation as well a Weberian ontological orientation. This produces an inconsistent methodological framework, see: L.J.G. van der Maesen et al, see note…Chapter-111. This chapter is dedicated to the differences between four oncological ground-patterns.

[157] J. Stiglitz, A. Sen and J-P Fitoussi (2009), '*The measurement of Economic Performance and Social Progress Revisited. Reflections and Overview* (16 September: http://www.stiglitz-sen-fitoussi.fr/documents/overview-eng-pdf).

[158] UN-Report, see note-107.

[159] P. Herrmann (2012),'Economic Performance, Social Progress and Social quality[a comment on the Stiglitz et al Report], International Journal of social quality, vol. 2 (1), pp. 41-56, p.49. ….International Journal of Social Quality…..

[160] Giddens (2009)….

[161] T. Friedman (2009), '*Hot, Flat and Crowded – Release 2.0*', (New York: Picador).

[162] D. Gasper (2012), 'Climate change – the Need for a Human Rights Agenda within a Framework of Shared Human Security', 79 Social Research: an International Quarterly of the Social Sciences 983, 1014

and especially of nations. It becomes the token of national strength, virility and vitality, 'the symbol of life itself'.[163]

## 5.5 Bank of England ideas

Recently the President of the Bank of England gave a speech at Lloyd's of London about climate change and financial stability. He called this 'Breaking the tragedy of the horizon – climate change and financial stability'. How to manage emerging, mega risks caused by climate change? We will refer extensively to this speech because it delivers an underpinning of the critic on neo-classical forms of reasoning. In his words: "*alongside major technological, demographic and political shifts, our very world is changing. Shifts in our climate bring potentially profound implications for insurers, financial stability and the economy (…) evidence is mounting of man's role in climate change. Human drivers are judged extremely likely to have been the dominant cause of global warming since the mid-20th centre (….) the challenges currently posed by climate change pale in significance compared with what might come. The far-sighted amongst you are anticipating broader global impacts on property, migration and political stability, as well as food and water security (….) we don't need an army of actuaries to tell us that the catastrophic impacts of climate change will be felt beyond the traditional horizons of most actors – imposing a cost on future generations that the current generation has no direct incentive to fix (….) As risks are a function of cumulative emissions, earlier action will mean less costly adjustment. The desirability or restricting climate change to 2 degrees above pre-industrial levels leads to the notion of a carbon 'budget' and assessment of the amount of emissions the world can 'afford'."* [164]

Of interest are not so much his proposals how to stimulate economic actors to decrease carbon emissions - at the end of the day he proposes to act more rational with the help of market instruments - but being quiet about the political supported dominant economic approach at least in the Western hemisphere. And this is quite logical because his supposition, that "*more properly our role can be in developing the frameworks that help the market itself to adjust efficiently. Any efficient market reaction to climate change risks as well as the technologies and policies to address them must be founded on transparency of information. A 'market' in transition to a 2 degree world can be built*". [165]

---

[163] D. Gasper, see note-92, p.16.

[164] M. Carney 92015), '*Breaking the tragedy of the horizon – climate change and financial stability: Speech given at Lloyd's of London'*, (http://www.bankofengland,co.uk/publications/pages/speeches/2015/844, p. 1-2.

[165] M. Carny, see note-111, p. 7

To change the production systems of multinationals is of course highly important. The recent strategies by the Obama administration to stimulate American ones to change these systems in the eve of the Paris conference is inspiring. The administration is also using significant new regulations, including the newly released Clean Power Plan: *"by showing that many major businesses are making large reductions in carbon emissions voluntarily while still being profitable, the Obama administration hopes to prove that its new rules will lead to greater economic growth not less"*.[166] The question is whether this economic-technocratic approach is sufficient to cope with essential challenges with regard to overall sustainability. And what are the other costs of the proposed reduction of carbon emissions. Finally, are these policies restricting or strengthening the hegemonic position of international economic players referred to in the Ecuador National Development Plan?

## 5. The World Social Science Report 2013: arguments for a change

The ambition of this section is to deepen the question why to start an orchestration of cross-interdisciplinary approaches for supporting politics toward the development of overall sustainability. In the very extensive 'World Social Science Report 2013' - published by the International Social Science Council (ISSC) - we can find a number of mostly implicit and sometimes explicit arguments for this ambition.[167] With this ambition in mind we will also refer to the concept of resilience as elaborated further by also the Stockholm Resilience Centre.[168] As we will argue, missing is in the ISCC's Report 2013 a common point of Archimedes in order to connect the outcomes of the manifold of published studies in a coherent and consistent way. Notwithstanding this, as contributor to the Report, the Director General of the UNESCO implicitly pleas to look for going beyond the existing fragmentation of empirical acknowledged phenomena because: *"just as divided knowledge undermines the solidarity of humanity, so current environmental challenges – if inadequately understood and inappropriately managed – can impede achievement of the internationally agreed development goals.*[169] This implies the proposed 'point of Archimedes'. This target may differ from a recommendation published in the ISSC's Report by Karen O'Brien. She pleas to

---

[166] G. Harris (2015), 'Obama emphasizes corporate commitment to cut emissions', *International New York Times*, 21 October, p. 21.

[167] ISSC et al, see note-8.

[168] J. Rockström, W. Steffen, K. Noone cs *(2009), 'A safe operating space for humanity', *Nature*, 461, pp. 472-475.

[169] Ï. Bokova (2013), 'Preface of World, Social Science Report', see ICCS et al, note-8, pp. 3-7, p.3

prioritise the dedication to actions for coping with climate change instead of issues.[170] But an 'Antique Wisdom' is that effective actions as need an unequivocal conceptualization for understanding of the problematique in question as point of departure. A theoretical conceptualization of sustainability and its related issues is a condition sine qua non for its adequate and effective development. This is the central issue of section seven.

## *6.1    Some referrals to the socio-economic dimension*

This Report presents a highly systematic overview of studies about the socio-environmental dimension from a social sciences perspective as well as the nature of a manifold of social sciences research regarding this dimension in all continents. Explained is e.g. that the USA is the largest producer of social sciences research on global environmental issues but is at the same time a dramatic case of unrealized opportunities due to lack of funds.[171] In Russia the attention from the side of social scientists is very poor. According to Oleg Yanitsky et al, "*most Russians are intent on earning a living and raising living standards. They are not interested in global warming and its consequences*". The main work comes from environmental scientists.[172]   In the case of China during the past decade an explosion of research was published on how to address climate change. But the outcomes are not accessible for non-Chinese speaking countries. Unknown remains of the majority of these studies are made functional for socio-economic objectives instead of socio-environmental objectives. It would be worthwhile to translate the outcomes.[173] According Francoise Caillods, in a general sense "*The regional divide in social sciences production on global environmental change is at least as big as for the social sciences overall.*"[174]

Supposed is that the Report applies an interpretation of 'social sciences' which excludes economics. This should even increase the division. Moreover, the Report does not explicate the applied ontological or epistemological points of departure applied in its studies.[175] But especially the dominant paradigm in the socio-economic dimension – resulting to so-called

---

[170] K. O'Brien (2014), 'What's the problem? Putting global environmental change into perspective', see: ISSC et al, note-8, pp. 71-79, p. 77.

[171] T.J. Wilbanks, T. Dietz, R.H. Moss and P.C. Stern (2013), 'The social sciences and global environmental change in the United States', see: ISSC, note-8, pp.133-141, p.134

[172] O. Yanitsky, B. Porfiriev and A. Tishkov (2013), The state of social sciences and global environmental change in Russia', in: see ISSC, note-8, pp. 168-177, p.170

[173] Ying Chen and L. Xie 92014), 'Social science research on climate change in China', see : ISSC, note-8, pp. 207-215.

[174] F. Caillods  (2013), 'Regional divides in global environmental change research capacity', in: see ISSC, note-8, pp. 125-132, p. 127.

[175] In order to discuss  the often formulated plea for a paradigm change – especially with regard to dominant economic theory and its policy application the  conditions for such a plea are seldom  on the agenda. See the third study about social quality, note-3 and 11.

'turbo-capitalism' - may cause the most severe impact on environmental dimensions.[176] According to the European high level conference of the EC on sustainability, "*The consequent economic distortions and excessive use of environmental assets are devastating for global sustainability. The availability of knowledge at prices based on individual 'willingness to pay' would increase welfare compared to present reality where consumers face intellectual monopoly prices in pharmaceuticals, educational materials, financial instruments, agricultural inputs, computer software and even entertainment. Such radical change would involve new forms of governance for knowledge and reward for innovators. Socio-economic sciences and humanities research would be critical to the search for these new arrangements*".[177] Explicitly the participants of the conference argue that the cultural dimension – which influences the cognitive aspects of human people, their conventions, values and attitudes -  is essential for sustainable development: *'Long-term energy scenarios show that current life styles in industrialized countries are not sustainable on a worldwide scale (….) To be sustainable, life styles will have to adapt to low energy use (…) Long-term behavioral changes to adapt to low energy use are conditioned by several important social factors (…) Changes tend to be slow and must start at school. In most industrialized countries population is aging and retired people life styles will dominate; this trend will extend in due course to developing countries'.*[178]

## 6.2    Some referrals to the socio-political dimensions

Of interest is the remark by the President of the ISSC that "*a challenge to social scientists [including economists/LJG] is to help redefine prosperity, focusing more on the qualitative aspects of human development, such as the provision of better education, learning how to promote health, and learning regenerative approaches to the use of resources (….) social scientists must first ask why human behaviours which add to greenhouse gas emissions are so resistant to change.*"[179] Possibly this suggestion should be 'de-individualized', as occurs elsewhere in the Report. Suzanne Moser et all notice, that climate change might be framed as a symptom of a dysfunctional society: "*a global environmental change as the unprecedented rise of a single species affecting the entire planet,*"[180] More stronger, Alberto Martinelli argues that -   thanks to the extension of the liberal democratic ideas   - most

---

[176] I. Gough, see note---…., A. Coote, see note-… and see: …(second social quality book)……..

[177] EC's conference, see note-2, p.10.

[178] EC's conference, see note-2, p. 17.

[179] P. Shisana (2013), preface: a lighter carbon footprint, a greener world', in : see ISSC, note-8, p. 9/10.

[180] S. Moser, H. Hackmann and F. Gaillods (2014), see: ISSC, note-8, pp. 46-65, p. 50.

international conventions and agreements do not mention to whom, and how, powerful global actors should be held accountable. This is not stimulated by non-democratic states either. We need forms of "*radical democracy [which] argues that alternative mechanisms of economic, social and political organisation should be created worldwide to be based on principles of self-government, equal rights, the common good and harmony with environment*".[181] According this way of reasoning, not individual attitudes but societal based mechanisms explain the résistance, e.g. the pressure of the big financial players on the global market. [182] They operate in the so-called free market system in the sense of Adam Smith which is to-day a complete anachronism. This provokes the idea by Antonio Ioris, that the climate change issue is not only an economic-ecological question but especially a question of human rights and social justice. He explains, that from the side of critical social movements the ambition is to disentangle the complexities of international law and governance, to find ways to turn economic, legal and cultural norms toward climate justice: "*The global movement for climate justice has fiercely criticised the ineffectiveness of top-down responses, as well as the opportunities for capital accumulation that the environmental crises has created in the form of 'green capitalism'.*" [183]

In the same vain, Diana Sanchez Betancourt and Dominik Reusser argue, that the Rio+20 conference on sustainability in June 2012 with its accent on technology "*as the alleged pre-eminent solution and seriously interrogate the limitation of predominant development paths. The challenges posed by current forms of unrestricted capitalism were not addressed.*"[184] Diana Feliciano and Frans Berkhout implicitly explain this state of the art with their conclusion, that "*disagreement is fed by the complexity of the causal mechanisms involved and by a lack of consensus about the scientific evidence base for many of these problems and their solutions*".[185] Furthermore they conclude that top down based politics fail because the lack of knowledge of realities on the ground. The absence of the most essential topic of the urban context may explain the missed chances of Rio+20 conference and the lack of knowledge of realities. They argue that the: "*increasing regional and global character of many environmental problems intensifies the need for political and economic coordination to many*

[181] A, Martinelli (2013), 'Global governance and sustainable development', in: see ISSC, note-8, pp. 467-472, p. 468.

[182] A. Martinelli, see note-156, p. 495.

[183] A.R. Ioris (2014), ' The politics of climate change and grassroots demands', see: ISSC, note-8, pp.472-474, p. 476.

[184] D. Sanchez Betancourt and D. Reusser (2014), ' Transition to sustainable societies – was Rio +20 a missed opportunity?', see: ISSC, note-8, pp. 439-441, p. 439.

[185] D. Feliciano and F. Berkhout (2014), 'Dealing with 'wickled' environmental problems', see: ISSC, note-8. Pp. 415-420, p. 416.

*global changes.*"[186] The referrals to the ISSC's Report not only reveal problems in the socio-economic dimension but also in the socio-political dimension.

## 6.3     Some referrals to the socio-cultural dimension

The negation in the dominant (economic-ecological oriented) discourse on the role of the socio-cultural dimension – the possibilities and roles of communities and the application of communication strategies on grassroots-level – may partly explain these problems, referred to in the Report. This is underpinned by Renato Fontana and Martina Ferrucci. In their study they conclude that "good communication introduces elements of growth toward a critical consciousness that will enable us to move away from failures more severe than what the obsession for industrial profit has already done to the planet. It is clear that the public needs a change in the mechanisms that underlie the media industry."[187]  With these conclusions in mind the introductory remarks by Heide Hackmann and Suzanne Moser of the ISSC's Report is worthwhile to reconsider. The Report may be appreciated as an instrument to mobilise the social science community in order to become engaged, and ultimately applying their resulting knowledge: "*social scientists themselves are the first audience. So are colleagues in the natural, engineering, medical and human sciences concerned with global environmental change and sustainability (…) the Report invites its readers to consider new or unusual perspectives, gather new insights and understandings, and perhaps walk away thinking differently*". [188] To look for that is the objective of the following subsections.

## 6.4     The ISSC's study about resilience, planetary and social boundaries

A very important study for this paper published in the ISSC's Report is from Melissa Leach, Kate Raworth and Johan Rockström. In 2009 Johan Rockström and colleagues – collaborating in the Stockholm Resilience Centre – launched an article on planetary boundaries, the heart of the matter of the environmental dimension. This article  reflects the dynamic preconditions of the biosphere for a prosperous development of the human societies.[189] The concept of **planetary boundaries** has reached international  recognition.

---

[186] D. Feliciano et al, see note-159, p. 417.

[187] R. Fontana and M. Ferrucci (2014), ; Environmental Sustainability as Indicator of Social quality: The New Opportunities Offered by Communication', *International Journal of Social Quality*, 4 (1), pp. 41-57, p. 54.

[188] H. Hackmann and S. Moser (2014), 'Global environmental change: changes everything: Key messages", see: ISSC, note-9, pp. 33-46, p.43.

[189] J. Rockström et al, see note-146.

This is connected with the existing concept of 'resilience', originally introduced by Holling.[190] In the article by Brian Walker and colleagues **resilience** is defined as "*the capacity of a system to absorb disturbance and reorganize while undergoing change so as still retain essentially the same function, structure, identity and feedbacks (…) The focus is on dynamics of the system when it is disturbed far from its modal state*".[191] According to Rockström et al., the planetary boundaries rest upon nine critical Earth-system processes and their associated thresholds: (1) climate change, (2) rate of biodiversity loss (terrestrial and marine), (3) interference with the nitrogen and phosphorus cycles (usually due to excessive pesticide use and industrial agricultural practices); (4) stratospheric ozone deletion; (5) ocean acidification; (6) global freshwater use; (7) change in land use; (8) chemical pollution and (9) atmospheric aerosol loading. Based on available data with regard to control variables they conclude that 3 (out of 9 so far identified) interlinked planetary boundaries have already been overstepped, i.e., those for climate change (parameters: atmospheric carbon dioxide concentration and change in radiative forcing), the rate of biodiversity loss (parameter: extinction rate) and the nitrogen cycle (parameter: amount of nitrogen removed from the atmosphere for human use).[192]

The message is clear. Whatever we wish to do economically, socio-politically, culturally or otherwise, we should operate within certain 'earth-safe' limits. Unfortunately,  there is no room for experimenting around a bit, neglecting the boundaries. We simply may never have a chance to analyze what went wrong and why.  Any activity we undertake in development toward sustainability must include clear measures to revert on boundary transgressions already committed and to stop approaching other boundaries too closely. At any rate, the **precautionary principle** should be applied ubiquitously. This principle is that if an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is not harmful falls on those taken the action. This refers to the Rio principles of sustainable development.[193] As indicated, we have to take into account the possible occurrence of critical transitions – or 'tipping points'.

---

[190] C.S. Holling (1973), 'Resilience and stability of ecological systems', *Annual Review of Ecological Systematics*, 4, pp. 1-23.

[191] B. Walker, C.S. Holling, S.R. Carpenter and A. Kinzig' (2004), ' Resilience, Adaptability and Transformability in Social-ecological Systems', *Ecology and Society*, Vol.9 (2),  online URL: http://www.ecologyandsociety.org/vol9/iss/2/art5/, p. 2. See also: C. Folke, S.R. Carpenter, B. Walker, M. Scheffer, T. Chapin and J. Rockström (2010), 'Resilience thinking: Integrating Resilience, Adaptability and Transformability', *Ecology and Society',*  Vol. 15 (4), online URL: http://www.ecologyandsociety.org/vol15/iss4/art20.

[192] J. van Renswoude et al, see note…., p-11.

[193] UNCED, 1992…...and: J. van Renswoude, see note-…, p-12.

In the Report Leach et al argue, that the planetary boundaries propose the outer limits of pressure that humanity should place on critical earth systems in order to protect human well-being. They introduce the concept of '***social boundaries'.*** They concern food, water, health, income, education, resilience, voice, jobs, energy, social equity, gender equality. By "*combining the inner limits of social boundaries and the outer limits of planetary boundaries in this way creates a doughnut-shaped space with which all of humanity can thrive by pursuing a range of possible pathways that could deliver inclusive and sustainable development.*"[194] Highly important is that this article connects processes in the environmental dimension and processes in the socio-economic, socio-political and socio-cultural dimensions or realms. They present a related plea, namely: "*a new interdisciplinary science for sustainability needs to encompass all these concerns.*"[195] In other words this is missing today. Of interest for this background paper is that this article stimulates to think about a conceptual and methodological framework for underpinning this interdisciplinary science. Secondly, that it demonstrates the necessity to understand the real significance of 'social boundaries'. This is a condition for understanding the interpretation of sustainable development.

# 7    *Sustainability: about dimensions and indicators*

## 7.1    *About the social dimension*

In the previous sections arguments are presented to start an extra global academic input for contributing to adequate and effective politics and policies resulting in the development toward sustainability. In terms of the Stockholm Resilience Centre we need an interdisciplinary science for sustainability. In the Brundtland Report from 1987 a fundamental start was made to address the question of sustainability. The authors made a distinction between three pillars of sustainability – the economic, the social and the environmental – and argued that it is essential to address the need of current as well as the need of future generations.[196] Ian Gough remarks, that the Report does not clarify what the needs are. This stimulates him to incorporate Len Doyal's theory about 'A theory of Human Needs' in the

---

[194] M. Leach, K. Raworth and J. Rockström 92014), 'Between social and planetary boundaries: navigating pathways in the safe and just spaces of humanity', see; ISSC, note-…, pp. 84-89, p. 86.

[195] M. Leach et al, see note-171, p. 88.

[196] UN-Report, see note…..

sustainability debate.[197] This section will start with the question of the supposed three pillars which also refers to the context of  debates on human capabilities, human needs etc.

Since the publication of the Brundtland Report this distinction between these three dimensions   seems to be accepted as an 'evidence sui generis'. For example, the authoritative German Council for Sustainable Development recently published a report on how to achieve a better balance between these three dimensions.[198] The applied method is to address the '**Sustainable Development Goals'** (SDG) respectively as formulated by the UN Open Working Group as an outcome of the Rio+20 conference in June 2012.[199] The German Report concludes that sustainable approaches or solutions require full acknowledgement of the interlinkages between these three dimensions. Therefore they proposed interlinkages of each of the UN-Goals and formulated related targets. Both – the list of Sustainable Development Goals as well as the elaboration by the German Council – at first sight present a very reasonable ordering of 'empirical experienced phenomena'. Because of the lack of theorizing applied concepts both – the goals and the elaboration for policy-making - remain eclectic and contingent. For example, in Goal 11 one of the aims is   "*by 2030 enhance inclusive and sustainable urbanization and capacities for participatory integrated and sustainable human settlement planning and management in all countries ".*[200]  Again, all applied concepts seem to be evident. This has a lot of affinity with the procedures of the IPCC's fifth Assessment Report and the ISSC's 2013 Report. The previous sections demonstrate that we need 'extra steps' in order to develop a comprehensive understanding of sustainability without 'evidences sui generis'.

The unexplained use of the concept of 'social dimension' as point of departure lies at the root of the problem. It refers to the usually accepted duality between 'the economic' and 'the social'. The economic/social duality is contested in social quality theory, which argues that the economic dimension is an aspect of 'the social'.[201] Social quality scientists are reconsidering

---

[197] I, Gough, see note….This endeavour also concerns a dispute with A. Sen who supposes, "*seeing people only in terms of needs may give us a rather meagre view of humanity' , p. 24. Gough's answer is: "In rejecting needs, Sen is left with a very thin protection for future generations in a current world where present actions are wreaking environmental devastation and unconstrained consumption of natural resources"*, p. 24.

[198] German Council for Sustainable Development (2015), 'Sustainable Development Goals and Integration: Achieving a better balance between the economic, social and environmental dimensions", (Stakeholder Forum, http://www.globalrreporting.org/network).

[199] UN (2012), 'Open Working Group proposal for Sustainable Development Goals' , (https://sustinabledevelopment. Un.org/ sdgsproposal,html

[200] UN, see note-182, p. 24.

[201] See different referrals…….

the concept of the social.[202] According to Raymond Apthorpe, mainstream economists – and also somewhat heterodox economists like Sen and Stiglitz – do at times permit themselves what he calls "sightings" (or sometimes even lengthier considerations) of what they call 'social'. He defines "sightings" as *"glimpses of what is thought to exist; while 'social' refers to various sorts of notions about 'people."* According to Apthorpe there are various ways of referring to the social, but they unfortunately add up to little: they consist mainly of a miscellaneous set of non-economic aspects that mainstream economic thinking can blame for the policy performance gap between what such thinking promises and what it often actually delivers.[203] This is also argued in the Working paper on behalf of participants of the Rio+20 conference in June 2012.[204] As a result of social quality thinking the supposed three dimensions of sustainability are changed into four dimensions (see below).[205]

## 7. 2   The concept of sustainability

The analyses of Bernard, Darkoh and Khayesi seem to be up to date. Currently we lack a theoretically grounded interpretation of the concept of sustainability. Therefore the concept has come to mean '*many different things to different people within different settings, partly because the concept is vague and partly because of the need to use the concept for different purposes and within different situations'*.[206] Usually the concept is not defined at all. For example, we  cannot find a definition in the ICCP's fifth Report, the ISSC's Report 2013, or the UN's Open Working Group SDG. In the manifold of studies, reports, newspapers the noun sustainability and its adjective are usually used as synonym of permanent, durable, steady or constant. The same problems occur with a 'biological product' or 'ecological responsible product or method'.

In this section the concept of 'sustainability' is conceived as directly interwoven with the theory and research on resilience of the environmental dimension (ecological systems) as discussed in the previous section. The societal ambition should be to prevent a further crossing of the planetary boundaries as explained by the members of the Stockholm

---

202 The social concerns the dialectic between processes of self-realization of human beings and the formation of collective identities, resulting in the productive and reproductive relationships of people, see….

203 R. Apthorpe (2015)………

204 See note…….

205 L.J.G. van der Maesen, see note…..

206 M. Bernard, K. Darkoh and M. Khayesi  (2009), Spatializing Development and Environmental Discourses: The Case of sustainable Development and Globalization, in: M. a. Salih (ed) *Climate Change and Sustainable Development. New Challenges for Poverty Reduction* (Cheltenham UK: Edward Elgar), pp. 179-92.

Resilience Centre. Without this entanglement it makes no sense to use the noun and the adjective of sustainability. In other words, 'sustainable economic growth' is a growth that underpins the resilience of the environmental dimension, or sustainable forest management is management maintaining the terrestrial biodiversity quality of the forests in question in order to maintain their resilience. Destruction of forests for paving the way for mono-plantations will decrease their resilience.Thanks to the connection with resilience of the environmental dimension (ecological systems)   we are able to present the following **definition of sustainability** of living conditions of humankind on earth. It concerns: '*a state of dynamic equilibrium between the entire interactive ensemble of non-living and living entities, functioning within the planetary boundaries, thus maintaining the resilience of the environmental dimension (ecological systems) of the planet'.* These living entities include the complexities of human actions. These complexities can cause either sustainable or unsustainable societal relationships as well as sustainable or unsustainable conditions concerning resilience of the environmental dimension.

We recognise a manifold of proposals for increasing sustainability, one of the most topical being the attention towards developing a 'green economy'. This is highly important but as such  it remains an approach which will merely cure the 'symptoms'. Also important is the attention to human dignity as a goal in the context of the discourse on sustainability. However, the dominant worldwide economic orientation is logically geared towards values that are based on highlighting individualist orientations. For the same reason it also denies the value of the commons as a central feature of current debate on classical economic thinking.[207] Understandably it also denies the significance of such values as human dignity, solidarity, social justice and equal value (see the four normative leading principles of social quality). This is also stimulated by denying the significance of 'the social' [208] It is due to especially Western politics, that this economic orientation is widely accepted. Without new politics and policies at global level (ceteris paribus) the outcomes of this logic will result into the commodification of all facets of human and other natural systems, a consequence of the rapidly expanding proliferation of information technologies, and the dynamics of this logic will be strengthened. This new social quality approach new pathways toward a change in the relations between economics and politics, and challenges its most notable leading principle that the allocation of resources (by those in power) is fundament of all politics and that only economics can determine the principles upon which society is based.[209]

---

[207] E. Ostrom (1990), *The Evolution of Institutions for Collective Action* (Cambridge: Cambridge University Press).

[208] This explicitly happened by:  N. Piper (1997) , 'Friedrich von Hayek und die unheimliche Revolution', *Die Zeit*, September 5.

[209] D. Gasper (2010)….

## *7.3 Sustainability and its four dimensions*

*exogene powers*

*change of socio-environmental dimension (1)*

*change of societal complexities (2)*

*socio-economic dimension (4)*

*socio-political dimension (5)*

*socio-cultural dimension (6)*

*Ecological Systems*

*cause of change*

*endogene powers*

*Constituting change of urban context and environment (3)*

*change of socio-environmental dimension (1)*