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UNIVERSITÄT LEIPZIG

# MASTERARBEIT / MASTER THESIS

Titel der Masterarbeit / Title of the master thesis

## Heading towards Sustainable Development

Does Green GDP have a Future in China?

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Angestrebter Akademischer Grad / Academic Degree Aspired

**Master (MA)**

Vienna, March 2011

Studienkennzahl :

A 067 805

Studienrichtung::

Individuelles Masterstudium:

Global Studies – a European Perspective

Betreuer / Supervisor:

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## **Acknowledgements**

It was a normal day in January 2009 in Vienna. As I walked through the entrance of the Department of East Asian Studies at the University Campus, one piece of notice on the entrance door caught my eye. It was this advertisement of “seeking for one research assistant for the research project ‘How to measure sustainability? Concepts of measuring sustainability in China in comparison with EU-countries’ ” (OeNB - Jubily Fund project 13194, managed by the University of Vienna) that inspired me in the theme selection for my master thesis. This master thesis is also part of the research results of this project.

My deepest gratitude goes to Prof. Dr. Susanne Weigelin-Schwiedrzik, whose devotion to the guidance was indispensable for the completion of this thesis. Without her precious and careful instruction, I would not have been able to conduct detailed research and analysis on the Green GDP accounting project in China.

I am deeply grateful to the Erasmus Mundus Masters Programme “Global Studies - a European Perspective” and to all my fellow students and teaching staff in Leipzig and Vienna. I have benefited a lot from this unique experience of attending this international programme.

Special thanks are dedicated to Mag. Leopold Kogler, who showed great patience and was always willing to help in any circumstance.

I would also like to express my appreciation to Dr. Josef Baum for allowing me to work as his research assistant and for his kind support during the whole research project. His perspective was very important to the background research on the concept of sustainable development and its

measures.

I am also truly grateful to Prof. Margarete Grandner, Prof. Andrea Komlosy, Caroline Ewen, David Engelhardt, Wei Wenfeng for their inspiring advice and instructive comments on the development of my master thesis.

I would also like to express my thanks to Hans-Christian Zohmann for the time-consuming proofreading and helpful input.

Finally, I would like to express my deep gratefulness to my parents Yin E and Tang Hongsheng for their wholehearted support and encouragement throughout, without which I would not have been able to carry my studies through.

## Abstract

The last three decades of the 20<sup>th</sup> century witnessed the booming development of the concept “Sustainable Development” in the global arena. During this time, the traditional GDP index for measuring national wealth was put into question and the international community has been in eager in its search of alternative indicators to GDP. Following this global tide, China started drawing its blueprint for the achievement of sustainable development in the country. The Chinese central government put forward the formulation of “Scientific Outlook on Development” and officially published its environmentally-adjusted GDP accounting report in 2006. The sudden suspension of the Green GDP accounting project subsequent to the release of the report was caused by multiple factors. The decline of the Green GDP accounting project mirrored the most common problems existing in environmental governance and in the cadre management system in China that need to be tackled urgently. It can be concluded that the revival of the Green GDP accounting in China is possible only if fundamental structural reform in both aspects take place.

**Key words:** Limits to growth, sustainable development, GDP, Green GDP accounting, Scientific Outlook on Development, environmental governance, SEPA, GDP worship, local protectionism, cadre management system

Innerhalb der letzten drei Jahrzehnte des 20. Jahrhunderts wurde der Begriff der „Nachhaltigen Entwicklung“ geprägt und hat international an Bedeutung gewonnen. Das traditionell verwendete Bruttoinlandsprodukt (BIP) als Indikator zur Messung des Wohlstandes einer Nation wurde mehr und mehr in Frage gestellt, und aus diesem Grund hat sich die internationale Gemeinschaft auf die Suche nach Alternativen begeben. Die Volksrepublik China (VR China) wollte diesen Bemühungen um nichts nachstehen und hat an einem eigenen Entwurf des Konzeptes nachhaltiger Entwicklung gearbeitet. Als Folge dieser Bemühungen hat die Kommunistische Partei das Konzept der Wissenschaftsbegründeten Entwicklung („Scientific Outlook on Development“) ausformuliert und in weiterer Folge im Jahr 2006 einen Bericht über die Berechnung des so genannten Grünen BIP veröffentlicht, welcher versucht, den Faktoren Umwelt und Nachhaltigkeit erhöhte Bedeutung bei der Bewertung des nationalen Wohlstandes beizumessen. Danach wurden die Aktivitäten der chinesischen Regierung hinsichtlich der nachhaltigen Entwicklung abrupt eingestellt. Die Nichtfortführung dieser Aktivitäten ist auf eine Vielzahl von Gründen zurückzuführen und kann mehrheitlich durch existierende Probleme des regierungsmäßigen Umgangs mit Umweltproblemen (environmental government) und des in der VR China vorherrschenden Systems des Kadermanagement erklärt werden. Erst die Lösung dieser Probleme in den beiden eben genannten Bereichen durch umfassende strukturelle Reformen kann eine Wiederbelebung der Initiative zur Berechnung des grünen BIP in der VR China ermöglichen.

## Abbreviations and Acronyms

ACCA21	Administrative Center for China's Agenda 21
ADB	Asian Development Bank
CAEP	Chinese Academy for Environmental Planning
CAS	China Academy of Science
CGGDPI	China Green GDP Index
CPC	Communist Party of China Central Committee
CSEEA	Integrated System of Economy-Environment Accounting of China
EIA	Environmental Impact Assessment
EPI	Environmental Performance Index
Eurostat	Statistical Office of the European Communities
GDP	Gross Domestic Product
GNP	Gross National Product
IMF	International Monetary Fund
ISEW	Index of Sustainable Economic Welfare
IUCN	International Union for Conservation of Nature and Natural Resources
MEP	Ministry of Environmental Protection
MEW	Measured Economic Welfare
MLR	Ministry of Land and Resources
NAMEA	National Accounting Matrix including Environmental Accounts
NEPA	National Environmental Protection Agency
NBS	National Bureau of Statistics
NCCPC	National Congress of Communist Party of China
NGO	Non-Governmental Organization
NPC	National People's Congress
OECD	Organization of Economic Cooperation and Development
PRC	the Peoples' Republic of China
SEEA	Integrated Environment and Economic Accounting
SEI	Stockholm Environment Institute



SEPA	State Environmental Protection Administration
SNA	System of National Accounts
SO <sub>2</sub>	sulphur dioxide
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
UNSC	United Nations Security Council
UNSD	United Nations Statistics Division
U.S.	the United States
WCED	World Commission on Environment and Development
WHO	World Health Organization
WWF	World Wildlife Fund

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## **Chronicles of Green GDP Accounting in China**

March 2004	“Green GDP Accounting Study in China” jointly launched by State Environmental Protection Administration (SEPA) and the National Bureau of Statistics (NBS) with 10 provinces and cities as pilot
April 2005	Public discussion about inconsistency between SEPA and NBS raised by statement of then director of NBS Li Deshui questioning Green GDP
September 2006	“China Green National Accounting Study Report 2004” released
December 2006	“China Green National Accounting Study Report 2005” confirmed to be released after Spring Festival 2007
July 2007	Publication of Report 05 infinitely postponed
August 2008	“China Resources and Environmental Statistical Indicators System” kicked off
March 2009	“China Resources and Environmental Statistical Indicators System” symposium held for public opinions
End of 2009	“China Resources and Environmental Accounting System Framework” under sectoral countersignature
February 2011	Proclamations by Jiangxi and Hunan provinces to re-launched Green GDP Accounting

## 1. Introduction

*“This was the first step in the voices of doubt. Although not perfect, it was a significant step forward while constructing the scientific concept of development.”<sup>1</sup>*

-- Jury remark of “Green Chinese of the Year in 2006”

September 7<sup>th</sup>, 2006. Beijing.

*China Green National Accounting Study Report 2004 (China Green GDP Report 2004)* was released to the public. Jointly conducted by the State Environmental Protection Administration (SEPA) and the National Bureau of Statistics (NBS), this report became the first official environmentally-adjusted Gross Domestic Product (GDP) accounting report in China. More significant, this report was also the first official national report of its kind that had ever been published in the whole world.

The release of *China Green GDP Report 2004* means quite a lot to China. On the one hand, the release of the report can be seen as a result of a profound consideration of the Chinese central government on the development models adopted in the country hitherto; on the other hand, it is one embodiment of the current guidelines of so-called “Scientific Outlook on Development”. Not less did the report 2004 mean to the international community. In the era of global economic integration when global economic and environmental interdependencies are deepening, the rapid economic growth and the environmental degradation of China will have inevitably strong international dimensions. The release of Green GDP report is therefore the release of a signal from the Chinese central government of its willingness to get engaged into national environmental

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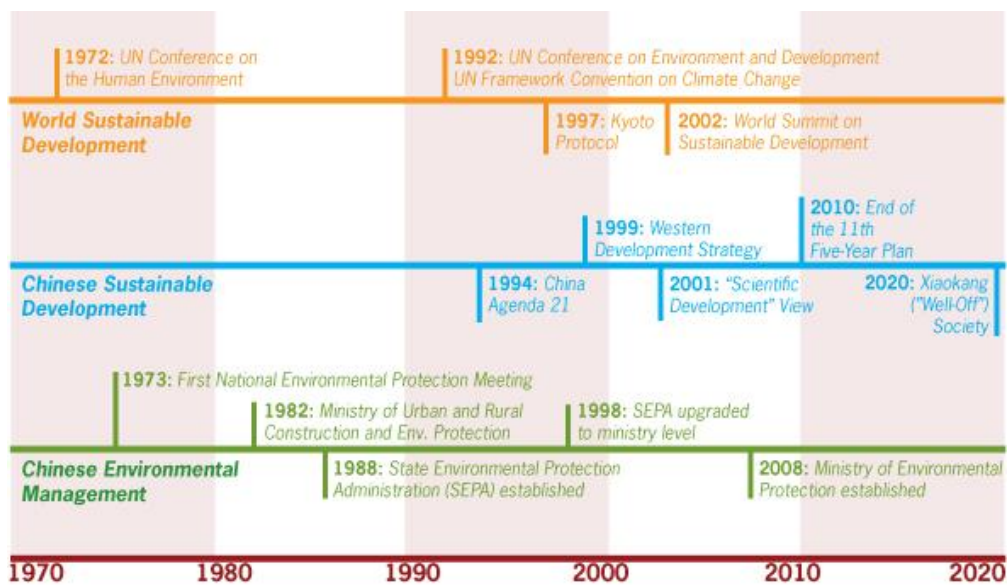
<sup>1</sup> Geng Guobiao: 绿色 GDP 课题研究小组荣誉背后的尴尬 (The Awkward behind the Honour of Research Team on Green GDP), in: 绿色中国 (Green China) 1/2007: 26-27, 27.

sustainability as well as international co-operation in global environmental issues. In addition, the formation of the concept “Scientific Outlook on Development” and its implementation might be thought as an attempt to go beyond the current mainstream development patterns and head towards sustainable development.

Regrettably, *China Green GDP Report 2004* was the first, and the only official environmentally-adjusted GDP accounting report that has been released to the public. With the announcement of an “indefinite” suspension of *China Green GDP Report 2005* in July 2007, a full stop was drawn to the official accounting project. Questions that followed this sudden end of the project became the departing point of the conception of this thesis: Why did the Green GDP accounting project enjoy a smooth beginning but experience such a sudden halt? What was the main obstacle behind that, if the project was even officially supported by the Chinese central government? Is it still possible to restart the project? If not, has there been any follow-up after this project?

In order to have a better overview of the whole project, the author will look through the context of the project and claim that the initiation of Green GDP accounting project had its historical background (as presented in figure 1, p. 3 middle). Green GDP accounting is one of the various attempts to adjust the traditional GDP and better indicate the relations between economic growth and environmental, social costs. The project in China was launched at the same period of time as the concept of “Scientific Outlook on Development” was formed in the country, whose core principles have been significantly sealed by the concept of “sustainable development” that is actively advocated by the United Nations (UN) and internationally acknowledged as the direction of the future of human beings. Consequently, the Green GDP accounting is regarded as an

important step of China forward to the sustainable development path and also one meaningful measure of its realization. The suspension of Green GDP accounting project was partially due to technical bottlenecks that need to be solved; the major obstacles for its implementation however, were the various conflicts among different stakeholders, which frequently recur in environmental issues in the country. Further extended from this view, the lagging sense of development and the structural defects in environmental governance in China would severely hinder its pace towards sustainable development.



(Figure 1: Milestones in World and China's Sustainable Development

Source: <http://earthtrends.wri.org/updates/node/321>, last retrieved on December 10, 2010)

Chapter 2 deals with the concept “sustainable development” and its evolution. It is argued that the debates on the concept in the last three decades have contributed the most to its present form and content. Several milestone documents will be analyzed for the conceptualization in the global agenda, followed by the discussion of measurements of sustainable development with indicators. With reference to the international standards provided by SEEA, alternative indicators are in need to complement the traditional GDP, and the general debates on Green GDP will be presented after that. Chapter 3 narrows its attention back to the conceptual framework of sustainable development

in China and the practice of Green GDP accounting accordingly. The main obstacles that caused its suspension will be thoroughly analyzed and transit to the further exploration of the general weaknesses in the environmental governance in China in Chapter 4. The thesis concludes with highlights of some recent promising changes taking place at various levels.

The study conducted in this thesis has been based on large amount of literature research, analysis and comparison. References cover a wide range of categories from official documents issued by international organizations, governmental documents, regulations and law to speech manuscripts, interviews, magazines and news papers. Case study is in the centre of this study, while the extension of further research objectives requires interdisciplinary approaches containing aspects of history, economics, international development and politics.

## 2. Sustainable Development: the Concept and its Measurement

*“We have not inherited the earth from our parents; we have borrowed it from our children.”<sup>2</sup>*

-- *World Conservation Strategy*

### 2.1. Shaping Sustainable Development: from Limits to Growth to Agenda 21

After four decades' formation, the thought of so-called “sustainable development” has swept across the globe and reached its peak recently. Departing from its original meaning in the field of forestry in the 18<sup>th</sup> century, the concept had been introduced into various fields such as the sphere of national economy and later on environmental issues, and gradually transited into its present form - the direction of the future of human beings.

#### 2.1.1.Limits to Growth (1972)

This journey begins with the publication of a report entitled The Limits to Growth commissioned by an international group named the Club of Rome in 1972. The report, compiled by experts from the U.S. and several countries, was based on the System Dynamics<sup>3</sup> theory and a simulation model known as “WORLD3” operated on computer to investigate several key variables, namely population, food production, industrialization, pollution and consumption of non-renewable

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<sup>2</sup> IUCN, UNEP and WWF: World Conservation Strategy: Living Resource Conservation for Sustainable Development (Gland 1980) section 1, paragraph 5.

<sup>3</sup> To explain briefly, System Dynamics is a method for understanding how complex systems can change over time and how internal feedback loops within the system influence the entire system behaviour. For details, please see: Donella H. Meadows, Dennis L. Meadows, Jorgen Randers and William W. Behrens III: The Limits to Growth: A Report for The Club of Rome's Project on the Predicament of Mankind (New York 1972) 20-22.



natural resources, their stock change and their interactions with each other in the system. By accounting for both positive and negative feedback loops of the variables that can radically influence the outcomes, the model managed to present 12 scenarios that showed different patterns of world development from 1900-2200. The conclusion drawn from the simulation was that the current technological development and societal increase cannot simply continue at a relatively high rate as achieved in the last two to three centuries. On the contrary, the exponential character of the population growth and natural resource use would impose limits to industrial growth, which would further result in a precipitous collapse of the economic system manifested in falling back of all aspects. What's worse, the overshoot and collapse would not be avoided if all relations - no matter physical, economic, or social - that traditionally guided the world development remains unchanged. Within a time span of less than 100 years, "the limits to growth on this planet will be reached ... The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity."<sup>4</sup> Mankind is prompted to take immediate measures and change its development path, in order to "alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future."<sup>5</sup>

The core question WORLD3 raised was, "how may the expanding global population and materials economy interact with and adapt to the earth's limited carrying capacity over the coming decade[s]."<sup>6</sup> Apparently this does not accord with the standard neoclassical paradigm, in which environment or nature is seen as a subsector of human activities. Besides, the scenarios it portrayed also seemed too pessimistic for people to perceive since at that time theory of limits went just counter to the modern idea of indefinite progress. This message from the Club of Rome which at

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<sup>4</sup> Meadows et al. (1972): *The Limits to Growth*, 23.

<sup>5</sup> *Ibid.*, 24.

<sup>6</sup> Donella Meadows et al.: *A Synopsis: Limits to Growth: The 30-Year Update*, (Vermont 2002) 8.

that time was still an unknown association initiated by Aurelio Peccei<sup>7</sup> and his concerns about the global development system and consisted of scientists, business executives, scholars, and public officials from all over the world<sup>8</sup>, soon sparked an outcry and was followed by countless support that confirmed the limits of growth in the foreseeable future, as much as fierce questions and criticisms on the reliability of basing such conclusions on such a mathematical representation of variables as too oversimplified and imperfect. Nevertheless, the model was not meant to put forward concrete answers or make any predictions. Rather as a tool, it was developed to help understand the broad sweeps and tendencies of the system in a general sense.<sup>9</sup> Just as the report itself demonstrated, “the prediction was only in the most limited sense of the word”<sup>10</sup>, whereas the primary aim was to evoke the deep concern and improve the insight, by emphasizing on immediate measures to achieve ecological and economic stability that is sustainable far into the future. If human beings are not to stop what they are doing, it is then inevitable for them to walk towards the catastrophe.

### **2.1.2. Pre-WCED: UNCHE (1972) and World Conservation Strategy (1980)**

The same year as the publication of *The Limits to Growth* became the topic of heated controversy, the UN gathered 113 member nations and had its first global Conference on the Human Environment held in Stockholm. Its primary intention was to call for more attention to environmental problems resulting from development and to urge an integration of environment

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<sup>7</sup> Aurelio Peccei (1908-1984), Italian industrialist. Together with the Scottish scientist Alexander King, he founded “the Club of Rome” where a group of experts from various backgrounds gather together for discussions on a broad range of interconnected global issues. For more general information about his life, please see website of Fondazione Aurelio Peccei [<http://www.clubofrome.at/peccei/index.html>, last retrieved on February 18, 2011] and the Club of Rome [<http://www.clubofrome.org/eng/about/4/>, last retrieved on February 18, 2011].

<sup>8</sup> Carl Mitcham: The Concept of Sustainable Development: its Origins and Ambivalence, in: *Technology in Society* Vol. 17, No.3 (1995): 311-326, 314.

<sup>9</sup> Meadows et al. (2002): *Limits to Growth: The 30-Year Update*, 8.

<sup>10</sup> Meadows et al. (1972): *The Limits to Growth*, 92.

protection and improvement into development planning and management. Nevertheless, the proposals of the conference did not gain support easily among its participant nations, the developing countries in particular. On the one hand, these countries were in deep concern that global environmental protection policies would simply not accord with their interests and priorities of poverty eradication through economic growth; on the other hand, they were reluctant to share the responsibilities and pay for the costs for environmental problems caused by industrial pollution that was mainly contributed by developed countries.<sup>11</sup> The results from a series of hard debates were shaped into of a long report consisting of one declaration, several action plans and hundreds of recommendations and the establishment of United Nations Environmental Programme (UNEP). The concerns from developing countries were recognized and embraced into *the Declaration of UNCHE*. Under-development was understood as the main cause of the environmental problem in the developing countries, thus the developing countries are encouraged to concentrate on development as top priority while bearing concerns on environmental protection and improvement in mind.<sup>12</sup>

Criticisms towards the Conference are concentrated first of all on its generally mild tone of stating the need to balance environment and development with only “rational planning”, “rational management” or “integrated development” rather than specific measures; others then accused it for its inadequacy of links between environmental and developmental issues.<sup>13</sup> Regardless of those critical voices, mentioning that environment and development should be treated as a whole by demonstrating that “To defend and improve the human environment for present and future

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<sup>11</sup> William M. Adams: Green Development: Environment and Sustainability in the Third World (London 2001) 55.

<sup>12</sup> UN: Report of the UNCHE, Stockholm, June 5th -16th, 1972, A/CONF.48/14/Rev.1 (United Nations Publication 1973) Chapter I, proclamation 4.

<sup>13</sup> Adams (2001): Green Development, 56-57.

generations has become an imperative goal for mankind - a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and of worldwide economic and social development.”<sup>14</sup>, the Stockholm Conference is still regarded as a key event in the conceptual development of “sustainable development”.

The gradual shift from laying emphasis on “the limits to growth” to discussing about what should be done for “sustainable development” eventually took shape in the 1980s, when there was growing consensus that environmental degradation was no more merely a side effect of industrial wealth, a problem that only affects rich nations, but also a severe issue for developing nations. The document *World Conservation Strategy*, published in 1980 by IUCN together with UNEP and WWF, was probably the first of its kind where this attitude shift was clearly perceivable. One major concern presented in the report was that the planet’s capacity to support people in both developing and developed countries, which was reducing irreversibly, might not be able to support mankind’s increasing demands on energy, financial and other costs for providing goods and services constantly. “The limits to growth” is recognized as the precondition of further growth, under which there is mutual dependency between conservation and sustainable development. Conservation is defined as “the management of human uses of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generation”<sup>15</sup>. Meanwhile, it was explicitly pointed out that “For development to be sustainable it must take account of social and ecological factors, as well as economic ones; of the living and nonliving resource base; and of the long term as well as the short term advantages and disadvantages of the alternative actions.”<sup>16</sup> As guideline document, *World*

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<sup>14</sup> UN (1973): Report of the UNCHE, Chapter I, proclamation 6.

<sup>15</sup> IUCN, UNEP and WWF (1980): World Conservation Strategy, section 1, paragraph 4.

<sup>16</sup> Ibid., section 1, paragraph 3.

Conservation Strategy provides numerous proposals and recommendations for strategy development, for decision making and for practical application. The document ends up by reiterating the significance of global development strategy and appeals to international coordination for achieving sustainable development. Though from a quite mono-disciplinary perspective of integrating environmental and developmental concerns into the concept of “conservation”, World Conservation Strategy did actually create the term of “sustainable development” and to a certain degree drew the outline of it, hence for the first time lifted the term up onto the global arena.

### **2.1.3. WCED: Our Common Future (1987)**

Having recognized that the environmental issues and its tight connection with economic growth and development are in the common interest of all nations, the General Assembly of the UN convened a World Commission on Environment and Development (WCED) in 1983. Under the chair of Norwegian prime minister Gro Harlem Brundtland, the mission of the Brundtland Commission was to formulate “a global agenda for change” - to draw greater attention of international community, to call for closer co-operation among countries at different stage of economical and social development and to propose long-term environmental strategies for achieving sustainable development which takes account of interrelationships of people, resources, environment and development.

Four years later, all efforts crystallized into a report of WCED titled Our Common Future. It was declared in the report that the poverty in the developing world was both a major cause and side effect of contemporary environmental degradation, and was the outcome of insensitive technology transfer that pauperized people and natural systems. The reciprocal links between

“environment” and “development” is inseparable and new approaches to “environment” and “development” are required - a broader perspective embracing environmental, economic, social and political factors is indeed in need.<sup>17</sup> Poverty eradication, together with environmental improvement and social equality is among the top present global challenges that need to be solved through development that is sustainable. The concept of “sustainable development” was then launched which in the first place is “development that meets the needs of the present by social and economic advance without compromising the ability of future generations to meet their own needs”<sup>18</sup>; and in the second place “a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development; and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.”<sup>19</sup>

*Our Common Future* was of great importance and profound impact. It inherits certain ideas proposed in *World Conservation Strategy*; yet different from its precursor, it moves one step forward to view the concept from a socio-economic perspective by taking people and their needs into consideration and searching for the feasible policies to meet the socio-economic goals.<sup>20</sup> Listening to the voices representing two entirely different positions – camp of environmentalists at one side arguing the limits to growth or no more growth in order to relieve the huge burden of the entire eco-system, and camp of pro-growth developmentalists requiring more development and growth for poverty eradication and well-off aspiration for the present and future generations at the other side, the Commission resolved to search for a third path – sustainable development, which recognizes

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<sup>17</sup> WCED: *Our Common Future* (Oxford 1987) 19-20, paragraph 8.

<sup>18</sup> *Ibid.*, 54, paragraph 1.

<sup>19</sup> *Ibid.*, 57, paragraph 15.

<sup>20</sup> Adams (1990): *Green Development*, 71.

“limitations imposed by the present state of technology and social organization on the environment’s ability” but promises better management and improvement of technology and social organization can “make way for a new era of economic growth”<sup>21</sup>. It caught key elements of the sustainable development debate in the context of international development, among which the most noticeable was the focus on reviving and continuing economic growth as it is seen as the only way to eradicate poverty and achieve further goals. WCED is therefore widely regarded as the political turning point of the concept of “sustainable development” into a global context, while the *Our Common Future* is thought to be the origin from where the prototype of present debates around the concept derives.

#### **2.1.4. Post-WCED: Rio Declaration plus Agenda 21 (1992)**

Five years after *Our Common Future* was presented to the UN General Assembly and disseminated worldwide, the first Earth Summit – the UN Conference on Environment and Development (UNCED) was convened in Rio de Janeiro in 1992 to assess progress that had been achieved since the convention of WCED and to further consolidate the integration process between environment and development. Attended by 172 nations and 116 heads of state or government, with the presence of 8,000 delegates, 9,000 media representatives and over 3,000 representatives of non-governmental organizations (NGOs)<sup>22</sup>, UNCED was undoubtedly large in scale and full of high expectations which various participants placed on it. The conference was indeed fruitful. Among all documents adopted in this Summit, the *Rio Declaration on Environment and Development* and *Agenda 21* deserve particular mention here.

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<sup>21</sup> WCED (1987): *Our Common Future*, 24, paragraph 27.

<sup>22</sup> *Ibid.*, 80.

27 fundamental principles are set up in the Rio Declaration<sup>23</sup> as guidelines for the achievement of sustainable development through full involvement of stakeholders from governments down to the grassroots level. The Rio Declaration records the recognition of the principle that “human beings are at the centre of concerns for sustainable development” and the right to “a healthy and productive life in harmony with nature” was entitled along with that (Principle 1). Environmental protection should be considered as “an integral part of the development process” since they are “independent and indivisible” (Principle 4 and 25). Rio Declaration also notes the “common but differentiated responsibilities” of states to global environmental degradation and the need of global cooperation for the protection and restoration of the Earth’s ecosystem (Principle 7). In the meantime, states are encouraged to “promote the internalization of environmental costs and the use of economic instruments” together with the polluter pays principle (Principle 16), to implement “environmental impact assessment[s]” for proposed activities “as a national instrument” (Principle 17) as well as to “enact effective environmental legislation” that accords with its environmental and developmental context (Principle 11).

On the other hand, as the first global action plan for sustainable development of its kind, Agenda 21 provides detailed measures for the achievement of the objectives embodied in the Rio Declaration from an interdisciplinary perspective integrating economical, social and ecological dimensions of development. The integration of economic, social and environmental factors at all policy, planning and management levels had been proposed in order to enable a systematic consideration where “environment and development would be put at the centre of economic and political decision-making”.<sup>24</sup> In particular, member states are encouraged to develop “systems for

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<sup>23</sup> UN: Report of the United Nations Conference on Environment and Development, Rio de Janeiro, June 3<sup>rd</sup>-14<sup>th</sup>, 1992, A/CONF.151/26 (Vol. I) (UN Publication 1993) Annex I, Rio Declaration on Environment and Development.

<sup>24</sup> UN (1993): Report of the United Nations Conference on Environment and Development, Rio de Janeiro, June



monitoring and evaluation of progress towards achieving sustainable development by adopting indicators that measure changes across economic, social and environmental dimensions”<sup>25</sup>. It is also suggested that the traditional national accounting procedures should be expanded to encompass also environmental and social dimensions. In order to integrate the environmental factor into economic management and to better understand the crucial role of environment, it is proposed that a framework of national accounting systems of integrated environmental and economic accounting (IEEA) should be developed as an integral part of the national development decision-making process and eventually should be adopted in all countries. At the international level, the relevant UN organizations should work in collaboration with other international organizations on the development and standardization of provisional concepts and methodologies proposed by Systems of National Accounts (SNA) Handbook on IEEA and assist member states with the utilization of sustainable development indicators and the establishment of their own national IEEAs. At the national level, agencies in charge of national accounts should work in close cooperation with environmental statistics and natural resource departments and strengthen the national accounting systems. Nevertheless, it is clearly expressed as well that IEEA “should be seen as a complement to, rather than a substitute for, traditional national accounting practices for the foreseeable future”<sup>26</sup>.

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3<sup>rd</sup>-14<sup>th</sup>, 1992, A/CONF.151/26 (Vol. I) Annex II: Agenda 21, Section 1, Chapter 8, Part A, paragraph 8.1.

<sup>25</sup> Ibid., Part A, paragraph 8.6.

<sup>26</sup> Ibid., Part D, paragraph 8.41-8.42.

## 2.2. Understanding Sustainable Development: Concept with multi-Dimensions

*“No single blueprint of sustainability will be found, as economic and social systems and ecological conditions differ widely among countries. Each nation will have to work out its own concrete policy implications. Yet irrespective of these differences, sustainable development should be seen as a global objective.”<sup>27</sup>*

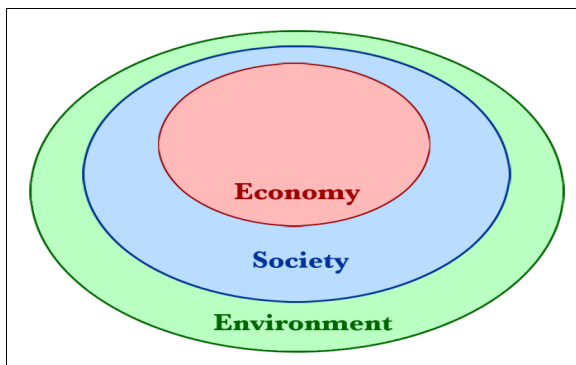
-- *Our Common Future*

As mentioned before, the concept of “sustainable development” presented in *Our Common Future* provides a platform for the present mainstream debates on “sustainable development”. “Sustainable development” has been defined in *Our Common Future* in a broadest way since the Commission believes that the perception of the concept is subjective and dependent on various aspects and fields, thus differs from individual to individual, from society to society and even from generation to generation. This characteristic of flexibility of the concept also leads to such a situation that the connotation of the term could be interpreted and extended by everyone while consensus on the meaning of “sustainable development” could hardly be reached. Since the birth of the concept, it has been always under development - discussed, revised, extended and redefined. As a result, one finds at the one end of the debate spectrum the academic conceptualization which advocates a cosmic perception of viewing the interrelation between human activities (both economic and social) and natural environment as concentric circles (as depicted in figure 2, p. 16 below); and the institutional version of understanding sustainable development as the overlapping zone where the three systems (economic, social and ecological) interact at the other end (as in Figure 3, p. 16 above, “the theory” part). In spite of the conceptual slipperiness, the survey of

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<sup>27</sup> WCED (1987): *Our Common Future*, 51, paragraph 51.

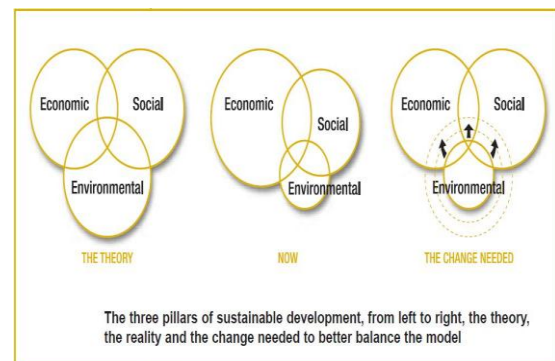
various interpretations and definitions of “sustainable development” at hand has helped to define several features that are reflected more or less in all versions reviewed.



(Figure 2: Cosmic View of three Dimensions

Source:

<http://www.sustainabledevelopment.com/index/>,  
last retrieved on December 13, 2010)



(Figure 3: Interlink View of three Dimensions

Source: IUCN: The IUCN Programme 2005-2008:  
Many Voices, One Earth, 9)

The present mainstream understanding of “sustainable development” embraces three interlinked dimensions as any process of development does – economic (economic growth), social (social progress) and ecological (environmental protection) systems, yet the interrelations among these three dimensions could be interpreted differently and illustrated by various models.

The conventional approach to the three dimensions is to look upon them as three independent systems that are interlinked with each other. This model allows the trade-offs between the systems, hence environment (services of natural capital) could be turned into normal commodities, whose value could be properly reflected by their market prices and whose scarcity does not matter a lot since substitution could always be found as long as the economy keeps growing and technology developing. On the contrary, unlike neoclassical economists, ecological economists like Herman Daly<sup>28</sup> see these three dimensions as interdependent to each other in a concentric cosmos, where

<sup>28</sup> Herman E. Daly (1938 - ), American ecological economist. He was one of the co-founders of the International Society for Ecological Economics (ISEE), and served as Associate Editor of the journal Ecological Economics. He is closely associated with the theory of Steady State Economy and Uneconomic Growth. For more general information about him, please see website of the Right Livelihood Award [<http://www.rightlivelihood.org/daly.html>, last retrieved

economy emerges from the society and they both are embodied in the natural universe. The natural ecosystem develops but does not grow, while the economy grows by transforming its environment into itself (manmade capital – labour and technology) and takes place within a total environmental that is finite, non-growing and materially closed.<sup>29</sup> Consequently, manmade and natural capitals are regarded as complements rather than substitutes. Daly clearly pointed out the different natures of the two concepts “growth” and “development” by defining that growth is the quantitative increase in physical scale while development is qualitative improvement or the unfolding of potentiality, thus development is sustainable while throughput growth not. If a qualitative improvement happens without quantitative increase beyond environmental capacity, then this process becomes “development without growth”, or in other words “steady state economy”. Following this, Daly then demonstrated his understanding of sustainable development as “development without growth in throughput of matter and energy beyond regenerative and absorptive capacities”<sup>30</sup>.

The identification of the three dimensions as principles of sustainable development can be detected in the perception from an institutional perspective as well. To put it in a simply way: Sustainable development refers to status where the circles of three objectives are in a balanced constellation and equal to each other. Unfortunately this equilibrium has not yet been achieved in practice, since one dimension - economic development - normally receives much more attention than the other two. If too much effort is given on one single dimension, the other two dimensions will stagnate, and their development will be stagnated, hampered or even reversed. In reality, the

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on February 27, 2011] and Center for the Advancement of the Steady State Economy [<http://steadystate.org/herman-daly/>, last retrieved on February 27, 2011].

<sup>29</sup> Herman E. Daly: Uneconomic Growth: in Theory, in Fact, in History, and in Relation to Globalization, Clemens Lecture Series 11, College of Saint Benedict, Saint John's University (1999) 13.

<sup>30</sup> Extract from Sustainable Development: Concept and Indicators, in: Sustainable Development Indicators in Ecological Economics, eds. Philip Lawn (Glos/Massachusetts 2006): 13-51, 29.

conflict between economic development and environmental protection for instance reflects exactly this trend of laying the main focus on only one dimension, namely economic development.

When asking about “what to be sustained”, one should not narrow this down only to human activities and human development, but should also incorporate the sustainability of nature. In fact, nature has always been depreciated as its value is seen in its capacity to be converted into resources that facilitate the economic growth. Its capacity of self-regulation and the life support functions have not gained enough attention, while these features of the nature are precisely the precondition for human survival and development.<sup>31</sup> Therefore to understand the meaning of sustainable development requires a change of the way we think and a shift in values. The relation between human activities and nature, between developmental and environmental policies need to be re-scrutinized and redefined, the conventional economic structure and consumption model to be questioned and a systematic change urged.

One additional feature of the institutional version lies in its need-satisfaction orientation. The key element of “need satisfaction” is to realize distributional equity that has two layers of meaning in the context of sustainable development. It refers on the one hand to the intra-generational aspect which according to demonstration of *Our Common Future* meets the needs of the present without affecting future generations to meet their needs; and on the other hand to the inter-generational aspect of setting up poverty eradication as one of the top priorities in policy and decision-making procedures at various levels, due to the fact at present the huge gap between the rich and the poor still exists, and poverty eradication as well as improvement of living standards still remains one of the basic needs for the majority of the global population. Not only would efforts on the

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<sup>31</sup> CAS Sustainable Development Strategy Study Group: 2003 中国可持续发展战略报告(China Sustainable Development Strategy Report 2003) (Beijing 2003) 38.

accomplishment of inter-generational equity have immediate impacts in reality, it is also the premise for achieving the intra-generational continuity.

### 2.3. Measuring Sustainable Development: Sustainability Indicators

*“Many development strategies have focused narrowly on economics. But this focus on economics has led to a confusion of means with ends: higher GDP is not an end in itself but a means to improve living standards and a better society, one with less poverty, better health, and improved education. ... Development itself is a transformation of society, a society-wide shift to new ways of thinking.”<sup>32</sup>*

-- Josef E. Stiglitz

“Indicators”, as direct information communicator for complicated phenomena, are increasingly visible and widely applied at various levels for different purposes. Though based on the statistics or analysis of primary data, indicators usually provide information in highly aggregated quantitative, and analyze the trend in relatively simple form<sup>33</sup>. The discussion on indicators here will be constrained to those adopted in economic activities and policy issues for measurement and evaluation, especially for decision making at the top-level. For a long time economic growth has dominated public policy debates and analysis because it was believed that economic growth best reflects well-being and prosperity. Correspondingly, economic indicators such as GDP have usually occupied a significant place in policy making procedure. Once the concept of sustainable

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<sup>32</sup> Josef E. Stiglitz: Development Based on Participation – A Strategy for Transforming Societies, in: Transition Vol. 9, No. 6 (1998): 1-3, 1.

<sup>33</sup> Allen Hammond et al.: Environmental Indicators: A Systematic Approach to Measuring and Reporting on Environmental Policy Performance in the Context of Sustainable Development, World Resources Institute Report (Washington D.C. 1995) 1-2.

development stepped into the global arena, concerns on whether the existing key indicators could still fulfil the duty of measuring progress towards sustainable development are growing accordingly.

### **2.3.1. National Accounting and Dominance of GNP/GDP**

As early as back to the mid 17<sup>th</sup> century, the scattered exploration of national accounting has already begun. No matter the ambition of the Englander William Petty to investigate the taxable capacity of the nation, the “economic table” published by Francois Quesnay – the leading figure of the French physiocrats, the notion of “wealth of nation” extended by Adam Smith to embrace manufactures or the national statistical account developed for Australian colonies by Timothy Coghlan, all these attempts were mainly individually initiated and lack of systematic methodological support.<sup>34</sup> The rise of neoclassical economics school gave an impetus to the notion of market value. The market price of a certain product became the best measure and central metric for its economic significance; hereby everything that has a price and is commercially traded in the market would be added to the national well-being. This implication excludes two large realms out of the “recorded welfare”: the contributions from the social realm (household and voluntary work) and the natural habitat, because their function and services do not generate commercial exchange and this makes themselves invisible in the national accounting.<sup>35</sup>

Unified standards for measuring national production did not solidify until the early 20<sup>th</sup> century, when the national governments and international organizations gradually took over the national income statistics and encouraged both the theoretical and empirical development of this field. In the following decades, a number of economists distinguished themselves with findings that largely

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<sup>34</sup> Qiu Dong: 国民经济核算史论 (A historical Review: System of National Accounts), in: 统计研究 (Statistical Research) No. 4 (1997): 65-72, 66.

<sup>35</sup> Clifford W. Cobb et al.: If the GDP is up, why is America down?, in: The Atlantic Monthly, October 1995: 59-78, 62.

contributed to the completion of a framework that has remained in use ever since. The breakthrough of measurements took place in the U.S. in the 1930s. In the period of the Great Depression, politicians were eager to get a proper idea of the state of national income so that they could base the policies on a clear economic foundation. Economist Simon Kuznets was then appointed by the Department of Commerce to the task of developing a uniform set of national accounts. Based on a rich source of statistical information, this set of accounts provided an overall view of the state of the economy, which enabled it to help the policymakers to steer the economy towards the key economic objectives. These accounts also became the prototype for the GDP accounting. During the Second World War, this set of accounts evolved into Gross National Product (GNP) accounts and played a critical role as a war-planning tool, since it enabled the U.S. Government to reallocate unused capacities in the economy and to exceed conventional production levels by far.<sup>36</sup> With the great success during the wartime, the national accounts soon became a widely accepted system after the war in guiding the economic transition of the country; meanwhile, economists, as observed by Clifford Cobb, got rid of the post-war position of being rarely quoted or consulted for public policy and became the ultimate authority on the public policy.<sup>37</sup> It seemed fairly natural that growth statistics based on GNP, which was initially intended only to measure the market activities in a country, was taken as a proxy for well-being of a nation at the time when there was still an absence of other widely accepted measures. Nevertheless, GNP was never designed to become a universal measure for well-being. It was the economists' belief in a positive correlation between the increasing GNP and the increase of well-being that had laid solid ground for its dominance. It was turned into GDP in 1991 under the waves of the economic globalization.

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<sup>36</sup> Ibid.

<sup>37</sup> Ibid., 63-64.



In 1972, William Nordhaus and James Tobin had developed an index named Measured Economic Welfare (MEW) testing its correlation with GNP over the period of 1929-1965 and discovered a positive correlation between GNP and MEW during this time period.<sup>38</sup> Two decades later, John Cobb, Clifford Cobb and Herman Daly looked in the same topic by building up their Index of Sustainable Economic Welfare (ISEW) based on the review of the MEW and taking only the second half of the same course for comparison. Surprisingly, the positive correlation between GNP and MEW falls dramatically.<sup>39</sup> This observation indicates that GNP growth at this time frame improved economic welfare in an inefficient way and placed the strong belief of mainstream economists in the positive correlation of welfare with GNP increase into question. Daly further put forward a distinction between economic growth and uneconomic growth, stating that economic growth is not always “economic”. Uneconomic growth occurs when increases in production come at an expense in resources and well-being that is worth more than the items made. Daly warned that in fact, the current economic growth has already become uneconomic: “The quantitative expansion of the economic subsystem increases environmental and social costs faster than production benefits, making us poorer not richer.”<sup>40</sup>

The principle architect of GDP Kuznets had more than once called for a cautious adoption of GDP. Already in 1934, Kuznets had warned in his first report to the U.S. Congress that “the welfare of a nation can ... scarcely be inferred from a measurement of national income as defined above”.<sup>41</sup>

Almost thirty years later, faced with the extent and scope to which GDP had been applied, Kuznets

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<sup>38</sup> For details please see: William D. Nordhaus and James Tobin: Is Growth Obsolete?, in: *The Measurement of Economic and Social Performance, Studies in Income and Wealth*, Vol. 38, ed. Moss Milton, National Bureau of Economic Research (Princeton 1973) 510-564.

<sup>39</sup> Herman Daly (1999): *Uneconomic Growth*, 9-10.

<sup>40</sup> Herman Daly (1999): *Uneconomic Growth*, 14-15.

<sup>41</sup> Simon S. Kuznets: *National Income 1929-32*, Letter from the Acting Secretary of Commerce transmitting in Response to Senate Resolution No. 220 (72D CONG.) A Report on National Income, 1929-32, 73<sup>rd</sup> US Congress, 2<sup>nd</sup> Session, Senate Document No. 124 (Washington D.C. 1934) 7.

once again criticized that “Distinctions must be kept in mind between quantity and quality of growth, between its costs and return, and between the short and the long run. Goals for ‘more’ growth should specify more growth of what and for what.”<sup>42</sup> In the current central accounting mechanism where GDP holds the dominant position, non-monetary, non-material assets such as leisure time, citizenship and voluntary community services, parental care for children, natural resource wealth are often discounted, disvalued and even ignored; while their depreciation and degradation are counted as gains and progress in growth measures. With the adoption of GDP, growing economies, especially those of the South are “booming” with the “gains” of selling off their natural resources and becoming manufacturing factories set by the nations of North. These “gains” reflected in GDP deepened the marginalization of those already sidelined social and environmental aspects in the public policy agenda; what’s worse, the misleading signals sent by GDP were presented to the decision makers and the public and made them believe in the illusion of prosperity. As time goes by, although many economists have put forward their concerns about the dominance of GDP in measuring national wealth, GDP still enjoys global acceptance and is followed widely as an accurate measure for economic welfare.

### **2.3.2. SEEA - Guideline at international Level**

As the limitations of conventional national accounting were recognized, discussions about searching for alternatives of GDP accounting were launched immediately. Environmental-economic accounting brings economic activities and environmental information together into a common framework to measure the interaction between the two factors. Within this system, the environmental data are consistent with the concepts and standards adopted in national

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<sup>42</sup> Simon S. Kuznets: “How to Judge Quality”, the New Republic, 20 October, 1962: 29-32, cited in Clifford W. Cobb et al. (1995): If the GDP is Up, Why is America Down?, 67.

accounts, hence can be directly compared to the generally applied macro-economic indicators. The environmental accounts have an economic perspective and ask how much pressure the economy puts on the environment and how much it costs to prevent and/or reduce these pressures. Combined with the national accounts, environmental accounts provide a powerful tool to analyze the impact of current production and consumption patterns on the environment.

Various discussions on developing and implementing environmental-economic accounting have been conducted at an international level since the 1970s and were largely pushed forward by the convention of WCED and UNCED. Due to the fact that work on conceptual, methodological, analytical and policy use has been initiated by countries and institutes, the consequences differ from each other by their respective emphasis. However, all these different outcomes are parts of environmental accounting and need to be guided in a cooperative way. After a series of joint workshops on the topic of feasibility of physical and monetary accounting in the area of natural resources and environment organized by international organizations such as UNEP, the World Bank and the World Resources Institute during the 1980s and early 1990s, a consensus was gradually achieved to incorporate environmental data into the central framework of the SNA, first of all in a satellite approach to avoid overburdening the existing system by dedicating one chapter on satellite accounts to environmental-economic accounting.<sup>43</sup> In 1993, The United Nations published the *Handbook of National Accounting: Integrated Environment and Economic Accounting* (SEEA), setting out the methodology for the valuation of natural sources and environmental degradation caused by anthropogenic activity. However, as no final conclusion of concepts and methods had been achieved at that time, this handbook of SEEA-1993 was issued as a mid-term version of work

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<sup>43</sup> UN: Handbook of National Accounting: Integrated Environment and Economic Accounting (Interim Version) (UN Publications 1993) Preface iii.

in progress with the aim to evoke more active reaction.<sup>44</sup> In the following years, several countries started experimenting with SEEA; while experts from national and international agencies as well as NGOs all over the world got involved in this field. The rising discussion of concepts and methods with experience of respective countries largely facilitated the completion work of SEEA. Based on numerous experts meetings as well as a wide public discussion process, the revision of SEEA-1993 was finally jointly issued in 2003 by the UN, the International Monetary Fund (IMF), OECD, the Statistical Office of the European Communities (Eurostat) and the World Bank. Currently, the SEEA-2003 is under revision lead by the United Nations Statistical Commission (UNSC) in close cooperation with national statistical offices, international organizations (UNSD, UNEP, Eurostat, the World Bank and OECD) as well as expert groups from relevant fields. The latest revision, which is expected to be approved in 2012, is aimed to prepare a statistical standard that covers all aspects of environmental accounting. The *SEEA Handbook* does not support particular schools of thought; it is rather an integrated information system with multi-purposes for strategic planning and policy analysis and therefore can be universally applied. In fact, the *SEEA Handbook* is gradually becoming an international statistical standard for harmonizing the concepts and methods in environmental-economic accountings.

The accounts contained in the *SEEA Handbook* can be briefly divided into four main categories:

- 1) Physical and hybrid flows accounts (NAMEA);
- 2) Asset accounts in physical and monetary terms;
- 3) Economic accounts and environmentally related transactions (environmental

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<sup>44</sup> Ibid. v.

- protection, resource management and resource exploitation expenditures);
- 4) Environmentally-adjusted national accounts aggregates (adjusted for depletion, degradation and defensive expenditures).<sup>45</sup>

The information from different modules in the *SEEA handbook* can be freely combined depending on specific policy needs to compose a new set of accounts. It is also due to this flexibility inherent in the SEEA that there has been no full implementation of SEEA undertaken by any country so far. Based on different national needs and interests, each country is able to implement those useful portions of the modules described in SEEA and develop its relevant indicators.

### **2.3.3. Debate around Green GDP**

For around three decades there have been debates almost all around the world on whether or not to take deterioration of the environment and depletion of natural resources into consideration when calculating the GDP. Effort has been made to develop the concept of green GDP since the 1990s. Yet as a concept, green GDP seems to be frequently applied but rarely precisely defined.

In a broad sense, any attempt or exercise of greening the national accounts with respect to natural resources and the environment could be labelled as green GDP. Depending on the respective interpretations, those green GDPs in practice can be roughly classified into three groups. Some of them are developed in the direction of providing indicators for sustainable development through the approach of national wealth.<sup>46</sup> The status of various resources and the capitals are often measured by a set of indicators in physical units, which not only eases the problem of quantifying and aggregating the value of different wealth resources, but also reflects the development of

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<sup>45</sup> UN et al.: Handbook of National Accounting: Integrated Environment and Economic Accounting 2003 (UN Publications 2003) 2.

<sup>46</sup> Knut H. Alfsen et al.: International Experiences with “Green GDP”, Statistics Norway Report 2006/32 (2006) 9.

national wealth clearly. However, their all-embracing coverage also leads to the problem that the outcome of a large set of indicators will not only complicate the evaluation and analysis process but also blur the key aspects for policy making. Others provide an overall index which is based on the aggregation of large ad hoc sets of indicators for the issues and problems relevant to the environment and social conditions. “Genuine Savings” developed by World Bank, or biophysically based indicators that pay more attention to the environmental aspects such as the “Ecological Footprint” and the “Living Planet Index” issued by WWF are representative models for this group and very helpful in directing concrete environmental policies. The most striking practice however, is to organize natural resource accounts and environmental statistics that are originally measured in physical terms in a way so that they become consistent with the standard national accounts. Once supplemented by information about the relevant prices, these physical accounts and statistics can form further adjusted or corrected accounts.<sup>47</sup> The UN and several international organizations shoulder together the responsibilities of providing standards that can be internationally employed, and have been dedicating themselves to the compilation of the *SEEA Handbook*.

On the other hand, efforts are made to work out a single index to describe an adjusted GDP number or growth rate, where several factors would be taken into account, including the extraction and depletion of natural resources, various costs and damages associated with environmental degradation and pollution, as well as the loss of ecosystem services as the consequence of pollution. The idea of developing a measure of green GDP was the topic of hot debates in the 1990s. Simply put, all these costs mentioned should be deducted from the traditional GDP in order to get a “greener” GDP. Since it aims at correcting the national accounts aggregate with depletion of natural resources and deterioration of the environment, this single index can be placed into the

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<sup>47</sup> Ibid., 9-10.

fourth category of SEEA and is usually reckoned as Green GDP index in a narrow sense.

Countries such as Norway and Sweden were among the advocates of Green GDP. The idea of constructing Green GDP as an environmentally adjusted GDP at the national level was once seriously considered in Norway. Nevertheless, the Green GDP index does not seem as widely spread as its counterparts at an international stage. No country has so far produced any aggregate of this kind on a regular and official basis.

Technical bottlenecks are to be blamed for its limited acceptance. No agreement has been achieved on fundamental methodological questions. Valuation of environmental assets and natural resources remains one of the top challenges, because their valuation from the supply side is probably to produce totally different results compared with that from the demand side. This causes the confusion about which of them should be applied to adjust the GDP. Likewise, difficult and controversial is the question “which cost items should be deducted from the GDP”, since various actions would have their spatial effects and temporal impact on others. Actions to reduce emission levels in a country, for instance, will eventually affect large sections of the economy and gradually improve the air condition in that country. The task of adjusting the GDP then turns out to be a complicated process - a wide-ranging analysis of interrelationships within the economy. The consequence of adjusting the GDP for changes in the state of the environment might probably be a necessity to adjust the entire traditional GDP measure. The third argument stems from the perspective of national wealth. Questions of “whether the declines of natural capital can be offset by growth of human capital”, and “to what extent the various wealth components can substitute for each other” are still under discussion. Therefore, it is questionable whether the wealth components can be aggregated into a single total national wealth indicator at all, since the various

components cannot always replace each other.<sup>48</sup>

To sum up, it is highly problematic to define the value of environmental capital and to calculate the consumption of such capital. In addition, the lack of a theoretical framework and a solid statistical underpinning also complicates the process. Regarding the uncertainty mentioned above, attempts aiming at the extension of the traditional aggregates still largely remained on an experimental level until 2006. In this year, China issued its Green GDP report, and the concept of green GDP once again caught the eye of the public.

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<sup>48</sup> Ibid., 17.



### 3. China's Approach to Sustainable Development: Rise and Decline of Green GDP

*“Traditional ideas of considering economic growth solely in quantitative terms and the traditional development mode of ‘polluting first and treating later’ are no longer appropriate when considering present and future requirements for development. It is now necessary to find a path for development, wherein considerations of population, economy, society, natural resources, and the environment are coordinated as a whole, so that a path for non-threatening sustainable development can be found which will meet current needs without compromising the ability of future generations to meet their needs.”<sup>49</sup>*

*--China's Agenda 21*

#### 3.1. Conceptual Framework of China's Sustainable Development

##### 3.1.1. China's Agenda 21

Immediately after the UNCED held in 1992, the Chinese government made the decision of drafting its national Agenda 21. Under the direction of a leading group guided by the State Planning Commission (SPC - 国家计划委员会) and the State Science and Technology Commission (SSTC - 国家科学技术委员会), the Administrative Center for China's Agenda 21 (ACCA21 - 中国 21 世纪议程管理中心) was established to organize and coordinate the formulation of China's Agenda 21, and to prepare its implementation broken down into relevant priority projects. After two years' hard work, *China's Agenda 21: White Paper on China's Population, Environment, and Development in the 21st Century* (中国 21 世纪议程：中国 21 世纪人口、环境与发展白皮书) which consists of 20 chapters and 78 programmes was completed and promulgated in 1994. Based on the spirits of the *Agenda 21*, *China's Agenda 21* not only sets up the comprehensive

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<sup>49</sup> ACCA21: 中国 21 世纪议程——中国 21 世纪人口、环境与发展白皮书 (China's Agenda 21: White Paper on China's Population, Environment, and Development in the 21st Century) (Beijing 1994) 1, Chapter 1, paragraph 1.1.

strategies and policies for sustainable development for China to promote its integrated development of economy, society, resources, and environment; but it also takes its own national conditions into consideration and contains specific measures for each sectoral development.

In chapters concerning economic policies (Chapter 4) as well as conservation and sustainable use of natural resources (Chapter 14), the necessity of establishing an integrated environmental and economic accounting system as monitor of the performance of the entire national economy which takes account for resources and the environment as well as the economy is explicitly mentioned and re-stressed. The establishment of the integrated accounting system will not only “enable more rational and more economical use of natural resources”, but also “allow the improved coordination between long-term and short-term development policies and serve as an effective instrument for coordinating economic development and the protection and sustainable use of natural resources.”<sup>50</sup> The White Paper also calls for a closer international cooperation and exchange, as well as a more effective inter-governmental coordination in the establishment, improvement and normal operation of an integrated environmental and economic accounting system.

As a further step towards the establishment of a national sustainable development strategy in the new century, *the Programme of Action for Sustainable Development in China in the Early 21st Century* (中国 21 世纪初可持续发展行动纲要) was promulgated by the National Development and Reform Commission (国家发展和改革委员会) in 2004. This *Programme of Action* serves on the one hand as a mid-term evaluation of China’s first ten-year-efforts towards sustainable development. It confirms the sustained, rapid and healthy economic growth that China has maintained and the remarkable progress that has also been achieved in various fields such as poverty eradication,

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<sup>50</sup> ACCA21 (1994): China’s Agenda 21, 25, Chapter 4, paragraph 4.42-4.43; see also 110, Chapter 14, paragraph 14.12.

environmental protection, rational exploitation of resources, the gradual incorporation of the strategy of sustainable development into detailed programmes and plans; as well as the increasing enactment and enforcement of relevant laws and regulations.<sup>51</sup> However, it also points out the great challenges China is facing: conflict between rapid economic growth, intensive resource extraction and related ecological deterioration; widening regional socio-economic disparities; constraints caused by a large population and scarce resources; as well as inconsistencies between existing law and requirements for sustainable development.<sup>52</sup>

On the other hand the Programme also serves as the implementation guideline which specifies the objectives, principles, priority areas and safeguard measures adjusted to the new requirements. Concepts such as “Human-centered”, “Harmony between man and nature”, “Centring around economic growth and proceeding from the need to improve the quality of life for the people”, “Unwaveringly promoting harmony between social and economic development on the one side and population, resources and the environment on the other side” are listed as main guidelines<sup>53</sup>; while “Growing capacities for sustainable development”, “Marked progress in economic restructuring”, “Significant improvement in the ecological environment”, “markedly increased efficiency in utilization of resources” as well as “Sustainable path of development characterized by rising productivity, prosperous livelihood and a well-preserved environment” are among the main objectives<sup>54</sup>. As safeguard measures, various measures are suggested to be adopted in order to realize the goals set forth for each priority area: enhancing inter-agency coordination for decision-making, improving laws and regulations for better legislation on sustainable development,

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<sup>51</sup> NDRC: 中国 21 世纪初可持续发展行动纲要 (Programme of Action for Sustainable Development in China in the Early 21<sup>st</sup> Century) (Beijing 2004) Part I.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid., Part II, Point 1.

<sup>54</sup> Ibid., Part II, Point 2.

etc. Especially, “a standardized and rational performance review and award system for public servants should be developed to motivate leading government officials at all levels to pay great attention to sustainable development ... [Eventually,] government officials should be evaluated chiefly by their performance in implementing sustainable development, as measured by the outcome of the evaluation and final inspection mission.”<sup>55</sup> Besides, in order to achieve balanced development, it is necessary to “develop an indicator system favourable to measuring the level of sustainable development in targeted areas and enterprises; and introduce, on a trial basis, the cost of resources and the environment into the accounting system of the national economy; and to introduce, on a trial basis, the system of assessing the impact on sustainable development for major projects and decisions.”<sup>56</sup>

### **3.1.2. Scientific Outlook on Development**

The term “harmony” first occurred in the report of the former General Secretary of the Central Committee Jiang Zemin at the 16<sup>th</sup> National Congress of Communist Party of China (NCCPC) on November 8<sup>th</sup>, 2002. It was mentioned at that time as “social harmony”<sup>57</sup>, one of the 6 dimensions of a well-off society to which the party aims to lead the country and its people, and referred to “the situation in which all people are well positioned, do their best and live in harmony”<sup>58</sup>. This term “harmony” then had been enriched and extended to the idea of “harmony among the population, resources, and environment”; the latter has been eventually adopted as the fundamental policy to realize a well-off society in an all-round way.

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<sup>55</sup> Ibid., Part IV, Point 1.

<sup>56</sup> Ibid.

<sup>57</sup> Jiang Zemin: 全面建设小康社会 开创中国特色社会主义事业新局面：在中国共产党第十六次全国代表大会上的报告（2002年11月8日）(Report to the Sixteenth National Congress of the Communist Party of China on November 8, 2002 (Beijing 2002) 19, Part III Paragraph 3.

<sup>58</sup> Ibid., 15, Part II Point 3.

The Third Plenary Session of the 16<sup>th</sup> Communist Party of China Central Committee (CPCCC) was convened in October 2004. The plenum decision announced the formation of the new Scientific Development Concept which “sticks to the people-centred principle, adopt a concept of comprehensive, coordinated and sustainable development, for the promotion of overall harmonic development of economy, society, and human beings”<sup>59</sup> and call for serious implementation of the concept. The “Scientific Development Concept”, or later on thoroughly explained in the report of HU Jintao to the 17<sup>th</sup> NCCPC as the “Scientific Outlook on Development”, “takes development as its essence, putting people first as its core; comprehensive, balanced and sustainable development as its basic requirement; and overall consideration as its fundamental approach”<sup>60</sup>. It is featured by the people-centred principle, economic development as central task and aimed at the building-up of “a resource-conserving and environment-friendly society that coordinates growth rate with the economic structure, quality and efficiency; and harmonizes economic growth with the population, resources and the environment”<sup>61</sup>, or in other words, to achieve the integration of humanism together with overall, coordinated and sustainable economic, environmental and social development.

As echo of the “Scientific Outlook on Development”, the concept “Building a Harmonious Socialist Society” has become increasingly eye-catching since it was launched at the fourth Plenary Session of the 16th CPCCC and peaked as the “Resolutions of the CPC Central Committee on Major Issues regarding the Building of a Harmonious Socialist Society” was adopted and the

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<sup>59</sup> CAS: 温家宝：十六届三中全会提出全面协调可持续科学发展观 (Wen Jiabao: Comprehensive, Coordinated, Sustained Scientific Development Concept put forward at the Third Plenary Session of the Sixteenth Central Committee of CPC), October 31, 2003.

[[http://www.cas.cn/jzd/jdj/jszjh/200310/t20031031\\_1722268.shtml](http://www.cas.cn/jzd/jdj/jszjh/200310/t20031031_1722268.shtml), last retrieved on February 18, 2011]

<sup>60</sup> Hu Jintao: 高举中国特色社会主义伟大旗帜 为夺取全面建设小康社会新胜利而奋斗：在中国共产党第十七次全国代表大会上的报告(2007年10月15日)(Report to the Seventeenth National Congress of the Communist Party of China on October 15, 2007) (Beijing 2009) 18, Part III Paragraph 5.

<sup>61</sup> Ibid., 18-20, Part III Paragraph 6-8.

construction of a socialist harmonious society was placed as a strategic task at a “more prominent position”<sup>62</sup> on the work agenda at the conclusion of the Sixth Plenary Session of the 16th Central Committee of CPC in 2006. In order to bring about a prosperous and stable society, priorities are given to aspects such as providing adequate social services in rural areas, correcting regional development imbalances, addressing labour dislocation, expanding health services and education, and placing greater emphasis on environmental and sustainability concerns. Particularly in the context of social development, it is appealed to further strengthen environmental protection and governance and to promote the harmonious coexistence between human being and nature. Emphasis is still laid on addressing the environmental and ecological problems which endanger people’s health and affect sustainable development; greatly increasing resource utilization efficiency; visibly improving ecological environment and accelerating the building of a resource-conserving and environmental-friendly society.<sup>63</sup>

In order to make one further step towards “harmonious society” and eventually a well-off society, the next stage is to respect nature and to take into account the interaction between human and nature, human and human, human and society. Among the new requirements proposed in HU’s report to the 17<sup>th</sup> plenary session of NCCPC, the concept “Building Ecological Civilization” has seized a great amount of attention. It is the first time that the concept of “Building an Ecological Civilization” has been defined as a strategic task and integrated into the construction of a harmonious society. “Building an Ecological Civilization”, although proposes to create a resource

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<sup>62</sup> Sixteenth Communist Party of China Central Committee: 中国共产党第十六届中央委员会第六次全体会议公报 (Communiqué of the Sixth Plenum of Sixteenth Communist Party of China Central Committee), in: 中国共产党第十六届中央委员会第六次全体会议文件汇编 (Compilation of the Papers of the Sixth Plenum of Sixteenth Communist Party of China Central Committee) (Beijing 2006) 3, Paragraph 9.

<sup>63</sup> The 16<sup>th</sup> Central Committee of Communist Party of China: 中共中央关于构建社会主义和谐社会若干重大问题的决定 (Resolutions of the CCCCC on Major Issues regarding the Building of a Harmonious Socialist Society) (Beijing 2006) 15, Part III Point 7.

and energy-efficient and eco-friendly industrial structure, economic growth pattern and consumption pattern<sup>64</sup>, should not be reckoned as synonym to pollution control, environmental protection or ecological recovery. It was put forward upon the understanding that the current mainstream development model rooted in industrial civilization, which advocates large-scale production and consumption and requires constant resources depletion, cannot sustain.<sup>65</sup> Considering the worsening environmental degradation caused by the economic development that China is facing, the proposal of “Building an Ecological Civilization” can be interpreted as a sign of the Chinese government re-thinking its development model, and as an attempt to explore a new development path that differs from the view of industrial civilization. It is a sign of its endeavours to a harmonious relation between mankind and the nature.

### **3.1.3. “Three Transitions” in Managing Environmental Protection & Economic Development**

*“We must be fully aware of the severity and complexity of our country’s environmental situation and the importance and urgency of increasing environmental protection. ... Protecting the environment is to protect the homes we live in and the foundations for the development of the Chinese nation. We should not use up resources left by our forefathers without leaving any to our offspring. China should be on high alert to fight against worsening environmental pollution and ecological deterioration in some regions and environmental protection should be given a higher priority in the drive for national modernization.”<sup>66</sup>*

--Wen Jiabao at the 6<sup>th</sup> National Environmental Protection Conference in 2006

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<sup>64</sup> Hu Jintao (2007): Report to the Seventeenth National Congress of the Communist Party of China on October 15, 2007, 25, Part IV Paragraph 7.

<sup>65</sup> Ma Jun: 以生态文明引领发展模式的根本变革 (Ecological Civilization is the Way Forward), in: 环境保护 (Environmental Protection) 21 (2007): 74-75, 74.

<sup>66</sup> Xinhua News Agency: Wen sets out Strategy to tackle Environmental Protection, April 23 2006. [[http://news.xinhuanet.com/english/2006-04/24/content\\_4465638.htm](http://news.xinhuanet.com/english/2006-04/24/content_4465638.htm), last retrieved on February 20, 2011]

While attending the 6<sup>th</sup> National Environmental Protection Conference in April 2006, the Chinese Premier Wen Jiabao addressed the importance of environmental protection to the implementation of scientific development in his speech, urging changes in development models and calling for “Three Transitions”:

- 1) shift from the development model of economic growth prior to environmental protection to one of both with equal importance;
- 2) shift from environmental protection lagging behind the economic growth (passive and belated model of environmental protection) to both developing in tandem ( proactive, preventive model);
- 3) shift from environmental protection mainly through administrative intervention to combined exertion of legal, economic, technical methods and administrative intervention if necessary.<sup>67</sup>

On the same occasion, Wen pointed out that environmental protection has still not received enough attention in some areas and therefore called for stricter measures to regulate officials responsible for environmental protection by noting that “environmental protection ... [should] become part of the assessment system of economic and social development and the performance of officials”<sup>68</sup>.

Behind all concepts, as the commentator article in People’s Daily points out, is the increasing concern about the excessive and unhealthy pursuit of economic growth in China: “Growth seems to be equal to development, but it is not simply the same ... If [the nation were to] focus merely on quantitative and rapid economic growth while ignoring the balance between development of the

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<sup>67</sup> General Office of the State Council: 温家宝总理在第六次全国环境保护大会上的讲话：全面落实科学发展观，加快建设环境友好型社会 (The Speech of Premier Wen Jiabao at the 6<sup>th</sup> National Environmental Protection Conference on April 17, 2006: Implement the Scientific Outlook on Development in an All-round Way and Accelerate the Construction of an Environment-friendly Society), in: 中华人民共和国国务院公报 2006 年 6 月 10 日第 16 号 (总号: 1195) (Gazette of the State Council of The PRC, June 10, 2006 Issue No.16, Serial No. 1195) 5-9, 7.

<sup>68</sup> Ibid. Please also see: Xinhua News Agency: Wen sets out Strategy to tackle Environmental Protection, April 23 2006.



economy, politics and culture, and ignoring the balance between human and nature, then development would ultimately be restricted and slow down.”<sup>69</sup> At the same time, environmental protection and sustainable development have been gaining attention among central leadership, which also reflects a growing concern that the irrational development will jeopardize China’s capacity for long-term growth.

### **3.2. From Concept to Action: Green GDP accounting in China**

At the Seminar on Population, Resources and Environment in March 2004, Hu Jintao made a speech and reemphasized the harmony among the three objectives.<sup>70</sup> Hu mentioned that all government departments should have a sense of responsibility for improving people’s lives, protecting resources and improving the ecological environment. Hu stressed that work concerning population, resources and environment must accord with the rules of natural and social development. It is also noticeable that Hu clearly pointed out the importance to conduct research on green national economic accounting methods; to explore assessment systems for economic development which takes resource consumption, environmental damage and benefit in the development process into consideration; so as to set up and maintain the balance between the human beings and the nature.

#### **3.2.1. Explorations at earlier Stage**

Although it is only since 2004 that the concept of Green GDP has gradually become a popular

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<sup>69</sup> n.N.: 树立和落实科学发展观 (Build up and Implement Scientific Outlook on Development), 人民日报 (People’s Daily) Nov. 5, 2003, 1.

<sup>70</sup> Hu Jintao: 胡锦涛在中央人口资源环境工作座谈会上的讲话全文 (Speech of Hu Jintao at Seminar of Population, Resources and Environment on April 4, 2004) (Beijing 2004) 6.

issue in China, relevant researches and experiments had already begun in the early 1980s. The academia was among the first to express its concern about the irrationality of rapid economic development in the country. The state-wide research conducted by China Research Academy of Environmental Science (中国环境科学研究院) to evaluate Environmental Pollution Cost and Ecological Damage in 1980 marked the beginning of China's gradual involvement into systematical calculation of economic loss caused by environmental pollution. However, the researches in the first years were very limited. By introducing the latest international experience into China<sup>71</sup>, experts and scholars such as Li Jinchang<sup>72</sup> intended to catch broader attention within the country to the natural resource accounting. Mainstream discussions were still at the introduction and information level rather than practical application.

Various researches were continuing. Thanks to the international assistance and support from the state, a series of practice<sup>73</sup> were conducted in China. Chinese scholars were no more satisfied with research work only relying on methods established in the SEEA system, therefore started the theoretical exploration on the integrated accounting system based on the combination of international experience with national conditions. One project team was set up by the Development and Research Center of the State Council to probe natural resources accounting and its integration into the National Economic Accounting System in 1988. Four years later, SNA replaced the Material Product System (MPS)<sup>74</sup> and was adopted as the official accounting system in

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<sup>71</sup> Several research works such as *Natural Resource Accounting and Analysis in Norway Environment* (1987), *Natural System and Development: Economic Assessment Guideline* (1988) have been successively translated into Chinese.

<sup>72</sup> Li Jinchang (1934 - ), Chinese scholar. He was one of the pioneer researchers in the field of natural resource and environmental cost accounting in China. He has translated several international research papers into Chinese and introduced the leading research achievements into China. Summarized from Wang Jinnan et al.: *Research on Green GDP Accounting in China: Review and Outlook*, CAEP Working Paper presented at 9<sup>th</sup> Meeting of the London Group on Environmental Accounting in Copenhagen (Beijing 2004), 4.

<sup>73</sup> NEPA and WHO, e.g., held together "International training workshop of environmental economic assessment" (1984); CRAES conducted Study on Projection and Countermeasures for the Environment in 2000 (1985), and so on.

<sup>74</sup> The first official accounts for the PRC were compiled in 1952 using the Material Product System (MPS), a system developed in the former Soviet Union and used by most centrally planned economies.

China, which further accelerated the process of GDP adjustment research. From 1996, Beijing University spent four years on completing the methods of calculation for the integrated resources, environment and economic accounting based on the reference of SEEA 1993 and finally built up the framework of the Integrated System of Economy-Environment Accounting of China (CSEEA) in 1999. As part of the task, a trial calculation was conducted for the year 1992 under the framework of CSEEA and the conclusion showed that the loss of environmental degradation and nature resource depletion accounts for around 4.87 percent of the annual GDP of that year.<sup>75</sup>

Almost in the same period of time, with the assistance from international agencies such as Statistics Norway, OECD, World Bank as well as international NGOs, China kept on developing workable models for Nature Resource Accounting and Integrated National Economic Accounting. The state also shows its increasing interest in the Green GDP research and has supported a series of pilot projects of both theoretical study and practical implementation.<sup>76</sup> Relevant national departments including the Chinese Academy of Environmental Planning (CAEP – 中国环境保护部环境规划院), National Bureau of Statistics of China (NBS – 中国国家统计局), the State Environmental Protection Administration<sup>77</sup> (SEPA – 中国国家环境保护总局) and the China Council for International Co-operation on Environment and Development (CCICED – 中国环境与发展合作国际委员会) have taken active part into various research projects successively.<sup>78</sup>

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<sup>75</sup> Qian Yuanjun: 国内外绿色GDP研究的总体进展 (Overview of Green GDP Research at Home and Abroad), in 理论参考 (Review of Theory), 4/2006: 49-51, 50.

<sup>76</sup> CAEP carried out studies on sustainable development and environmental economic indicator system in 1999; SEPA together with World Bank conducted evaluation method study for environmental pollution loss in China and pilot studies in two provinces from 2000; CAEP carried out studies on environmental comprehensive indicator system and environmental performance evaluation with assistance from OECD, to name just a few. For more reference, please see Wang Jinnan et al. (2004): Research on Green GDP Accounting in China: Review and Outlook, 4-5.

<sup>77</sup> SEPA, growing out of the National Environmental Protection Agency (NEPA) in 1998, had administered environmental protection related issues; implemented environmental policies and enforced environmental laws and regulations since then. It was lifted up to Ministry of Environmental Protection (MEP) in 2008. Further discussion can be found in the following parts.

<sup>78</sup> Wang Jinnan, Jiang Hongqiang and Yu Fang (2004): Research on Green GDP Accounting in China, 4-5.

### 3.2.2. Green GDP Accounting Experiments and Green GDP Report 2004

As early as in 1999, the Beijing University already carried out a pilot project on Green GDP calculation for the Ningxia Hui Autonomous Region. NBS also worked on a similar Green GDP experiment in the municipality of Chongqing in 2001. Yet particular attention should be paid to the year 2004. In this year, the Framework Research on the Green National Economic Accounting System, one of the key technology Research and Development programmes during the Tenth Five-year plan period, was conducted by the Renmin University of China with cooperation of CAEP and SEPA. SEPA later on indicated that China had successfully completed an initial framework accounting system for Green GDP and launched the project “Study of Integrated Environmental and Economic Accounting” in collaboration with NBS. This signified that the topic of Green GDP calculation officially entered the practical stage and was raised to a higher level of political decision-making. Ten provinces and municipalities including Beijing, Tianjin, Chongqing, Hebei, Liaoning, Zhejiang, Anhui, Guangdong, Hainan and Sichuan were selected as pilot provinces/municipalities to join the trial Green GDP accounting of the year 2004<sup>79</sup> and all the participants had completed their calculation by the end of 2006.

In September 2006, the *China Green National Accounting Study Report 2004 (China Green GDP Report 2004)*, which was the first of its kind on environmentally-adjusted GDP accounting in China, was jointly released to the public by SEPA and NBS. According to the report, the economic loss caused by environmental pollution in 2004 was 511.82 billion Yuan, which accounts for 3.05 percent of GDP of the year (15987.8 billion Yuan). Viewed from the perspective of abatement input for

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<sup>79</sup> Before these ten participants were officially announced for the first pilot accounting in the early 2005, the initial experiment was to be launched in Beijing, Jilin, Shaanxi, Guangdong, Shanghai and Shanxi. However provinces such as Shanxi reported as early as August 2004 that the GDP would have barely grown if environmental factors were taken into accounts, which probably led to them not included into the final participants' list.

environmental pollution, the one-off direct investment of 1,080 billion Yuan (excluding investment which has been made), which accounts for 6.8 percent of the GDP of that year, should be required to abate and dispose of all the discharged pollutants in 2004 with the currently available technologies. Additionally, an imputed abatement cost of 287.44 billion Yuan is required for the year 2004, which accounts for 1.8 percent of the GDP. This pollution adjusted index of 1.8 percent is much higher than 1.18 percent of the GDP - the proportion of actual pollution abatement and control investment during the “Tenth Five-year Plan” period.<sup>80</sup> “The figures mark only the beginning of our efforts in calculating Green GDP”, said Vice Minister Pan Yue<sup>81</sup> of SEPA at the release conference, “Although it will be a long process to establish the system because of difficulty in obtaining data and the approach, we have to kickstart it. China cannot wait till all the pre-conditions are ready”. Commissioner Qiu Xiaohua<sup>82</sup> of NBS also demonstrated that “the figures are the world’s first official figures on Green GDP calculation and it is urgent for China to work on this complicated issue and set standards for cleaning its environment.”<sup>83</sup> Even though Pan Yue and Qiu Xiaohua both indicated that the accounting results in 2004 are only part of actual resources and environmental costs, which presented the environmental damage cost including the environmental pollution cost while excluding the accounts of costs of natural resources depletion and ecological damage<sup>84</sup>; even though the most common items that should be covered when

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<sup>80</sup> State Environmental Protection Administration (SEPA), National Bureau of Statistics (NBS) et al.: 中国绿色国民经济核算研究报告 2004 (公众版) (China Green National Accounting Study Report 2004 <Public Version>) (Beijing 2006), 8-9; also see CAEP: Green GDP Accounting Study Report 2004 issued, September 11, 2006. [[http://www.gov.cn/english/2006-09/11/content\\_384596.htm](http://www.gov.cn/english/2006-09/11/content_384596.htm), last retrieved on February 22, 2011]

<sup>81</sup> Pan Yue (1960- ), vice minister of Chinese Ministry of Environmental Protection since 2008. He is famous for his resolute work-style in leading several environmental protection events such as the Environmental Assessment Storm and the Green GDP accounting project. For other details, please see: resume of Pan Yue posted on the website of MEP [[http://english.mep.gov.cn/Ministers/resume/200706/t20070620\\_105492.htm](http://english.mep.gov.cn/Ministers/resume/200706/t20070620_105492.htm), last retrieved on February 22, 2011]

<sup>82</sup> Qiu Xiaohua (1958- ), former director of NBS. He was dismissed from his position in October 2006. For more details, please see: [[http://www.chinavitae.com/biography/Qiu\\_Xiaohua](http://www.chinavitae.com/biography/Qiu_Xiaohua), last retrieved on February 22, 2011]

<sup>83</sup> Sun Xiaohua: GDP takes on a green hue in new figures, China Daily Vol. 26 No. 8236, September 8, 2006, 1.

<sup>84</sup> Ibid.

calculating the environmental pollution costs<sup>85</sup> were only partially selected and included in the current report; even though the report result reflected the ultimate greened GDP in a limited sense; those figures were still striking enough to shock many government officials; once issued to the public, the report immediately received enormous attention and controversy from various circles of the society.

### 3.2.3. Discordant Sound

At the award ceremony of “Green Chinese of the Year in 2006” (2006 绿色中国年度人物)<sup>86</sup> in December, a special prize was presented to the research team of the Green GDP accounting project for their outstanding contribution to China’s first Green GDP report. “This was the first step in the voices of doubt.” So did the jury comment, “Although not perfect, it was a significant step forward while constructing the scientific concept of development.”<sup>87</sup> However, in the acceptance speech, members of the team revealed that consensus on green GDP had not yet been achieved at the local level and some participants were even requiring withdrawing the pilot project. The reluctance or even rejection of Green GDP accounting was also confirmed by Pan Yue. Even though, Pan still showed strong determination by emphasizing that SEPA would by no means give up the project even if there were only one participant left.

In fact, soon after the release of the report to the public, it is reported that several pilot provinces would not continue participating in the accounting project due to a shortage of budget.<sup>88</sup>

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<sup>85</sup> SEPA, NBS et al. (2006): China Green National Accounting Study Report 2004 <Public Version>, 2.

<sup>86</sup> The “Green Chinese of the Year”, supported by UNEP, is an annual national award sponsored by seven Chinese government institutions including the State Environmental Protection Administration, the National Environmental Protection Committee, the Ministry of Culture and the State Administration of Radio. It is China’s highest honour for people who have made exceptional contributions towards environmental protection.

<sup>87</sup> Geng Guobiao (2007): The Awkward behind the Honour of Research Team on Green GDP, 27.

<sup>88</sup> Zhang Fengang: 绿色 GDP 试点退出传闻调查 (Investigation on the Withdrawal of Pilot Participants from the Green GDP Accounting Project), 21 世纪经济报道, December 18, 2006, 01.

According to the pilot project scheme, each participant is required to self-finance their own data collection. The amount of budget therefore varies among participants and highly depends on the intention of the provincial/municipal governments. However, it was quite common to hear that the provincial budget is not sufficient to support the huge workload of the complicated and detailed investigation. Besides, participant provinces also complained about the fact that they lacked the personnel to conduct such a massive project. Additionally, they had faced difficulties due to the lack of cooperation between the local NBS and EPB and between themselves and the leading team.

After the public release of the *Green GDP Report 2004*, SEPA and the NBS promised that the *Green GDP report 2005* would be released in one year. Afterwards, the date of the report release was changed over and over again: At the end of 2006, the release of the report 2005 was postponed to 2007 first before the Chinese Spring Festival, later on late March; finally in July 2007, the postponement of releasing the report to the public was officially announced as “indefinite”.

#### **3.2.4. Conflicts among relevant Stakeholders**

The embarrassing situation the Green GDP accounting faced was further proved by Wang Jinnan, vice-president of CAEP and the technical head of the Green GDP report 2004. In the interview with Beijing News, Wang attributed indefinite postponement of the release of Green GDP report 2005 mainly to two factors: lack of unified opinions between SEPA and NBS on “whether to release the report to the public” and “what should be released”; and the fierce opposition from local officials to the report release.<sup>89</sup> Officially NBS emphasized the technical defaults of Green

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<sup>89</sup> Ma Li: 王金南接受《新京报》采访时表示：“绿色 GDP 核算”研究报告发布可能会无限期推迟 (Wang Jinnan interviewed by Beijing News: Green GDP Accounting Report might be indefinitely postponed), Beijing News (新京

GDP accounting and immaturity of both theory and methods that led to their final decision. However, it was reported that NBS preferred to keep the results of the report 2005 - especially the breakdown details for each province - internally and only to submit the report to the State Council for reference.<sup>90</sup> Some provincial governments are even reported to lobby SEPA and NBS not to publicize the updated data. In fact, report 2005 shows even higher losses from pollution and depletion in the GDP indicator than report 2004<sup>91</sup>, and this might explain why the release of the report 2005 received such resistance.

#### **A. Rupture of SEPA-NBS alliance: more than just Technical Challenges**

“Beijing has abandoned plans for a ‘green measure’ of gross domestic product as it battles to restrain growth to protect the environment.”<sup>92</sup> This report titled *China abandons Green GDP Index Plan* in the British newspaper Financial Times on May 10<sup>th</sup>, 2006 caused great reaction both in China and abroad, thus inspired the discussion about the uncertain future of green GDP. According to the report, while SEPA insisted that the implementation of green GDP will help China assess the environmental cost of the economic development and achieve a sustainable growth, officials at the NBS questioned the possibility of calculating an accurate figure for gross domestic product adjusted measuring the impact on the environment and indicated that SEPA had thought about green GDP in a much too simple way as if it was just a matter of addition or subtraction of figures.

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报), August 1, 2007 [<http://www.caep.org.cn/readnews.asp?newsid=1063>, last retrieved on February 22, 2011]; please also see Xue Li and Ruan Qi: 雷明: 有些省份 GDP 实际是零增长 (Actual GDP Growth of Zero in some Provinces according to Lei Ming), 上海证券报 (Shanghai Securities News) No. 4560, August 3, 2007, 7; and Deng Yuwen: 王金南: 为中国绿色 GDP 积极探路 (Wang Jinnan: active Explorer to Green GDP for China), 上海证券报 (Shanghai Securities News) No. 4696, December 24, 2007, A7.

<sup>90</sup> Sun Xiaohua: Green GDP shown the red signal, China Daily, Vol. 27 No. 8397, March 23, 2007, 1.

<sup>91</sup> Ma Li (2006): Wang Jinnan interviewed by Beijing News.

<sup>92</sup> Richard McGregor: China abandons Plan for Green GDP Index, Financial Times, May 10, 2006, 1.



As a matter of fact, disputations had occurred much sooner than could have been expected. “Is it really necessary for us to account green GDP?” That was a rhetorical question raised by then director of NBS Li Deshui<sup>93</sup> at the Forum on China’s Recycle Economy on May 24<sup>th</sup>, 2005 - only two months after the official launch of the pilot accounting in 10 provinces/municipalities.<sup>94</sup> Though Li attributed the infeasibility of the green GDP accounting to its technical hurdles, his words were more interpreted as to bring disputes between SEPA and NBS to the public. At the press conference held on 12<sup>th</sup> July 2007, then director of NBS Xie Fuzhan<sup>95</sup> expressed his attitude on the issue by denying the concept of the so-called Green GDP, stating that “the term of Green GDP does not exist in the global community due to the lack of its internationally acknowledged methodology as well as no similar practice in any other country at a state level to date”<sup>96</sup>. Xie Fuzhan’s viewpoint undoubtedly further confirmed the disputation.

The dispute between SEPA and NBS lies by no means only in different technical approaches. Although the calculation of Green GDP was jointly conducted by NBS and SEPA, the core team was lead by SEPA, as Pan Yue was appointed team leader, and coordinated by NBS. However, the leadership of SEPA in the pilot programme was questioned by different parties. In the viewpoint of Zhou Hongchun, an expert from the Development Research Centre of the State Council, NBS should be the proper body to be in the main charge of data collection and calculation, since Green GDP was an indicator based on GDP calculation, and NBS was the only authoritative body at the

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<sup>93</sup> Li Deshui (1944- ), former director of NBS from 2003-2006. For more details, please see: [[http://www.chinavivae.com/biography/Li\\_Deshui](http://www.chinavivae.com/biography/Li_Deshui)|2265, last retrieved on February 22, 2011]

<sup>94</sup> Pang Jiaoming: 绿色 GDP:在部委争议中被“乌托邦化” (Green GDP Disputations), in: 商务周刊 (Business Watch Magazine), 2005 Issue 12, 44-45, 44.

<sup>95</sup> Xie Fuzhan (1954- ), former director of NBS from 2006-2008. He was appointed director of the Research Office of the State Council since 2008. For more details, please see: [[http://www.chinavivae.com/biography/Xie\\_Fuzhan](http://www.chinavivae.com/biography/Xie_Fuzhan)|2408, last retrieved on February 22, 2011]

<sup>96</sup> Ye Jing: “绿色 GDP”项目技术组组长王金南：绿色 GDP 研究并未终止 (Interview with Wang Jinnan: Green GDP Research not yet Abandoned), in: 中国经济周刊 (China Economic Weekly), 2007 Issue 32, 42-43, 42.

central level that had a monopoly over almost all politically and economically relevant data. What's more, some statements of SEPA such as to inform the media of the integration of Green GDP into national statistical system, or environmental aspects into the cadre performance evaluation were criticized as "high profile" or "to exceed its authority"<sup>97</sup>. As a comprehensive accounting system that covers a wide range of fields, the calculation of Green GDP requires the engagement of many related ministries including statistics, agriculture, forestry, water conservancy, environmental protection and the cooperation among each other, thus SEPA's release of information on its own was considered as "not to be serious enough for a government department" and "not fair for other departments"<sup>98</sup>.

In order to understand the conflict more thoroughly, it is worthwhile to introduce the analysis of Susanne Weigelin-Schwerdrzik and Julia Ritirc. They tried to perceive the conflict from a behavioural aspect and noticed that the conflict fits into a pattern raised by David Lampton, which is commonly discussed in the context of bureaucratic procedures and decisions making processes in China.<sup>99</sup> Lampton argued that if there are two or more large, competitive bureaucracies or territorial administrations involved in the procedure, one typical form of authority relationship is bargaining, i.e. leaders bargain because they disagree and expect that further agreement is possible. In this case NBS stands for a large bureaucracy with a lot of influence and in the pursuit of keeping its monopolistic role by emphasizing its legitimacy of being the only source of data generation. As SEPA insisted on opening its own channels of data collection, NBS gradually feared its monopoly being threatened. Nevertheless, NBS was not able to openly oppose SEPA and the idea of Green

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<sup>97</sup> Pang Jiaoming (2005): Green GDP Disputations, 45.

<sup>98</sup> Ibid.

<sup>99</sup> Susanne Weigelin-Schwerdrzik and Julia Ritirc: Green GDP in China: a Discourse Analysis. Workshop paper for Research Project "How to measure sustainability? Concepts of Measuring sustainability in China in comparison with EU-countries" (OeNB - Jubily Fund project 13194, managed by the University of Vienna) (Vienna, 2009), 15.

GDP which stands very much in line with the CCCPC's concept of "scientific development". NBS had to enter into a bargaining process and wait for the time to regain its monopolistic position. "With the international discussion on the difficulties to come to an adequate formulation of a universally accepted scheme of Green GDP accounting becoming more and more prominent, NBS found good reasons to bring the project to a halt."<sup>100</sup>

### **B. Reluctance or Resistance from Local Authorities - central-local Relations**

Wang Jinnan mentioned his analysis on the Green GDP accounting and the release of the report 2005 on many different occasions. In an interview with the magazine Southern People Weekly, Wang Jinnan was invited to talk about the great obstacles for releasing the report 2005. Apart from the inconsistency between the two central bureaucracies, Wang clearly pointed out that local authorities have fiercely opposed the issuance of the report. "SEPA and NBS have even received formal letters from some provinces and cities clamping down on them and requesting not to issue the outcome of accounting," said Wang.<sup>101</sup> Especially for those provinces that follow such a development model with high energy consumption and high pollution, "to subtract the costs of environmental destruction means a huge fall in the quality of economic growth, sometimes zero or even negative growth."<sup>102</sup> Especially the greater losses from pollution and higher deduction from the GDP indicator that the report 2005 indicates, was terrible from the perspective of many local officials to their work performance and career promotion.

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<sup>100</sup> Ibid.

<sup>101</sup> Zhou Xuan: 王金南: "绿色 GDP"数据为什么不公开? (Interview with Wang Jinnan: Why was the Green GDP Report not released?), in: 南方人物周刊 (Southern People Weekly) 19/2007, Question 2.

<sup>102</sup> Ibid., Question 4.

“At present many regions still place GDP above all else,” Wang Jinnan commented.<sup>103</sup>

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<sup>103</sup> Ibid., Question 2.

## 4. Multum in Parvo: Challenges for Environmental Governance in China

*“Lack of awareness, insufficient planning, and a weak legal framework can be blamed for the severe environmental pollution in the country.”<sup>104</sup>*

--Wen Jiabao at the 6<sup>th</sup> National Environmental Protection Conference in 2006

### 4.1. Cadre Management Reform

Lü Xiaobo assigned the obedience or deviance of local officials to organizational development as he believed official deviance is “an outcome of choices made by individuals acting within certain structurally provided confines.”<sup>105</sup> Following his explanation, the next paragraphs are dedicated to trace back to the institutional settings of the Chinese cadre system and the monitoring system for cadre performance trying to understand the circumstances of policies from central government being resisted and sometimes even distorted at local levels.

#### 4.1.1. Leading Cadre Responsibility System

Since Reform and Opening Up policies have been adopted in 1978 in China, the central government has been increasingly cognizant of the fact that an efficient national civil service system is a pre-condition for economic development and modernization. As a result, a series of reform measures including decentralization of authority, introduction of employment contracts, setting up quantitative goals, pro-competition among local officials at the same administrative level, use of

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<sup>104</sup> n. N.: Premier sets 4 priorities for environment protection, Chinese Government's Official Web Portal, April 18, 2006. [[http://www.gov.cn/english/2006-04/18/content\\_257147.htm](http://www.gov.cn/english/2006-04/18/content_257147.htm), last retrieved on February 20, 2011]

<sup>105</sup> Lü Xiaobo: Cadres and Corruption: the Organizational Involution of the Chinese Communist Party (California 2000) 228.

economic incentives to encourage goal fulfilment have been integrated into the existing cadre management system.<sup>106</sup> Correspondingly, the monitoring system of cadre performance has become a highly sophisticated system combining clear and quantifiable performance targets with “monetary incentives and career jeopardizing punishments”<sup>107</sup>.

Since the 1990s, the cadre responsibility system (干部岗位责任制) and the political contract system (政治责任制) in policy implementation have been introduced into the old cadre management system and then widely adopted at local levels. As a crucial component of the cadre responsibility system, the signing of performance contracts (工作目标责任书) at local levels is worth mentioning here. Leading government officials (county magistrates or township/town majors) sign performance contracts with their direct superiors as their commitment to attain targets laid down by higher levels and to hold personal responsibilities for achieving those targets. Although Party secretaries are not direct signatories of the performance contracts, they are responsible for the fulfilment of policies as well.<sup>108</sup> So are deputy officials in direct charge of these policy issues. Also collective contracts are signed between one entity and its direct upper level (e.g. Contracts between village and township/town, or between town and county, signed by government officials upon content).<sup>109</sup> Although the content of contracts may vary from place to place reflecting not only the priorities of the central government but also those of local authorities, key elements covering all top policy issues are always contained. In order to facilitate the measurement of the policies implementation and the evaluation of the cadres' performance, the quantification of policies, or to say, the way of setting up quantifiable performance targets with

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<sup>106</sup> Maria Edin: State Capacity and Local Agent Control in China: CPC Cadre Management from a Township Perspective, in: *The China Quarterly* 173 (2003): 35-52, 37-38.

<sup>107</sup> Yang Zhong: Local Government and Politics in China: Challenges from Below (Armonk 2003) 139.

<sup>108</sup> *Ibid.*, 140.

<sup>109</sup> Maria Edin (2003): State Capacity and Local Agent Control in China, 38.

specific figures and quotas for each policy implementation has been applied to make the outcome objective and comparable. “Developing local economic growth” as a crucial issue, for instance, is contained in performance contracts with a series of clear targets including increasing local residents’ income, constructing infrastructure projects, and increasing the number of township and village enterprises. Specific numeric targets such as an economic growth rate figure or a growth range of investment are also contained in the contracts as hard indicators that local officials have to fulfil. Issues such as “promoting economic development”, “maintaining local social and political stability”, and “implementing population control/family planning” are three crucial policy issues declared by the central government as top priorities and bestowed with “veto power” in the performance evaluation of local government officials. The completion of targets related to these policies would bring out financial bonuses and political rewards, while the unsuccessful implementation of any of these veto targets means automatically a negative overall evaluation and their disqualification for further promotion, regardless of how excellent achievement might be in other areas.<sup>110</sup> Therefore, as a prerequisite for personnel decisions, local government officials usually highlight these crucial issues in their policy agenda and dedicate most of their efforts to carrying them out.

As mentioned before, the introduction of various reform measures into the cadre management system is intended to improve government efficiency. The application of incentive mechanisms is aimed at encouraging goal fulfilment, with economic incentives as one of the most powerful means. One common form that economic incentives take is bonus payment directly linked to the performance of local cadres. One point has to be mentioned that in this procedure, bonuses are

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<sup>110</sup> H. Christoph Steinhardt and Yihong Jiang: The Politics of China’s “Green GDP”, in: *China Aktuell* 5 (2007): 25-39, 32; also see: Yang Zhong (2003): *Local Government and Politics in China*, 132-136, 140.

neither reserved from state budget nor from higher authorities, but from the local governments themselves. The amount of bonuses depends heavily on the local financial condition.<sup>111</sup> In other words, the local cadres are expected to work hard for local economic growth and as reward, they are promised a share of the collective income - mainly from the local tax generation and fee collection.

Apart from the material rewards, career promotion/demotion is widely applied as means to assess and evaluate cadre efficiency of implementing policies at the local level by the higher authorities. According to the *Provisional Rules on Comprehensively Evaluating Local Party and Government Leading Groups and Leading Cadres (Trial)*<sup>112</sup>, the performance of the local leading cadres are appraised in the annual evaluation mainly in five aspects: virtue (德), capability(能), diligence(勤), achievement (绩) and integrity (廉). Among these five aspects, “virtue” and “achievement” are the direct indicators to check whether the cadres have implemented the policies and accomplished the goals. The performance contracts are the main benchmark for the evaluation in the aspect of “achievement”, since the quantifiable targets contained are easy to measure and compare. At the end of the annual evaluation, cadres are graded with “excellent, qualified, basically qualified or not qualified”. Those cadres receiving a positive grade successively will be rewarded with level advancement and salary raise, while the continuous receipt of negative grades might lead to administrative punishments or eventually to their release from the position.<sup>113</sup>

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<sup>111</sup> Maria Edin (2003): State Capacity and Local Agent Control in China, 41-42.

<sup>112</sup> The Organization Department of the CPC: 《地方党政领导班子和领导干部综合考核评价办法（试行）》(Notice on Provisional Rules on Comprehensively Evaluating Local Party and Government Leading Groups and Leading Cadres <Trial>), in: 关于印发《地方党政领导班子和领导干部综合考核评价办法（试行）》、《党政工作部门领导班子和领导干部综合考核评价办法（试行）》、《党政领导班子和领导干部年度考核办法（试行）》的通知（中组发[2009]13号）(Notice on the circulation of three trial provisional rules on evaluating party and government leading groups and leading cadres), Issue No. 13/2009 (2009).

<sup>113</sup> Yang Zhong (2003): Local Government and Politics in China, 147-148.



#### 4.1.2. Vicious Cycles: Generation of Local Protectionism

Now let us try to bring everything together. Leading local cadres are required to sign with their higher authorities a responsibility contract which contains concrete goals covering priority issues for them to achieve. In return, economic bonus and career promotion are promised as reward for their positive performance.

However, due to the structure of the national fiscal system, bonuses stem from local government income, whose main source is tax revenue levied from local enterprises. On the other hand, failure to fulfil the goals listed in the responsibility contract will negatively impact the overall performance evaluation of the cadres. A vicious cycle is therefore generated, which makes some cadres simplify the relations between local economic growth and their vital interests as equal to each other whereas environmental protection policies and sustained growth are regarded as detrimental to economic growth and personal interest. This helps to explain why in some regions, especially in underdeveloped areas, local governments are very often reported to stand firmly behind those enterprises with high pollution and sometimes even erect barriers to environmental administration work. As these local governments are highly dependent on taxation from a small number of industrial enterprises, they gain faster and more from promoting rapid industrialization than from promoting steady, sustainable development, regardless of the fact that this approach generally carries considerable environmental costs.<sup>114</sup> The introduction of the cadre responsibility system, especially the performance contract system therefore has an ambivalent outcome. On the one side, the performance contract system has contributed to the transmission and implementation of

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<sup>114</sup> C. Fred Bergsten et al.: *China's Rise: Challenges and Opportunities* (Washington 2008) 78.

certain policy goals at local levels; on the other side, it has also resulted in local governments concentrating too much on the priority policy areas such as tax revenue as well as economic development and intentionally neglecting other aspects like environmental protection and ecological balance that seem to conflict fiercely with priority goals stated in the contracts in a short term.

What's more, quite a number of case studies have shown that more than government, a wide range of actors from enterprises to farmers is involved in development administration at the local level. Benjamin van Rooij vividly illustrated the scenario of a complex chain of interdependencies among different actors including phosphorus mines, chemical fertilizer plants, chemical factories, local farmers, governments and even EPBs in the area of Tanglang River west of Kunming, and reluctance among people to the strict enforcement of environmental regulation. The conclusion drawn from this typical case is that when local livelihood relies to a large degree on the income generated by the production of some polluting enterprises, whether directly or indirectly, the issue of any anti pollution measure becomes particularly sensitive, since the chain reaction it brings about will not be easily welcome unless a 'cleaner' alternative is at hand.<sup>115</sup> For local citizens, to break the livelihood chain means to cut off their means of life, while for local authorities, they cannot afford to the attendant unemployment and potential social instability which is as essential as economic growth to their performance evaluation and career promotion. Under these circumstances, local governments choose to be selectively blind and citizens become silent about the polluting industries, which is nothing else but another vicious cycle, a tragic cycle.

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<sup>115</sup> Benjamin van Rooij, Implementation of Chinese Environmental Law: Regular Enforcement and Political Campaigns, in: *Development and Change* 37, 1 (2006): 57-74: 62-63

Indeed, for the environmental protection administration, local protectionism is by no means a new challenge. “Local protectionism is a ‘chronic headache’ for the environmental protection administration,” said Wang Jirong, then deputy director of SEPA at a press conference on improving air condition in Beijing before the 2008 Olympic Games in 2005.<sup>116</sup> Particularly at the grassroots level, the Environmental Protection Bureaus (EPBs) cannot fully execute their responsibilities due to the existence of so-called “indigenous policies” (土政策). “Any suggestion on production halt or restriction will first of all not be easily accepted and adopted by the local government; even if the suggestion is approved by the government, enterprises are not afraid of paying fines and continue their production.”<sup>117</sup>

The rise and decline of Green GDP in China provided a typical case study on the very common problems, both structural and conceptual, that widely exist in the country’s environmental governance.

#### **4.2. To Develop at Any Cost: Economic Miracle, Environmental Disaster**

*“This [economic] miracle will end soon because the environment can no longer keep pace...Acid rain is falling on one-third of our territory, half of the water in China’s seven largest rivers is completely useless; a quarter of our citizens do not have access to clean drinking water; a third of the urban population is breathing polluted air; less than a fifth of the [wastes] in cities is treated and processed in an environmentally sustainable manner.”<sup>118</sup>*

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<sup>116</sup> Ge Hongcai: 地方保护是环保大局劲敌 (Local Protectionism hinders Environmental Protection), 中国改革报 (China Reform Daily), June 3, 2005, 1.

<sup>117</sup> Ibid.

<sup>118</sup> Andreas Lorenz: SPIEGEL Interview with China’s Deputy Minister of the Environment Pan Yue: The Chinese Miracle will End Soon, in: Der Spiegel, May 7, 2005.

[<http://www.spiegel.de/international/spiegel/0,1518,345694,00.html>, last retrieved on February 24, 2011]

China's economy was centrally planned and supply-driven for decades. Instead of letting the market function, prices of basic resources and many commodities were set up at very low levels compared to the cost of production, and without relevance to the costs of pollution or depletion of natural resources stocks. The consequence of artificially-decided lower prices was little incentive to save on natural resources and no consciousness of treating pollutants before discharging them. This led to an economy growth with high resource consumption, low efficiency in resource use and low output, and laid a ground for further growth based on environmental degradation.<sup>119</sup>

Since Reform and Opening up in 1978, China has experienced its constantly rapid economic growth with the highest sustained growth rate in the world. According to the two national economic surveys of NBS (respectively in 1992 and 2006), an average annual GDP growth rate of over 9.6 percent between 1979 and 2004 has been reached, and in 2004 even 10.1 percent.<sup>120</sup> However, similar to the model adopted before 1979, this continuous spectacular development has been built upon heavy exploitation of natural resources far beyond the bearing capacity but with low level of efficiency and little environmental concerns that it would bring about direct negative impacts on environment. Both enterprises and governments are interested in gaining more benefit from expanding production and employment based on cheap inputs of material and labour rather than cleaning up production and improving competitiveness. The result of the unattainable path is

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<sup>119</sup> SEI and UNDP China: China Human Development Report 2002: Making Green Development a Choice (New York 2002), 43.

<sup>120</sup> NBS: 关于我国国内生产总值历史数据修订结果的公告 (Announcement of GDP Growth rate Revision 1979-2004), January 6, 2006 [[http://www.stats.gov.cn/tjdt/zygg/sjxdtzgg/t20060109\\_402370997.htm](http://www.stats.gov.cn/tjdt/zygg/sjxdtzgg/t20060109_402370997.htm), last retrieved on February 24, 2011]

clear: numerous nature resources have been consumed, large areas of arable land disappeared, environmental pollution has worsened and the ecosystem was destroyed, all of above has been serving to feed the continuing urbanization and industrialization.

The annual total energy consumption in China reached 3.10 billion tons of standard coal equivalents in 2009, among which coal consumption accounts for the great majority with 3.02 billion tons.<sup>121</sup> A comparison of annual statistical communiqués published by NBS indicated that the annual total energy consumption in China has surprisingly increased by 116 percent between 2001 and 2009. The growing reliance on coal and oil has resulted in the increase of smoke and dust as well as that of sulphur dioxide (SO<sub>2</sub>) emissions in the air and consequently in the steady decline of the air quality. The huge demand for industries and power plants, for households, as well as for the rapidly expanding transportation sector made China the current world's largest coal consumer and the largest SO<sub>2</sub> polluter of the year 2006.

As for water resource, China is also confronted with severe problems. Demand for water in agriculture, industry and daily domestic use is dramatically increasing while the general stock of water resources according to the statistics of NBS is diminishing year on year. Uneven water distribution, years of droughts caused by climate change might be blamed for the depletion of water resources; nevertheless, overutilization should be named as the main reason for water becoming scarce. By 2007, water usage rates for major river basins such as Huai, Liao and Yellow River have already reached 60 percent, the rate for Hai River accounts for 90 percent and for the Hei River even 110 percent, which largely exceeds the international warning level of 30 percent to

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<sup>121</sup> NBS: 中华人民共和国 2009 年国民经济和社会发展统计公报 (Statistical Communiqués of PRC on the 2009 National Economic and Social Development) (Beijing 2010), 22.

40 percent.<sup>122</sup> Meanwhile, the water system also suffers a great deal from pollution. Since 2007, NBS has incorporated the data collection from water quality monitoring of the seven major water systems in China into its annual communiqués. A comparison of three years' data shows that every year almost 50 percent of the water monitored was grade IV or worse (not suitable for human contact). Although the percentage of water with grade III or better has increased by 7.1 percent in three years, water with quality grade V (suitable only for irrigation) or worse has remained around 20 percent without evident improvement. The increasing amount of industrial and municipal wastewater and the untold direct dumping of waste into waters without sufficient treatment at the countryside have resulted in a countrywide lack of access to clean water - 90 percent of the waterways flowing through urban areas are contaminated, more than 300 million residents are yet to have clean water to drink.<sup>123</sup>

China's arable land also sharply decreased by around 88.3 million mu from 2001 to 2008<sup>124</sup>, among which land use for construction accounted for astonishingly more than half of the decrease (it reaches almost 77 percent in 2008). On the other hand, around 3.57 millions square kilometres of land in China are affected by soil erosion, which accounts for around 37.2 percent of whole land territory area. In particular, 83.1 percent of the affected area lies in the western region<sup>125</sup>, mainly caused by the loss of forests and the degradation of grasslands. In addition, an average of 1.6 billion tons of soil is swept into the Yellow River every year, of which 400 million tons is deposited

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<sup>122</sup> Jiang Gaoming and Gao Jixi: 中国高速发展的环境代价 (The terrible Cost of China's Growth), in: 中外对话 (China Dialogue), January 12, 2007.

[<http://www.chinadialogue.net/article/show/single/ch/684-The-terrible-cost-of-China-s-growth-part-one->, last retrieved on February 24, 2011]

<sup>123</sup> Elizabeth C. Economy: *The River runs black: the Environmental Challenges to China's Future* (New York 2004) 70-71; please also see: n.N.: *Ecological civilization*, China Daily, October 24, 2007, 10.

<sup>124</sup> MLR: 2008 年中国国土资源公报 (Communiqué on Land and Resources of China 2008), in: 中华人民共和国年鉴 2009 (Beijing 2009): 514 - 519, 514.

<sup>125</sup> Sun Honglie: 我国水土流失问题及防治对策 (Status of water and soil erosion in China, its prevention), Lecture for the Standing Committee of the Eleventh National People's Congress held on October 29, 2010 [[http://www.npc.gov.cn/npc/xinwen/2010-10/29/content\\_1602975.htm](http://www.npc.gov.cn/npc/xinwen/2010-10/29/content_1602975.htm), last retrieved on December 21, 2010]

on the riverbed downstream and resulted in an average uplift of riverbed by 2 – 4 metres and frequent flooding. Similarly the Yangtze River basin also suffers from a soil loss of 2.39 billion tons per year.<sup>126</sup> The disappearance of forests and grasslands, combined with the loss of soil has further accelerated the desertification and exacerbated the sandstorms in the northern region. More than that, the environmental changes have largely contributed to a vast loss of biodiversity in the country and challenged the ecosystems with destruction. Around 4,000 to 5,000 plant species are endangered or approaching endangerment in China, which accounts for approximately 15 to 20 percent of the country's total amount of plant species.<sup>127</sup>

At the same time, there is also a series of social and economic challenges accompanying the continuous environmental degradation. Since the 1990s, relocations of people have been repeatedly taken place as the result of the environmental degradation. More and more farmers and rural labours migrate into large cities not solely because they are looking for better opportunities but also because they are forced to abandon their homeland due to the increasing deteriorating environmental conditions.<sup>128</sup> Nevertheless, the ongoing massive urbanization and migration has unavoidably brought about great challenges to the overall standing capacities of the cities and worsened the inadequacy of access to public goods such as clean water and sanitation system. Public security and stability in the urban areas are put into question as a result of the limited capacity of local economies to provide employment opportunities. Moreover, the tension between the urban residents and migrants intensify further, with the former blaming the latter “for declining

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<sup>126</sup> Sun Honglie (2010): Status of water and soil erosion in China and its prevention; and MWR: 2007 年中国水土保持公报 (Communiqué on Soil and Water Conservation in China 2007) in: 中华人民共和国水利部公报 2009 年第 1 期 (总第 7 期) (Gazette of the MWR of the PRC 2009, Issue No. 1, Serial No. 7) 38-48, 39.

<sup>127</sup> Jiang Gaoming and Gao Jixi (2007): The terrible Cost of China's Growth.

<sup>128</sup> Elizabeth Economy (2004): The River runs black, 82-83.

living standards, growing pollution and rising crime rates.”<sup>129</sup>

Public health is increasingly affected by the environmental pollution. According to a survey in 30 cities and 78 counties conducted by the Ministry of Health in 2007<sup>130</sup>, the number of cancer cases throughout the country has dramatically increased, with a 19 percent rise in cities and a 23 percent rise in rural areas compared to 2005. The report jointly published by the World Bank and SEPA in the same year confirmed the critical state. The report shows that the death rates due to cancers of the digestive system (especially stomach and liver cancers) in China are much higher than world averages.<sup>131</sup> Experts blamed the pollution of the environment, especially the worsening water and air quality for the main reason behind the sharp increase of cancer incidence.

Meanwhile, complaints and protests are increasing at a dramatic rate. In 2006, SEPA reported in a national meeting with local environment protection officials that citizen complaints about environmental issues via public hotlines or in written form to officials are on the rise in recent years at a rate of 30 percent annually. More than 50,000 disputes over environmental pollution occurred in 2005, whereas 97.1 percent of all environmental mishaps involved the release of pollution, among which accidents caused by water contamination and air pollution account for more than 90 percent of the total amount.<sup>132</sup> In order to achieve more timely communication, more efficient environmental administration and better inspection on the local environmental authorities, an environmental protection hotline 010-12369 was opened to the public in June 2009. After half a year of operation, the complaints via this hotline and via internet alone reached 29,500 at the end

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<sup>129</sup> Ibid.

<sup>130</sup> Xie Chuanjiao: Pollution makes cancer the top killer, China Daily Vol. 27 No. 8447, May 21, 2007, 1.

<sup>131</sup> WB and SEPA: Cost of Pollution in China: Economic Estimates of Physical Damages (Washington, 2007), 7.

<sup>132</sup> Li Fangchao: Environment Issues addressed more urgently, China Daily Vol. 26 No. 8127, May 4, 2006, 2.



of the year.<sup>133</sup> Statistics shows that the majority of the complaints concentrated on issues relating to air, water and noise pollution, which accounts for 94 percent of the entire amount; while damage to public health and fear of potential negative impacts on daily life are the main sources of these complaints.

The CPC and the central government have been well aware of the crisis that the unsustainable development model triggers off. The environmental degradation is just one aspect. “This environmental problem has become one of the main factors that affect national safety and social stability,” said Pan Yue to China Daily.<sup>134</sup> The most contradictory part of this pattern in favour of economic growth at the cost of environmental degradation is that the economic costs of the overall environmental degradation in China, no matter in the form of resources scarcity, decrease of biodiversity, various pollutions, or damage to health, productivity losses and disputes caused by pollution, or even the costly, large-scale projects in order to ease certain resource shortages, already accounts for between 8 to 12 percent of the annual GDP<sup>135</sup> and would have to be deducted from the GDP, as partially experimented by the Green GDP accounting project. In the end, the economic growth will be stumbled by itself. The uncertain impact on the continuation of the economic growth, the threat to public health and increase of social unrest, as well as the potential of tarnishing the international reputation of the country, all these concerns combined can exert negative force on the rule of CPC and undermine its authority. Yet after plenty of guidelines have been adopted to embrace sustainable development and scientific outlook on development and a lot of efforts have been put into environment improvement, the central government still confronts a

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<sup>133</sup> n.N.: 盘点 2009: 举报出现哪些新特点? (Review of 2009: new Features of public Complaints), 中国环境报 (China Environment News), Apr. 2, 2010, 3.

<sup>134</sup> Li Fangchao (2006): Environment Issues addressed more urgently.

<sup>135</sup> C. Fred Bergsten et al. (2008): China's Rise: Challenges and Opportunities, 80.

crucial gap existing between expectation and reality.

### **4.3. Obstacles behind the Gap between Policy-making and Policy Execution**

In 2002, the United Nations Development Programme (UNDP) China published the China Human Development Report titled *Making Green Development a Choice*, which provides a comprehensive analysis of the environmental situation in China and the necessary measures to lead the country to a sustainable development path. The report blames the intensification of contradictions between the long-term sustainable development and the short-term economic revenues on the inconsistency between “the level of macroeconomic policymaking and the microeconomic level where day-to-day decisions actually take place”<sup>136</sup>. Thus 7 years later, the same problems remain unsolved and still keep hampering China from achieving sustainable development.

#### **4.3.1. GDP Worship**

The traditional perception in favour of the “get rich fast, clean up later” approach still maintain its strong influence among a substantial part of society, especially among leading cadres and industry managers at local levels.<sup>137</sup> Very often localities build up their economy beyond the local environmental carrying capacity, hardly thinking about the undesirable outcomes of this flunk mind of environmental over-usage - in form of pollution, pollution repair costs, public health problems etc.

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<sup>136</sup> SEI and UNDP China (2002): China Human Development Report 2002, 43.

<sup>137</sup> Ibid.

“Beijing’s message to local officials continues to be that economic growth cannot be sacrificed to environmental protection - the two objectives must go hand in hand.”<sup>138</sup> However, the message is interpreted by local governments in such a way that when environment protection contradicts economic development in short-term decision-making, there is no doubt that the former has to give way to the latter. This misconception is even supported by different incentives, both in economic and political form, which has been already discussed in the previous chapter. The fanatics for economic growth, or in other words, GDP worship of local governments, is however highly perilous, since it is mistakenly believed that a prospering economy automatically goes hand in hand with political stability and the economic growth will also generate financial resources to deal with the crisis, which works only under certain condition such as when the per capita gross national product reaches a relatively high level. Yet China is far below the condition line and simply running out of time.<sup>139</sup>

Undoubtedly, the Green GDP accounting project has challenged the local officials’ “answer sheets” to the central government by filling in striking GDP figures to a large extent. When it comes to adjust the traditional GDP index by quantifying the environmental degradation and pollution and subtracting some 3.5 percent from the original figure, the local officials fell into panic, since their performance judging in this way dims immediately. As a result, it is not difficult to understand why they made every endeavour to prevent the continuation of the accounting project.

#### **4.3.2. Weaknesses of Environmental Administration**

In addition, the constant lower administrative rank of the central environmental protection

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<sup>138</sup> Elizabeth C. Economy: *The Great Leap Backward?* Foreign Affairs, September/October 2007 [http://www.foreignaffairs.org/20070901faessay86503/elizabeth-c-economy/the-great-leap-backward.html, last retrieved on February 25, 2011]

<sup>139</sup> Andreas Lorenz (2005): SPIEGEL Interview with China’s Deputy Minister of the Environment Pan Yue.

institution and the general lack of capacity of EPBs at the local level also contribute to this inconsistency and hinder the implementation of the environment related policies.

### A. SEPA: from Group to Administration

Just three decades ago, there was not even one single government apparatus particularly responsible for environmental protection in China; rather, the responsibilities were shared among different apparatuses. One year after the UNCHE in 1972, China held its first National Environmental Protection Conference. One important outcome of the national conference was the formation of the Environmental Protection Leadership Group within the State Council to manage and coordinate national environmental issues.<sup>140</sup> Since then, the institutional evolution in the environmental protection sector has experienced several main phases. In the 1970s and 1980s, environmental issues were primarily considered as urban industrial issues; correspondingly, the Group was incorporated into the newly formed Ministry of Urban Rural Construction and Environmental Protection in 1982 and became the Environmental Protection Bureau (EPB). This incorporation implicitly indicated that environmental issues gained less attention of the central government in comparison of issues related to construction. In the wake of the second National Conference on Environmental Protection in 1984, the *Decision on Strengthening Environmental Protection Functions* was released by the State Council. One important conclusion of the decision was to establish the State Commission for Environmental Protection to coordinate environmental affairs among ministries and to manage and supervise the environmental protection tasks throughout the country, directly under the leadership of the State Council. The Commission was

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<sup>140</sup> Zhou Jingshao: 特殊年代里的一次会议——第一次全国环境保护会议回顾 (Review on the first National Environmental Protection Conference), 中国环境报 (China Environment News), September 21, 2009, 1; Please also see: Qiu Xin and Li Honglin: China's Environmental Super Ministry Reform: Background, Challenges, and the Future, in: Environmental Law Reporter (2-2009): 52-63, 53.

“composed of participants from more than thirty government ministries and bureaus”<sup>141</sup>, which reflected a revision of the way of thinking - from perceiving environment as separate sectoral issue to viewing it from an interdisciplinary perspective. At the end of the same year, the EPB was elevated to the National EPB. Although still affiliated to the Ministry of Urban Rural Construction and Environmental Protection, the National EPB actually functioned as the executive office of the State Commission for Environmental Protection. Four years later, the National EPB achieved its independence from the Ministry of Urban Rural Construction and evolved into the National Environmental Protection Agency (NEPA), bestowed with a vice-ministerial rank directly under the State Council. At the same time, the State Commission remained in operation until 1998; it was then dissolved as a result of the fourth administrative reform and NEPA was further lifted to the State Environmental Protection Administration (SEPA), with a status of ministerial level.<sup>142</sup>

At the time of the administrative reform aiming at a general government downsizing, the status of SPEA on the contrary was uplifted to a ministerial level and its scale was also expanded with its staff doubled. This change of status quo was supposed to provide SPEA with “more leverage in its dealing with other government departments and agencies and enhance its capacity to enforce environmental laws and regulations”<sup>143</sup>. However, SEPA still finds itself with little clout in inter-ministerial negotiations. As an administration, SEPA was not on the highest level within the administrative system<sup>144</sup>, which means that voices of SEPA could be completely ignored by those

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<sup>141</sup> Elizabeth C. Economy (2004): *The River runs black*, 96.

<sup>142</sup> Zong Bian: 新一轮国务院机构改革启动, 组建环境保护部不再保留国家环境保护总局 (New institutional reform of State Council launched, SEPA upgraded to MEP), *中国环境报* (China Environment News), March 12, 2008, 5; please also see: Qiu Xin and Li Honglin (2009): *China's Environmental Super Ministry Reform*, 53-54.

<sup>143</sup> SEI and UNDP (2002): *China Human Report 2002*, 76.

<sup>144</sup> As department directly under the State Council (国务院直属机构), SEPA held the rank of ministerial level. However, departments like SEPA differ from ministries and commissions of the State Council (国务院各部委) in the fact that they have no say on the Council's decisions, thus are not at “a cabinet level”. Please see: Standing Committee of the National People's Congress: *Organic Law of the State Council of China* (1982), art 2, 8, 11 for reference.

departments that are either at the same administrative level as SEPA or higher.

In reality, situations like that did repeat from time to time. One typical case to illustrate the awkward position of SEPA is the “Environmental Impact Assessment Storm” in 2005. In January 2005, in order to enforce the Law of Environmental Impact Assessment (EIA), SEPA issued a list of 30 major national construction projects that were in violation of the EIA Law and required them to suspend the construction until an EIA report could be provided for approval. Most of the projects were hydro- or thermal power plants which serve the purpose of alleviating the energy plight in the country, however, with enormous environmental consequences. With a total amount of more than one hundred billion Yuan of investment input, these projects were usually sponsored by state-owned enterprises such as the China Three Gorges Project Company and the State Electricity Corporation, which are part of the national political system and are even ranked at the highest governmental level. Located at the same level as SEPA or even higher, these corporations did not take environmental requirements into serious consideration and quite a few of them just started projects without conducting an assessment in advance. After all, it is not difficult for them to get an approval after-the-fact. Having these thoughts in mind, the Three Gorges Project Corporation which was in charge of three hydro-power plants projects on the black list completely ignored SEPA’s instruction and continued its construction.<sup>145</sup> After three months, it was reported that 29 out of these 30 projects resumed construction after having passed the environmental assessment.<sup>146</sup> The reaction from the media properly described the weak position of SEPA. They

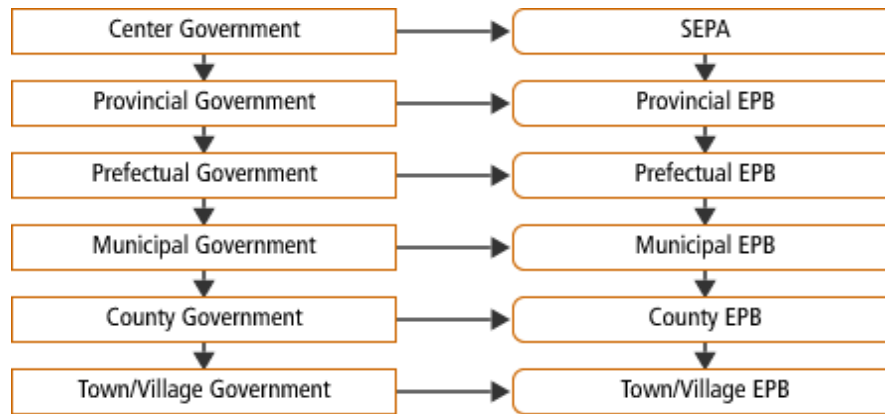
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<sup>145</sup> Ma Li: 环保风暴刮停 22 项目，三峡地下电站未停工 (“Environmental Protection Storm” halted 22 Projects while the underground Power Plant of Three Gorges Project continues to be under Construction), 新京报 (Beijing News), January 25, 2005. [<http://news.sina.com.cn/c/2005-01-25/03074934342s.shtml>, last retrieved on February 25, 2011]

<sup>146</sup> Huang Jianhua: 环保风暴开始，三峡地下电站通过环保审评 (“Environmental Protection Storm” launched, the underground Power Plant of Three Gorges Project passed Environmental Impact Assessment), 北京青年报 (Beijing Youth Daily), April 17, 2005, A2.

named this action “EIA Storm”, for the reason as it had started abruptly and ended hastily before it could follow through at the end.

## B. Constrained Capacity of local EPBs



(Figure 4: Environmental Administration Structure in China

Source: <http://www.wepa-db.net/policies/structure/chart/china/centralgov.htm>, last retrieved on February 27, 2010)

At the local level, the environmental administration is even weaker. Serious lack of capacity also strongly constrains the EPBs to implement their plans and execute their responsibilities. This is reflected in the insufficient number of core staff, the chronic lack of funding and of leverage over local governments as well.

In the current framework of the environmental protection sector in China, the main structure of the system is a multi-layer-hierarchy of management relationships between the central and local environmental protection sector (see figure 6, p.69 above). The so-called system of “dual leadership with local government base” is adopted for the management of EPBs nationwide.<sup>147</sup> Vertically, EPBs are set up at all levels - provincial, prefectural/municipal, and county/township level. EPBs at superior levels have a functional control over their direct inferiors at one level lower and decide standards or technicality of implementation; while governments hold the administrative control over the respective EPB horizontally at each level and determine issues such as the number

<sup>147</sup> Qie Jianrong: Interview with Zhou Shengxian: 国家环保总局局长周生贤: 完备环境执法监督体系 (Interview with SEPA Minister Zhou Shengxian: System of Law Enforcement and Supervision for Environmental Protection to be completed), 新华社 (Xinhua News Agency), February 15, 2006. [http://zhoushengxian.mep.gov.cn/zyhd/200907/t20090708\_154356.htm, last retrieved on February 25, 2011]



of personnel, budget allocation and office resources. Although the nomination of provincial EPBs leaders is decided by the minister of SEPA as a means of reinforcing the “vertical” dimension in the power structure as extra leverage, the ability of SEPA to influence local environmental administration remains very limited.<sup>148</sup> While nominally responsible to both SEPA and the local governments, the local EPBs seem to be more affiliated with local governments than loyal to SEPA. Unfortunately, at local levels the priorities are usually given to promoting and sustaining economic growth. As a result, EPBs are usually ill-equipped with personnel, have a limited budget and poor mobile capacity; this to a large degree weakens their ability and effectiveness. What’s worse, relying very much on the support from their respective governments, EPBs are constrained by the narrow mindedness of the local governments and suffer from interventions by the local governments in the policies implementation process.

As already mentioned in the campaign of “EIA Storm” in 2005, the EIA Law serves to incorporate environmental considerations into the developing process of projects and plans; and requires an EIA before the project starts its construction. However, interviews with local EPBs in Anhui and Jiangxi provinces showed that environmental impact assessment reports are gradually becoming the protection umbrella of polluters.<sup>149</sup> In the region of Fuyang City, located in Anhui Province, e.g. industrial parks have been established in most localities in this region in order to attract investment and construction projects. However, the majority of the projects under construction have not carried out EIA - to name just a few, 32 projects in Yiquan District of Fuyang City, 19 in Jieshou City, 14 in Yingdong District and 4 in Funan County. When asked about why EIAs had not been

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<sup>148</sup> ADB: Country Environmental Analysis for the People’s Republic of China (the Philippines 2007), 63-64.

<sup>149</sup> Wang Shengzhi et al.: 保环境还是保政绩 地方环保部门两头为难 (Environmental Protection or Political Achievements? Local Environmental Protection Bureau stuck in embarrassing Situation), 经济参考报(Economic Information Daily), September 29, 2006, 4.

conducted before the construction of projects started, then director of EPB in Jieshou City Zhang Fengxuan answered: “For those projects under construction in industrial parks, we do not think they will cause serious pollution, therefore did not ask for EIA in advance. Besides, it usually takes a long time to go through the whole EIA procedure. Considering that the construction of these projects needs to be finalized in short time, we therefore agreed that the construction could start ahead of EIA.”<sup>150</sup> It is unbelievable to hear that such an explanation comes from the head of a local EPB, yet Zhang’s words to some degree represent one perspective that is commonly shared among local EPBs. They reflect the situation of EPBs at the local levels. As an agency subordinated to the local governments, officials in EPBs seem to have only two choices: Either they “cooperate” with local governments to pass EIA easily, or if they strictly execute their responsibilities, then they are running the risk of offending local cadres and taking the blame of being “guilty” for hampering the local economic development. In some regions, there are even unspoken rules stating that the local EPB is not allowed to conduct inspection on enterprises unless permitted by the local government. The more economically underdeveloped the region is, the harder it is for EPBs to struggle and survive. Limited by the intervention of the local governments, the supervision of higher levels of the administration and petitions from local citizens, every step is difficult.

#### **4.4. Structural Defects in Environmental Governance**

Another obstacle exposed in the report of UNDP is related to certain structural defects existing in the environmental governance in China. In this context I would like to emphasize three aspects: the lack of integration of sectoral strongholds at the central level, the behavioural biases of local

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<sup>150</sup> Ibid.

authorities and the lack of public participation at the grassroots level.

#### 4.4.1. At Centre: “Turf War” among different Entities

As is well known, the form of administrative governance in China is highly stratified with “a centrally planned vertical power structure geared towards boosting production within a number of ministries, bureaus, agencies and departments”<sup>151</sup>. The strong sectoral stratification enables the government to act effectively in short-term central-down campaigns. However, when it deals with issues involving several administrative entities and cross-sectoral cooperation, this traditional administrative structure would put different bureaucratic entities into conflict with each other.<sup>152</sup> With an unclear division or sometimes even overlap of responsibilities, each single entity wants to safeguard *its* resource, strengthen *its* mandate and increase *its* regulatory power. Under this motivation, entities involved are more likely to regard each other as competitors rather than collaborators.

As in numerous cases, this pattern has been observed in the calculation of Green GDP, which helps to further explain why the collaboration between NBS and SEPA collapsed. As mentioned in the previous chapter, several environmental entities were involved in the calculation of Green GDP, among whom NBS and SEPA acted as the leading force. As central authority with cross-cutting mandate, SEPA needs to collaborate with other institutions to implement its responsibilities. This collaboration was unfortunately perceived by others as a form of authority expansion or turf war. Besides, being a “newcomer” at a lower administrative level and with less power, the mandate of SEPA to coordinate is frequently challenged. In fact, the reaction of NBS

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<sup>151</sup> SEI and UNDP: China Human Report 2002: Making Green Development a Chance, 68.

<sup>152</sup> Ibid., 68-69.

mirrors a typical problem in the field of environmental governance: With the absence of a powerful central apparatus, environmental governance will probably be turned into another battlefield for central institutions to pursue power and interests, and this will definitely weaken the resolution and efforts of the central government to deal with environmental issues.

#### **4.4.2. Local level: Inconsistency of Policies Implementation**

What's worse, in the current decentralized system, local governments are inclined to take advantage of the absence of a strong advocator and monitor at the central level in order to prioritize other interests.

In 2006, the Shanxi provincial EPB organized a poll in 2006 on “Environmental Awareness among Counties, Enterprises and Citizens” (山西省百县千企万民环境意识调查)<sup>153</sup>. The poll was undertaken from June to September 2006 and included 9,411 respondents from all walks of life in the whole province including normal workers, farmers, civil servants, entrepreneurs, students, free lancers etc. It took three months for the provincial EPB to conduct and conclude the poll; therefore a scrutiny of the final analysis will present us some thought-provoking outcomes. 93.19 percent of the respondents agree on the importance of environmental protection and on the hazard of environmental pollution on economic and social development; 91.38 percent of the respondents think that the development of Shanxi Province towards a harmonious society has been affected by the severe environmental pollution. 86.89 percent of respondents believe that environmental pollution has affected the social equity and further intensified the social conflicts. 79.73 percent of local officials consider environmental pollution as a new factor of social instability.

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<sup>153</sup> See: Shanxi Provincial EPB: 山西省百县千企万民环境意识调查结果 (Survey Results of the Poll on “Environmental Awareness among Counties, Enterprises and Citizens”), December 31, 2006. [http://www.sxhb.gov.cn/news.do?action=info&id=2580, last retrieved on February 25, 2011]

More than 82 percent of the respondents regard the government's efforts on environmental protection as insufficient and inefficient. While 93.31 percent of the normal citizen respondents think that environmental protection should keep pace with economic development, 91.95 percent of polled mayors/officials are concerned about the side effects of the increasing environmental protection on economic development. Most surprisingly, when asked whether an official should still stay in power if he built up his working performance with enormous amount of fiscal revenue upon the cost of severe environmental pollution, 71 percent of the public chose "no", but 90.8 percent of the officials answered "yes."<sup>154</sup> This sharp contrast not only shows the huge difference in preference between the local citizen and government officials, but also reveals the working ethics of local officials. For them it is acceptable to sacrifice the environment to achieve economic growth and fiscal revenue.

In her report on the enforcement of EIA Law during the 5<sup>th</sup> Session of the 11<sup>th</sup> Standing Committee of NPC on October 27<sup>th</sup> 2008, then vice chairperson of the NPC Standing Committee Chen Zhili raised her concern about the implementation of the EIA Law by pointing to three prominent problems which can be detected all over the country: the frequent violation of EIA Law, the weak and incomplete supervision of the local EPBs and the lack of unified national criteria for the assessing system. Chen named two companies as examples: Shandong Weiqiao Aluminum and Electricity Company built up an annual-1.6million-ton-alumina-production line without any environmental assessment approval, and later on illegally set up a second production line with an annual output of 2.4 million tons even after they had been investigated and ordered a suspension of the construction; Shanxi Zhenxing Group Co., Ltd. completed the construction of 2 × 20 kw thermal power units without carrying out EIA and restarted the operation after short suspension

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<sup>154</sup> Ibid.

required by the EPB.<sup>155</sup> These are by no means exceptional cases. Similar situations can be detected in different places all over the country. Chen further criticized that some local governments, driven by their economic interests, approved projects before they had even passed the environmental assessment. Some local EPBs had failed to supervise the implementation of environmental measures required by the assessment. What's worse, very few officials who have responsibility for those pollution cases were punished according to administrative regulations or criminal law. This not only damaged the authority and seriousness of the Law to a large degree<sup>156</sup>, but also put the credibility of the local governments and EPBs into question.

#### **4.4.3. The public: limited Role of Civil Society**

A third obstacle is the limited impact of civil society on the cause of environmental protection. Undoubtedly, public environmental awareness is obviously growing year by year, although ironically reflected, as mentioned before, by the dramatic increase of citizens' complaints about environmental issues via various forms at an annual rate of some 30 percent. Nevertheless, civil society still does not act as a constructive force in the environmental arena, which results from its delicate relation with the government. It is widely agreed that civil society should play a major role in the implementation of environmental laws and sustainable development "in terms of agitation, information, and the distribution of resources"<sup>157</sup>. During decades, a steadily increasing public participation can be observed in China and a stronger civil society is becoming a "new governance structure for environmental arena"<sup>158</sup>, mirrored by the more and more spontaneous involvement of

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<sup>155</sup> Sun Donghui: 违反环评法时有发生，部门监管责任待落实 (EIA Law Violations occurs Repeatedly, Responsibilities of relevant Departments for Monitoring to be Implemented), 中国经济时报 (China Economic Times), October 28, 2008, 2.

<sup>156</sup> n.N.: Legislator calls for better Enforcement of Pollution Law, Xinhua News Agency, Oct. 28, 2008. [http://news.xinhuanet.com/english/2008-10/28/content\_10266620.htm, last retrieved on February 25, 2011]

<sup>157</sup> Peter Rogers et al.: An Introduction to Sustainable Development (London 2008) 78.

<sup>158</sup> SEI and UNDP (2002): China Human Report 2002, 71.

citizens to assist EPBs with the implementation of environmental laws; an increasing coverage of mass media on environmental issues and the emergence of independent grassroots environmental activists and citizen organizations in forms of environmentally-oriented NGOs. Compared to an earlier stage of development, when they primarily focused on their educational function by raising environmental awareness among the public, nowadays media/NGOs have gradually switched to a more participative attitude as more freedom of action on relevant issues is given to them. Media, for instance, provide information and expose problems to the public so as to keep politicians and businesses accountable while activists and NGOs can assist EPBs with project inspection and supervision. Both of them can exert a positive influence on environmental change.

However, the government perceives this trend half with affirmation and half with concern. On the one hand, the CPC and the central government recognize the great potential of a broader public participation and accept this tendency gradually. EPBs, particularly SEPA, have realized their limited capacity and frequently expressed their urgent need of support from public participation in order to achieve effective environmental protection. Within years, we have continuously witnessed how the involvement of the public, either in form of public hearing or demonstration, successfully prevented irrational or illegal construction projects such as the construction project in Yuanmingyuan Imperial Garden or the establishment of chemical factory in Xiamen. On the other hand, the CPC is also anxious about the possibility of “a colour revolution stemming from environmental unrest and activism”<sup>159</sup>, triggered by the transparent information flow and mobilized by individual activists and NGOs. Therefore, the public participation in China is built on

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<sup>159</sup> Elizabeth C. Economy: Answers from Elizabeth Economy, Expert Roundtable – China: Choking on Growth, in: New York Times, August 27, 2007. [<http://china.blogs.nytimes.com/2007/08/27/answers-from-elizabeth-economy/>, last retrieved on February 25, 2011]

a tacit mutual agreement between civil society groups on one side and government entities on the other side<sup>160</sup>, within which the activities of civil society groups should be “constrained” and could be accepted by the government while the central government still conducts censorship on the media regarding controversial issues and holds strict control on the establishment and operation of NGOs.

At the same time, although environmental consciousness is awakening, the public still turns to be very cautious about their initiatives and is unwilling to challenge the government directly and speak out their concerns openly. For a long time, environmental governance in China has been always relying merely on the efforts of the government; this over-reliance on the government also results in the public being inclined to view environmental protection as the government’s responsibility.<sup>161</sup> This reluctance and insecurity of free expression is stamped by history, thus it will still need time to foster a civic sense in the general public.<sup>162</sup> In addition, a nationwide survey conducted by the China Environmental Culture Promotion Association (中国环境文化促进会) under SEPA in 2008 surprisingly indicated that public awareness on environmental protection and action still remains very low. Although 66.9 percent of the respondents think the country faces a serious environmental problem, only 13 percent of the respondents think that they were playing an important role in protecting the environment.<sup>163</sup>

Nevertheless, Qu Geping, then director of SEPA openly stated that “the degree of popular participation in environmental protection work is an important indicator of the success or failure

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<sup>160</sup> SEI and UNDP (2002): China Human Report 2002, 71.

<sup>161</sup> Tang Hao: NGOs and Government: a new Basis for Cooperation, in: China Dialogue, May 29, 2008. [<http://www.chinadialogue.net/article/show/single/en/2049-NGOs-and-government-a-new-basis-for-cooperation>, last retrieved on February 25, 2011]

<sup>162</sup> SEI and UNDP (2002): China Human Report 2002, 91.

<sup>163</sup> Sun Xiaohua: Public yet to read the Green of Environment, Urban Survey says Individual Involvement not Satisfactory, China Daily Vol. 28 No. 8645, January 8, 2008, 2.



of environmental protection in that country.”<sup>164</sup> Pan Yue hit even directly to the problem by stating that “Since environmental pollution poses an increasing threat to human health, environmental protection has become synonymous with human rights protection.”<sup>165</sup> Facing the fact that public participation in environmental protection in China still remains an ad-hoc reaction, the government should make more real efforts to allow more space for a broader public participation and seek for a benign interaction with civil society groups.

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<sup>164</sup> SEI and UNDP (2002): China Human Report 2002, 91.

<sup>165</sup> Sun Xiaohua (2008): Public yet to read the Green of Environment.

## 5. Step by Step: a single Spark can start a Prairie Fire

### 5.1. Revival of Green Accounting

The project of Green GDP accounting seemed to disappear from the public horizon, yet the calculation of annual Green GDP has never been suspended. As a matter of fact, the accounting has been continuing as a project in collaboration with the World Bank and even expanded to cover the conditions of 31 provinces. Almost one year after the “infinite postponement” of the release of *Green GDP Report 2005*, SEPA announced its cooperation with Yale University and Columbia University on the project of “China Environmental Performance Assessment at Provincial Level”.<sup>166</sup> The new project was based on the method of the Environmental Performance Index (EPI), whose focal point was shifted from environmental damage and pollution, as reflected in the previous project of Green GDP accounting, to the assessment of environmental performance of the local governments’ policies; correspondingly, new methodology, perspective and data sources have been adopted, thus different results are expected. Compared to the project of Green GDP accounting which had strong official background, the new accounting project would be only an academic research project. It would be free for release for reference as soon as it will have been finished and would not be linked to any evaluation system of cadres’ performance.

At the same time, NBS also carried out several projects successively - the natural resources accounting in cooperation with its Norwegian counterpart, the first national census of pollution sources together with SEPA, ecological forestry resource accounting with National Forestry

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<sup>166</sup> Ma Changbo: 绿色 GDP“退隐”幕后 (Stories behind the “Retirement” of Green GDP), 南方周末 (Southern Weekly) No. 1288, October 15, 2008, B10.

Bureau and joint water resource accounting with Ministry of Water Resource and the World Bank.<sup>167</sup> NBS chose to approach the green accounting through building up physical accounts and satellite accounts. A comparison of 10 years' annual *Statistical Communiqués of PRC on the National Economic and Social Development* (中华人民共和国国民经济和社会发展统计公报) from 2000 to 2009 shows that since 2004, the annual has eventually embraced environmental degradation caused by pollution, pollution treatment capacity and even COD/SO<sub>2</sub> emission load (only in the 2006 *Statistical Communiqués*) as satellite accounts into its nature resources and environment statistics.

On the other hand, one non-governmental Green GDP index – China Green GDP Index (CGGDPI, 中国 300 个省区市绿色 GDP 指数报告) has been released by the World Economic Research Centre of Beijing Technology and Business University on an annual base since 2007. The CGGDPI is based on method of investigating the service efficiency provided by natural resources and environment in each cities by measuring GDP created by the consumption of environmental resources (in this case water and gas) per unit. A final index for each city will be calculated through the comparison of its service efficiency to that of the benchmark city Beijing, the average of all indexes is taken as the final CGGDPI of the year.<sup>168</sup> However, all three CGGDPI discover incredibly low environmental service efficiency for most cities measured, thus indicating the extremely severe challenge for the present development mode.

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<sup>167</sup> Song Lei: 邱晓华否认“绿色 GDP 计划搁浅”(Qiu Xiaohua denied Green GDP Project stuck in Deadlock), 第一财经日报 (China Business News), June 14, 2006, A3.

<sup>168</sup> Ji Zhu et al.: 中国 300 个省区市绿色 GDP 指数报告 8 (CGGDPI 200), 中国贸易报 (China Trade News), August 3, 2008, 3 & 10; please also see: Qiu Xia and Zhang Duo: 专家指出: 中国城市绿色 GDP 总体水平偏低 (Expert said Green GDP Index in Chinese cities remain Low), 新华网 (Xinhua News Agency), September 24, 2007 [[http://news.xinhuanet.com/newscenter/2007-09/24/content\\_6786562.htm](http://news.xinhuanet.com/newscenter/2007-09/24/content_6786562.htm)]

## 5.2. Elevation of SEPA to MEP

In March 2008, the proposal from the State Council for its reshuffle through the creation of a “super ministry system with comprehensive responsibilities” (职能有机统一的大部门体制) was approved by China’s Eleventh NPC.<sup>169</sup> The super ministry reform refers to the merging of the existing ministries or departments that have similar authority or related functions into a new entity with expanded jurisdiction and responsibilities. It is meant to minimize negative effects caused by overlapping governmental responsibilities, cross-departmental directives, and bureaucratic infighting, as well to make comprehensive management and coordination from multiple perspectives possible. Since the interdepartmental tasks will be then turned into intradepartmental issues, administrative efficiency is increased while the costs of policy-making and execution are reduced.<sup>170</sup>

The result of the super ministry reform was the emergence of five super ministries. Encouragingly, SEPA not only remained the sole department that still retains its organizational structure and governmental responsibilities but was further elevated to the Ministry of Environmental Protection (MEP). With the administrative level upgraded to ministry status at the full cabinet level, MEP is granted with more power, more staff and funding, but also has to take over more responsibilities and gains power in national policy-making. The elevation can be interpreted as a strong signal of the central government’s determination towards environmental protection.

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<sup>169</sup> State Council: 2008 年国务院机构改革 (Instruction on Institutional Reform of China State Council 2008), January 16, 2009 [http://www.gov.cn/test/2009-01/16/content\_1207014.htm, last retrieved on February 25, 2011]

<sup>170</sup> Qiu Xin and Li Honglin(2009): China’s Environmental Super Ministry Reform, 52; please also see: People’s Daily Special: 聚焦中国：大部制改革 (Focus on China: Super Ministry Reform) [http://gov.people.com.cn/GB/46728/114889, last retrieved on February 25, 2011] for reference.

### 5.3. Environmental Protection: Cornerstone of Sustainable Development

*“Based on the bearing capacity of resources and environment, development foundation and potential, and full play of regional comparative advantages, by strengthening weaknesses, so as to form a pattern of balanced structure of regional development with features of clear development zoning, well interaction among regions, fairly allocated public services and shrinking gap of living standards among regions.”<sup>171</sup>*

-- The Outline of the 11<sup>th</sup> Five-Year-Plan

The proposal of forming “development priority zones” (全国主体功能区规划) was first shaped in the outline of the 11<sup>th</sup> Five-Year-Plan in 2006. Its core idea is that all regions of the country should be eventually evaluated and classified upon their resource and environment bearing endowment as well as upon the overall condition of economy and population, and formed into new zones according to certain categories such as: national or provincial development-optimized, development-prioritized, development-restricted and development-prohibited zones. Parallel to the administrative division in the country, this land “re-planning” will undergo at a functional dimension and is stemmed from the concerning observation of widely-adopted economic growth model that overlooks the capacity of the environment.<sup>172</sup> Development models and policies will differ for each category by emphasizing their own features and strictly restricting development according to the bearing capacity of the natural environment. The proposal was discussed and approved by the State Council in June 2010.

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<sup>171</sup> CPCCC: The Outline of the 11<sup>th</sup> Five-Year-Plan for National Economic and Social Development of the People's Republic of China Profile (Beijing 2006), Chapter 5, 20.

<sup>172</sup> Yan Bei: 全国主体功能区规划9月初立, 国土分区将终结 GDP崇拜 (Development of Priority Zones launched in September, End of GDP Worship through Land Planning), 中国联合商报 (China United Business News), September 3, 2007, 004.

For the central government and the CPC, the formation of “development priority zones” is part of an important strategic plan for the implementation of the “Scientific Outlook on Development”. The central government sees that the indiscriminate pursuit of economic growth still has an enormous influence at the local level and GDP growth is still commonly regarded as an essential benchmark of local development. Although the central government has repeatedly underlined that environmental protection as a basic national policy should be handled seriously, the implementation turns out to be far from satisfactory. It hopes that through its active regulation and control local cadres would give up the unhealthy competition of narrowing the numerical gap reflected by GDP ranking. Moreover, it is intended by the central government that the development pattern will be transformed into one that accords with the local conditions and respects the environment, and eventually the “Scientific Outlook on Development” could be thoroughly implemented from top to bottom and coordinated in a way that allows achieving a balanced development in the whole country.

The differentiation in policies implementation will automatically require further reform measures with regard to performance assessment and the evaluation system of local cadres. In the new system, the performance of cadres would be assessed and evaluated from an all-around perspective and aspects such as pollution reduction, energy conservation and independent innovation capacity would gain more importance.<sup>173</sup> Quite a few local governments consider this tendency as an excellent opportunity and have already taken various actions aiming at a “Green Rise” (绿色崛起) – one concept referring to the development model which emphasizes both the structural transformation of the economy and the protection of the ecological environment and frequently

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<sup>173</sup> Ibid.

used by local governments in the central and less developed regions<sup>174</sup> as most efficient means to catch up with those in the eastern, costal region without repeating the mode of “first polluting and then treating”.

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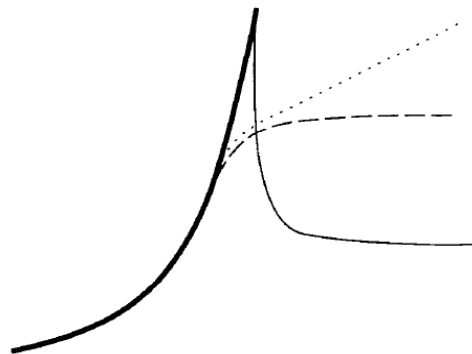
<sup>174</sup> The six provinces in the central regions including Henan, Hubei, Hunan, Anhui, Jiangxi and Shanxi are the most active promoters of a “Green Rise” development path. For reference please see: Zhang Lixin, Shen Yang and Lin Yanxing: 绿色崛起: 中部地区将改变中国经济的区域格局 (Green Rise of Central Region will change the Regional Framework of China's Economy), Xinhua News Agency, September 26, 2010. [[http://www.jx.xinhuanet.com/news/2010-09/26/content\\_21001603.htm](http://www.jx.xinhuanet.com/news/2010-09/26/content_21001603.htm), last retrieved on December 21, 2010]

## 6. Concluding Remarks

*“Unless you pile up little steps, you can never journey a thousand miles; unless you pile up tiny streams, you can never make a river or a sea.”*

-- Xun Zi (ca. 312-230 BC)

The last four decades witnessed a rapid expansion of the concept “sustainable development” in the international development arena. A sequence of essential documents has been selected for scrutiny, recording the progress along this procedure and building a solid foundation for its conceptualization. If *The Limits to Growth* was still thought to be an act of seeking popularity through shocking statements at the year of its publication; twenty years later, critical principles for the achievement of sustainable development have been clearly defined, and a concrete action plan for all mankind has been established during the first Earth Summit.



(Figure 5: Trajectories of three development paths)

Source: Carl Mitcham (1995): *The Concept of Sustainable Development*, 318)

The illustration of Carl Mitcham (Figure 5, p. 85 middle) helps to understand the evolution of the concept. “The limits to growth” thinking demonstrated that the exponential increase of nothing is unlimited even it seems bestowed with indefinite potential at a certain point (shown as dark solid



rule in graph). This exponential growth will lead to a catastrophe (thin solid rule) and therefore mankind is warned of what should not be done in order to prevent the situation from a sudden collapse. At the same time, an alternative solution is indicated (dashed rule), namely a no-growth or steady state economy, which has been advocated by ecological economists such as Herman Daly. The shift from the limits of growth into the pursuit of sustainable growth, as well as the corresponding proposal of sustainable growth provides a third option of transforming the exponential curve through a continued more moderate path (dotted rule). In this sense, *Our Common Future* is generally regarded as an important turning point as it suggested a holistic way of thinking - to bridge “the limits to growth” and “the need for development” and explore what human beings should do to integrate these two aspirations and realize sustainable development. Standing at the crossroads towards the future, mankind is urged to make a choice – walking along the current road to a sudden collapse, or turning to a sustained development path? The answer is clear and firm: for sustainable development. Today the term “sustainable development” has already become a buzzword that can be heard every day in every sphere, whereas debates around its understanding and interpretation have never stopped. The definition provided in *Our Common Future* leaves enormous space for its further development. The entry point is to approach the concept from an interdisciplinary perspective and to understand the interrelations among the three dimensions of sustainable development: economic, environmental and social aspects. International organizations such as the UN, the World Bank, and OECD have made tremendous contributions to the conceptual completion of sustainable development and the standardization of its measures, and meanwhile the mobilization for its achievement at all levels. At the international level, general guidelines and detailed objectives have been gradually set up in various conferences and have been offered to their member states for reference. Each member state is encouraged and assisted with

national policy making and agenda formulation that fits into the international framework.

Accordingly, China has completed its own agenda and dedicated itself to the experiment of a sustainable developmental path that accords with its national conditions. For China and its central government, it was exactly at the period of hard transition. The country has benefited a lot from the adoption of Reform and Opening Up policy since 1978, reflected in the constant spectacular economic growth during the last three decades and a large part of its population being lifted out of dire poverty. Nevertheless, undue emphasis on economic development has also lead to severe deficiencies in other aspects. No matter the centrally-planned, self-supporting and self-sufficient economic pattern before 1978, or the market-oriented, foreign trade and rural industry dependent structure developed since then, they both have been build on the heavy exploitation of natural resources and little respect for the environment. The over-exploitation of natural resources results in a dramatic depletion of them; while industries relying on huge energy consumption with low efficiency brings out terrible pollution and immense negative impacts on the environment. Apart from the severe environmental deterioration, public health is also seriously affected, reflected in the increasing rate of diseases induced by pollution. In addition, the gap between the rich and the poor is widening owing to the rapid economic growth, and the distributional inequality growing. Increasing environmental disputes and small- to middle-scale tensions at the local level caused by various factors can be heard from time to time. All these impair national safety and social stability, and undermine the authority of the Communist Party of China and the central government. The central government is clearly aware of this, thus is desperate to find a solution to ease the tension.

In this context, the formulation of the “Scientific Outlook on Development” as well as its extension under the concept of “Building a Harmonious Socialist Society” gradually took shape,

both as response to the international trend and as answer to the internal criticism and means of gaining public credibility. As demonstrated at the very beginning of this thesis, the rise of the Green GDP accounting project in China accords with its historical background. As one of the embodiments of these concepts, the accounting of Green GDP is aimed to sketch a picture closer to the genuine development status of China by exploring the relations between the economy and the environment; and help to adjust the current development model towards a sustainable one, where the interrelations among men, nature and society would be profoundly changed. However, launched in 2004, the official Green GDP accounting project in China came to a premature end after three years of challenging and controversial exploration.

Official explanations have so far focused on the technical tier of Green GDP accounting. The lack of a systematic theoretical framework and the fact that no consensus was achieved on a statistical method among the project leading team have been frequently named as major barriers for the accomplishment of Green GDP accounting. Nevertheless, the intensive study of interviews of concerned personnel unveiled clues that point to underlying causes. Firstly viewed from the perspective of behavioural analysis in bureaucratic procedures in China, it was the power struggles between the two leading authorities in the project SEPA and NBS that lead to a rupture in the cooperation. As cooperation deepened, NBS gradually perceived the active involvement of SEPA as competitive and threatening. Technical constraints hence became a reasonable excuse for its reluctance in further supporting the new project and final split. At the same time, the attitude change of the local authorities further worsened the situation. Since the adjustment of the Green GDP index means subtraction from the original GDP in various degrees, quite a few local officials are afraid that this subtraction would affect their work performance and career promotion

negatively and turned to fiercely oppose the project as well as the further report release.

As Qiu Xin and Li Honglin put it, in an economy-development-oriented political atmosphere, the environmental protection sector is of lower priority.<sup>175</sup> The current cadre management system in practice and its economy-development-oriented tone is to be blamed for “contributing” to the local government officials’ overstress on the economic development, because they gain legitimacy by promoting economic growth, increasing incomes, ensuring low unemployment rates rather than preventing pollution and improving the environment. This to a large degree has resulted in the persistence of GDP worship among local governments and of local protectionism.

The rise and decline of the Green GDP accounting project actually mirrored the status quo of environmental governance in China. Environmental responsibilities are usually shared among agencies and levels of government. The traditional strong sectoral stratification in administrative structure to a certain extent hampers the efficiency of environmental management and tends to intensify intra-sectoral competition. At the local level, EPBs find themselves woven into a complicated structure with dual affiliation. The four-layer-hierarchical structure within the environmental protection sector decides that each inferior EPB stands under the instruction and supervision of the EPB at a superior level; meanwhile EPBs rely very much on the administrative support from the people’s government at the same level. On the one hand, EPBs are easily interfered by local governments in their work; civil society groups, on the other hand, have failed to assist EPBs with their responsibilities in an effective way. The lack of effective regular mechanisms has facilitated the inconsistent behaviours of local governments that run counter to the policies of the central government, is therefore regarded as one major obstacle to the efficient enforcement of

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<sup>175</sup> Qiu Xin and Li Honglin (2009): China’s Environmental Super Ministry Reform, 55.

environmental policy in China.

Yet the implementation of the “Scientific Outlook on Development” and the pursuit of “sustainable development” should not and will not remain only rhetoric. Attempts have never been ceased to experiment with national green accounting. Various successors of the Green GDP index have been introduced and conducted by different departments and institutions, distinguishing themselves in approaches and methodologies from each other. None of them is entitled as “with official background”; thus all of them are free for release without scruples. At the same time, a series of measures such as lifting SEPA up to MEP and proposing the formation of “development priority zones” have been taken to prioritize environmental governance in national policy-making procedure, to abolish GDP worship among local governments and to advocate development in lines with local conditions. These measures will certainly generate a new round of discussions on coordinated development, on the formation of new values and on restricting the cadre management system etc.

The Green GDP accounting project in 2004 has been frequently described as a flash in the pan for its once massive media coverage and its sudden fade-out from the public sight. Nevertheless, the project made its contribution in raising public awareness for environmental issues and sustainability concerns. The end of calculating Green GDP has actually ignited even more debates of Green GDP accounting in China. The systematic defects exposed during its execution also lead to hot debates on a wide range of reform measures.

Nothing is more encouraging than the recent messages that the Green GDP accounting project is returning with its new look. In the beginning of 2010, it is reported that Green GDP accounting is

expected to return back to the public in its new appearance as the “Resources and Environmental Statistical Indicators System” lead by NDRC. The new framework is currently in the process of sectoral countersignature and waiting for its submission to the State Council for approval.<sup>176</sup> Considering the difficulties faced during the period of the Green GDP accounting, both researchers and decision-makers have turned to a more pragmatic approach, namely to establish a statistical indicators system of natural resources, environment based indicators and ecological quality indicators. Instead of monetarizing the environmental pollution and ecological damage, the new statistical indicator system puts emphasis on presenting the total amount of natural resources such as air, water, forest; and tries to reflect the status quo of resources and environment, thus showing the sustainability of development. As for environmental pollution accounting, the method adopted in the new indicator system is to combine emission indicators and economic output of each sector together and calculate the unit emissions intensity of economic output, which according to Gao Minxue - one of the core members of the Green GDP project team - also belong to the contents of green national economic accounting.<sup>177</sup> Nevertheless, the new indicator system might also be confronted with the similar problem as the Green GDP accounting in terms of its political function of measuring the sustainability of local governments’ performance and changing the misconception of GDP worship among local cadres. However, from a short term perspective, the new indicators system is aimed to be used at state level as reference for macro decision-making at a short-term. For a long-term, the application of the new system would gradually facilitate local governments to establish their own corresponding indicators system. More recently, on the occasion of the local People’s Congress, the governors of Jiangxi and Hunan provinces respectively

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<sup>176</sup> Feng Jie: 绿色 GDP 变身 (Transformation of Green GDP), in: 南方周末 (Southern Weekly) No. 1356, February 9, 2010, B12.

<sup>177</sup> Ibid.

put forward that the Green GDP accounting will be re-launched in the two provinces.<sup>178</sup> While Jiangxi province aimed to introduce a series of new measures including Green GDP accounting into its Poyang Lake eco-economic zone as pilot reform, the emphasis of Hunan province was laid on the improvement and perfection of the current developmental policies and the supporting mechanism by incorporating the Green GDP index into the cadres' evaluation procedure. Although both governments acknowledged frankly that the technical difficulties still remain the main obstacle of the Green GDP accounting, they believe in the positive interplay between economy and ecology and are prepared for long-term explorations.

By the end of the thesis, the author has reasons to believe that the exploration of Green GDP accounting is still promising in China. Yet the implementation of a greened GDP indicator system at the national level will not be possible without fundamental structural reform in the environmental governance and in the cadre management system. For the Green GDP accounting, there is still a long journey ahead to go and heavy tasks to solve.

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<sup>178</sup> Ding Jun: 沉寂 5 年 地方重启绿色 GDP 核算 (Green GDP Accounting Re-launched at Locales after 5 years' Silence), 21 世纪经济报道, February 18, 2011, 07.

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