Sustainable Development: International Cooperation and International Organisations.

(1) The Concept (June 24, June 25)
(2) Stakeholders/Actors (July 1)
(3) International Conferences (July 1)
(4) Students‘ Presentations (July 1-2, 15-16)
(5) Students‘ Presentations (July 22-23)

Prof. Berthold Kuhn, Summer 2013

SPA/SPP, Xiamen University

Sustainable Development 可持续发展 International Cooperation and International Organisations.

First Session: The Concept

Prof. Berthold Kuhn

Summer 2013

SPA/SPP, Xiamen University

Three Questions

1. How did the concept of sustainable development evolve? Definitions, conceptual evolution, context.
2. What other concepts and terms are related to it and what is the meaning of some of these key terms and concepts: Tragedy of the Common, Green Economy, Blue Economy, Green Growth?
3. Which debates international agreements, national policies and projects shape the debate on sustainable development?

First Question

1 a. How did the concept of sustainable development evolve?

1 b. Definitions, conceptual evolution, global context and China specific context

Sustainable Development: Definitions and Dimensions

- to **sustain** the **ability** for development (of future generations):
- *Sustainability* **and** *Development*
- Nature, people, systems and institutions
- People: health, education, live-work balance
- Systems: financial systems, political order
- Nature: human beings exist in a sensitive, narrow framework

World Conservation Strategy

- Launched in 1980s by IUCN- International Union for Conservation of Nature and Natural Resources and WWF – World Wildlife Fund
- Focus on: **human use of the biosphere**
- United Nations Conference on the Environment in Stockholm (1972) with participation of P.R. China after accession to UN.
- Basic needs: food, shelter, clean water

Report: Our Common Future

- Our Common Future" (1983-**1987**): World Commission on Environment and Development (WCED) or Brundtland Commission: "meeting the needs of the present without compromising the ability of future generations to meet their own needs".
- Brundtland was the former Prime Minister of Norway and the Chairperson of the Commission appointed by Javier Perez de Cuellar, former Secretary General of the United Nations.
- The Commission was established by a UN Resolution in 1983 and worked until 1987

Evolution of the Concept

- balance between resource consumption and reproduction
- First reference forestry in the 12th to 16th century
- Sustainable Yield in Forestry (German: Nachhaltiger Ertrag).
- Strong influence of civil society and Non-Governmental Organisations from different countries and regions, e.g. IUCN, WWF, FON, Centre for Science and Environment (Anil Agarwal, Sunita Narain).

Towards Sustainability

- Natural: Land, sea,, air, eco-systems
- Built: buildings and cities, infrastructure
- Human: health, skills, knowledge and values
- Social: formal and informal connections, communications and institutions

Targets for Policy Makers and Institutions

- Energy, Carbon and Climate Change
- Water consumption
- Use of Land: Planning, Design and Development
- Material Flows: Procurement, Toxity and Pollution, Waste Disposal and Recovery, Recycling

Source: UNEP 2012: Greening Universities Toolkit

Promoters of the Concept of Sustainability

- Multi-Level, Multi and Cross-Cultural and Transdisciplinary Inputs
- Role of the United Nations
- Role of Conferences
- Role of civil society, NGOs
- Global Concepts with global and local actors

Example: India

- from Civil Society to NGOs to International Organisations to Governments to Business
- Early Activists: Anil Agarwal and Sunita Narain (editors) 1985, State of India's Environment 1984-85: The Second Citizens' Report, Centre for Science and Environment, New Delhi.
- Centre for Science and Environment 1987, The Wrath of Nature: The impact of environmental destruction on floods and droughts, New Delhi.

Further Evolution of the Concept

- Sub-terms: sustainable agriculture: agroforestry, mixed farming, multiple cropping, crop rotation
- United Nations 2005 World Summit: "interdependent and mutually reinforcing pillars" of sustainable development as economic development, social development, and environmental protection.
- http://unngosustainability.org/: NGO Sustainability attends and reports on meetings relevant to renewable energy, economic, environmental and social development, as well as climate change and women's empowerment.

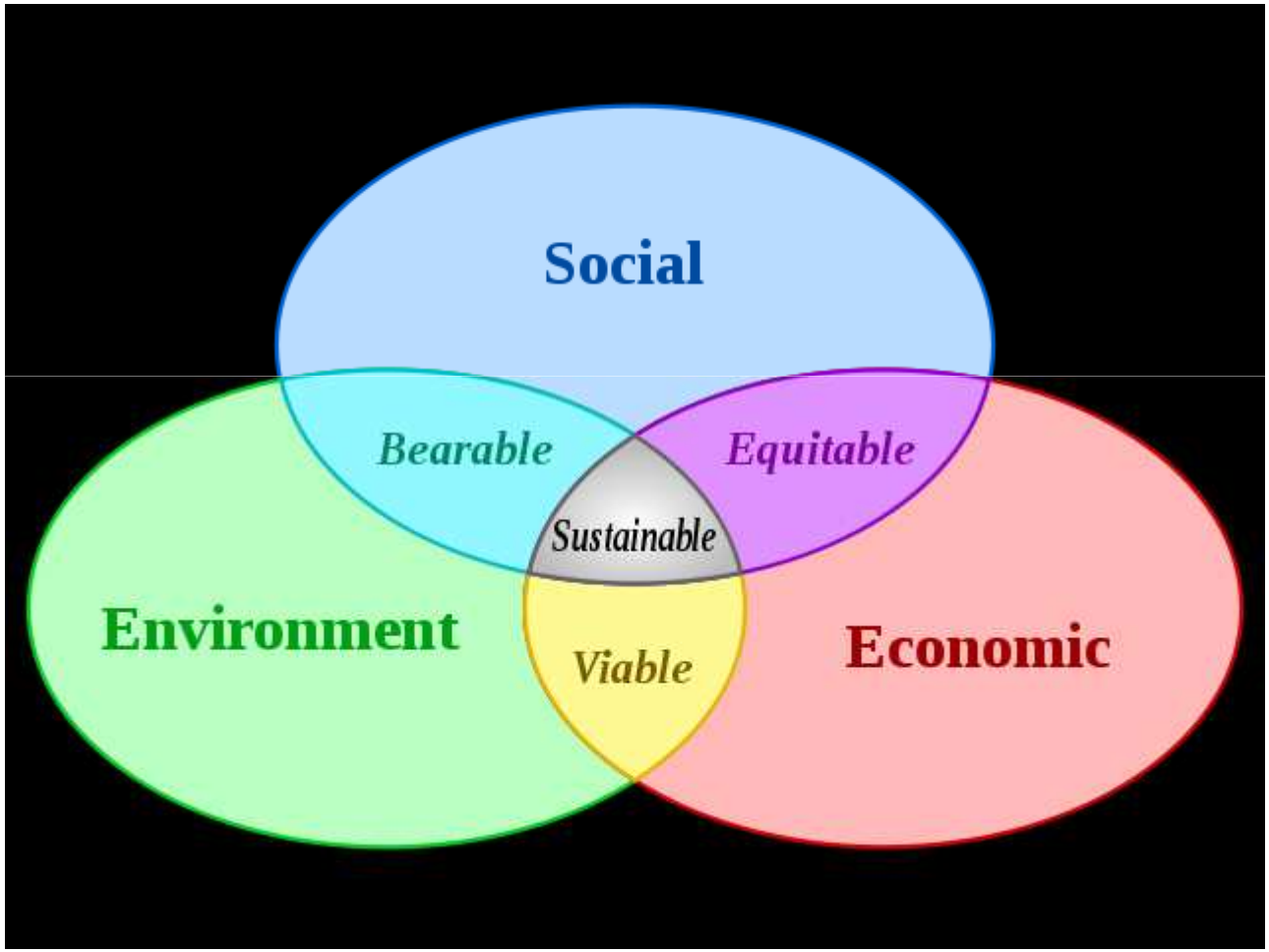
Criticism on the Concept of Sustainability

- Vagueness of the concept (Luc Ferry)
- “More charming than meaningful”
- Hidden form of protectionism (Sylvie Brunel)
- Oxymoron: a speech/idea /statement involving contradictions (open secret, original copy)

Sustainable development goals

One of the main outcomes of the Rio+20 Conference was the agreement by member States to launch a process to develop a set of Sustainable Development Goals (SDGs), which will build upon the Millennium Development Goals and converge with the post 2015 development agenda

Sustainable Development: the cross-over concept



Source: Johann Dréo (2006), wikipedia (en).

Features of the Sustainability Concept: Nature at Risk

- Global Commons: the earth's *unowned* natural resources, such as the oceans, atmosphere, and outer space.
- The global commons includes those parts of the Earth's surface beyond national jurisdictions .
- Global warming, climate change.
- Human-induced alterations of the natural world.

Environmental Protection and Climate Change

„Industrial catch-up first, environmental clean-up later“: depletion of natural resources, global warming, health hazards

Some issues: deforestation, pollution e.g. silted and polluted rivers, endangered species, waste management (e.g. toxic waste), Water management (sewage water treatment), noise, global warming.

Which kind of international cooperation, policies and instruments? Command-and-control measures and/or Economic instruments based on incentives

Environmental Issues in China

Taihu Algae Crisis (Jiangsu, Zhejiang province, Wuxi, Suzhou)

- Severe algae outbreak end of May 2007
- One billion tons of wastewater, 450,000 tons of garbage and 880,000 tons of animal waste were dumped in the shallow lake in 1993 alone.
- Wu Lihong Case, Closure of Factories

Songhua River Pollution Crisis

- Explosion in November 2005 in Jilin City, sexi people dies
- Toxic spill
- Information retained
- Drinking water crisis,
- Harbin protests

Reference:

- CHEN Gang 2009: *Politics of China's Environmental Protection. Problems and Progress*, Singapore: World Scientific Publishing

New Issues: Climate Change

- **Climate Change** — Changes in regional climate characteristics, including temperature, humidity, rainfall, wind, and severe weather events.
- **Global Warming** — An overall warming of the planet, based on average temperature over the entire surface.
- Whereas "global warming" refers to increasing global temperatures, "climate change" refers to regional conditions.

Climate Change

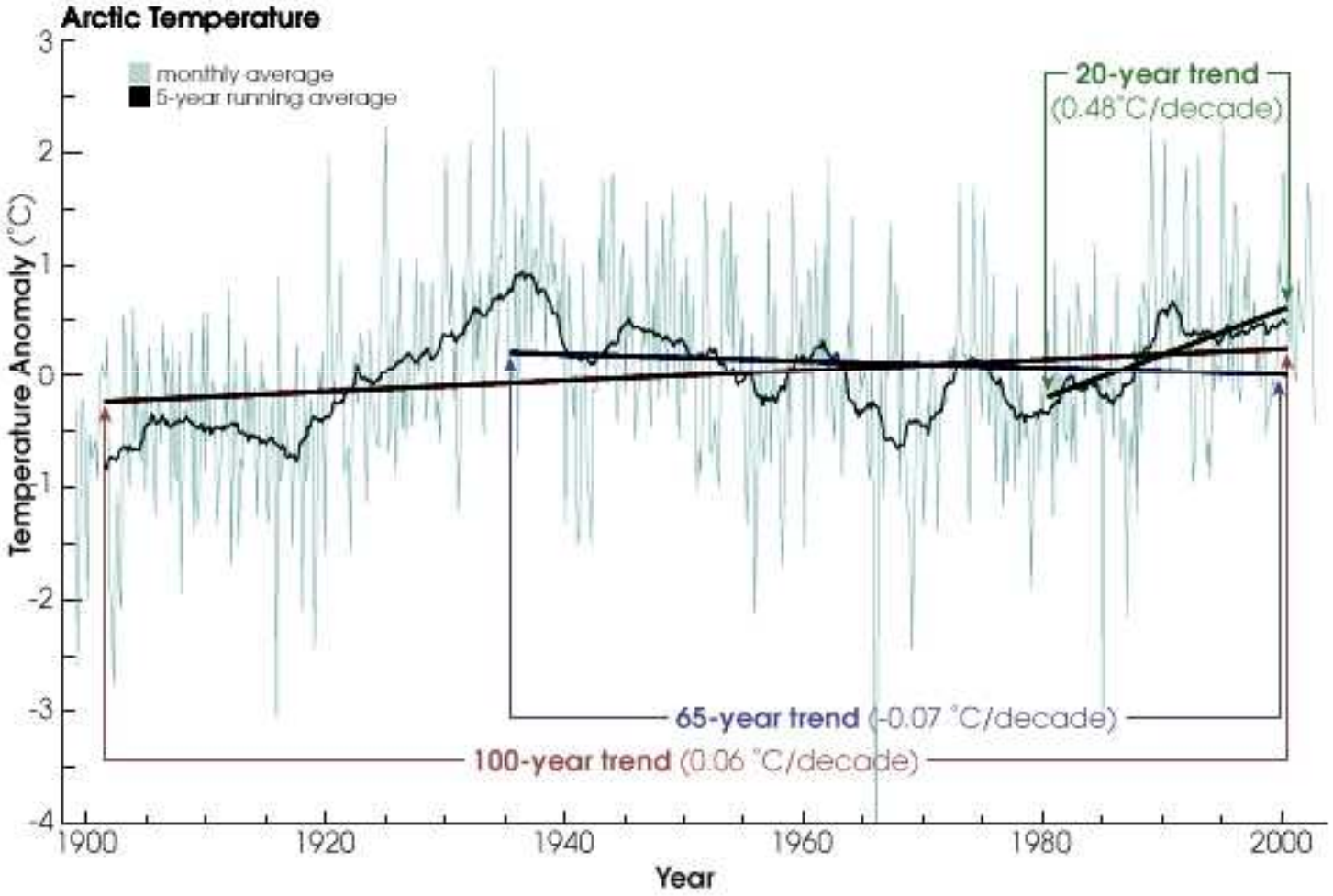
- Climate change is caused by factors that include oceanic processes (such as oceanic circulation), variations in solar radiation received by Earth, plate tectonics and volcanic eruptions, and **human-induced alterations of the natural world;**
- in the context of environmental policy, the term *climate change* has become synonymous with anthropogenic global warming
- Source: wikipedia (en)

Climate Change

Intergovernmental Panel on Climate Change (IPCC 2007):

- Temperature rise between 1.1 and 6.4 C
- sea level rise
- more frequent warm spells
- heat waves
- heavy rainfall
- Increase in droughts
- Tropical cyclones
- Extreme high tides

Climate Change



Source: NASA, wikipedia (en)

Decarbonisation Scenario

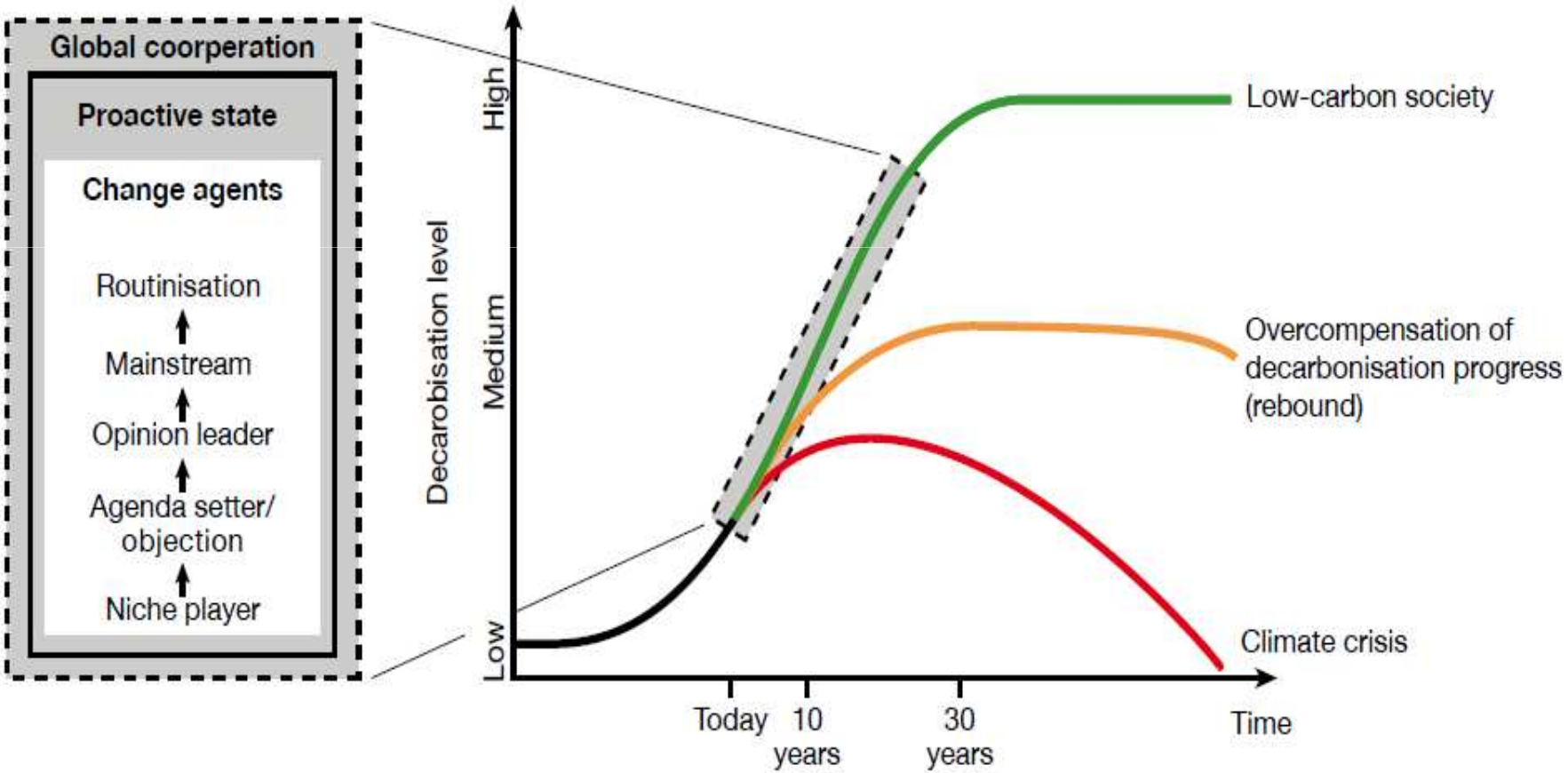
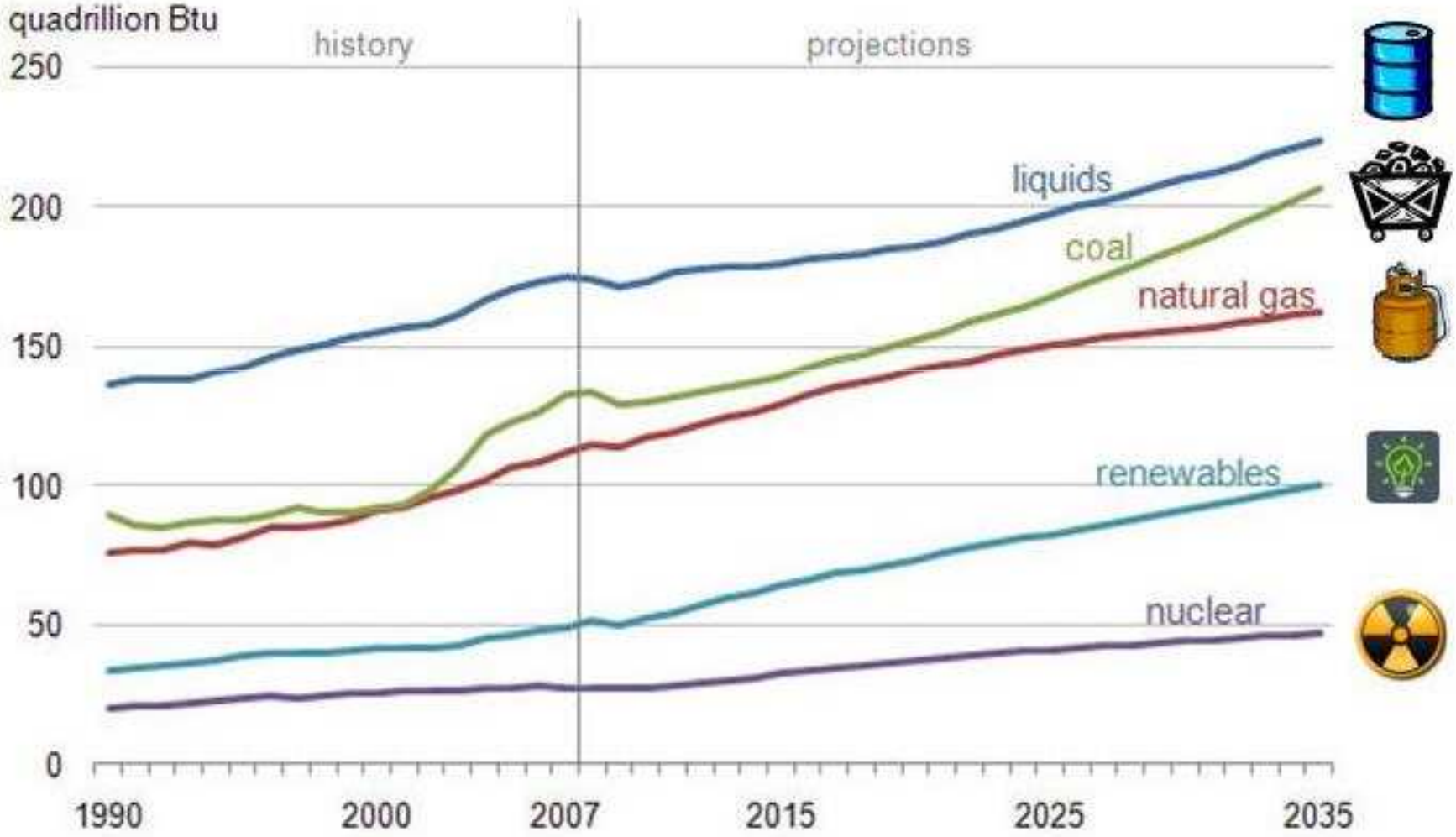


Figure 2 Source: German Advisory Council for Global Change 2011

Primary Energy Use

Figure 2. World marketed energy use by fuel type



Source: U.S. Energy Information Administration
(Report #:DOE/EIA-0484(2010))

Low Carbon Projects

Low Carbon Cities in China and World Wide, e.g. Xiamen, Hangzhou

Areas of Specific Targets and Projects:

- Industrial Production
- Transport
- Buildings
- Waste Management

Europe's Electricity Supply According to the Energy [R]evolution 2010 Scenario

The transformation of the energy systems rests on the electricity sector. In this sector, decarbonisation is easier to achieve than in the heating or transport sector. However, heating and mobility can also be made more efficient, climate-friendly, and in part also cheaper through the use of renewable electricity. For these reasons, renewable electricity will become primary energy in the long run, with the consequence that, despite energy savings, there is no reduction of the overall electricity demand by 2050.

In the Advanced Scenario, the regenerative share rises from 16% (2007) to 43% (2020), 68% (2030), and 97% (2050), with a capacity of around 1,500 GW by then. Most of this increase can be attributed to wind and solar power. The sustainable biomass potential is

Source: German Advisory Council for Climate Change 2011: p. 146

Geographical Scales

- Cross-cutting in terms of geographical scales
- Emissions are caused on the local level, their reduction is regulated on sub-national (e. g. in the case of some US states), national and regional level (in the case of the EU), and their effect is aggregated on the global level.
- no direct relation between locations with high emissions and with strong negative impacts: the impacts of climate change are distributed independently from the origin of emissions

Transboundary *sustainability challenges*. A good start…

- Stockholm Conference (1972) with participation of China
- Montreal Agreement with participation of China
- Rio Conference on Environment and Development: Biodiversity Convention, Agenda 21, research and action extended

Montreal Protocol on Substances That Deplete the Ozone Layer

- protocol to the Vienna Convention for the Protection of the Ozone Layer: international treaty designed to protect the ozone layer by phasing out substances believed to be responsible for **ozone depletion**, in particular *Chlorofluorocarbons* (CFCs)
- ….but other fluorinated gases used as substitutes are powerful greenhouse gases.
- opened for signature on September 16, 1987, and entered into force on January 1, 1989
- widespread adoption and implementation. It has been ratified by 196 states and the European Union.

Rio +20 Conference
Earth Summit 2012

- Environmental Governance:
- Poverty alleviation:
- Green Economy:

Critical Issues: *Disasters, Oceans, Water, Food, Cities, Energy, Jobs*

- Source: www.earthsummit2012.org

Climate Governance

- cross-cutting in terms of sectors
- “bureaucratic land rush” – Conrad (2010)
- National Development and Reform Commission (NDRC): policy cooridnation
- Ministry of Science and Technology
- Ministry of Environment
- Ministry of Foreign Affairs
- Land use: Agriculture, Forestry

China context

- NDRC and MOFA are the most important actors in the National Coordination Committee on Climate change (NCCCC)
- It consists of 15 bureaucratic units dealing with climate-related policies and activities; it is chaired by NDRC

Objectives of the P.R. China

China's proposed climate mitigation action:

- reducing energy intensity – the amount produced per unit of GDP – by 16% over the 2011-2015 period, and carbon intensity by 17%. A reduction in carbon intensity 2005/2020 (40%-45%).#
- to cap total energy use at 4.1 billion tonnes of standard coal by 2015.
- Increase in non-fossil fuel share of primary energy supply to 15% by 2020 against 2005
- Increase in forest coverage
- Promotion of Green Economy, Low Carbon Economy, Circular Economy and technological development

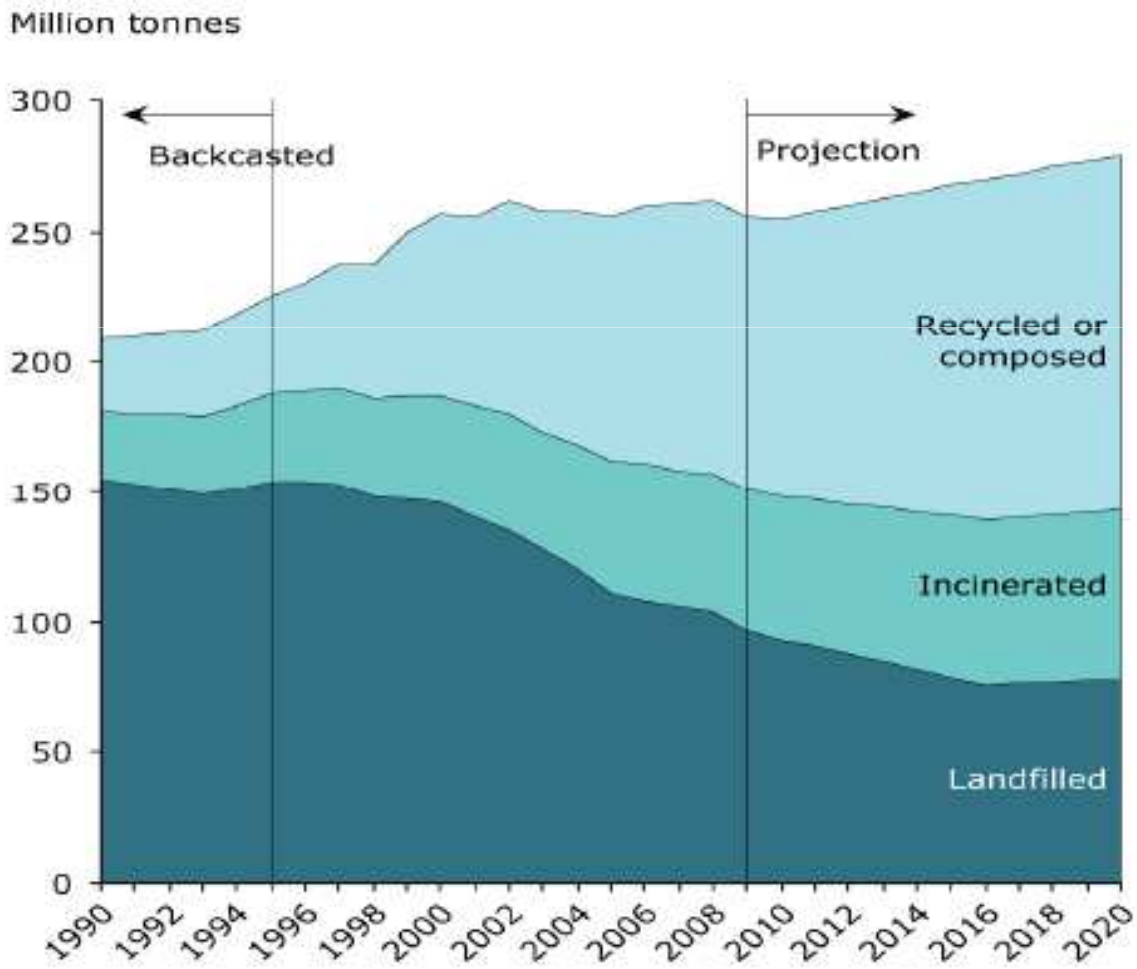
Policies and Laws in China

- Environmental Protection Law (trial in 1979, amended, enacted 1989)
- Renewable Energy Law of the People's Republic of China (2005)
- China's scientific and technological actions on climate change (Ministry of Science and Technology, 2007)
- China's National Climate Change Programme (NDRC, 2007)
- China's policies and actions for adrdressing climate change (white paper)

Example: Solid Waste Legislation

- Solid Waste Pollution Prevention and Control Law (enacted in 1995): obligations on those who generate, collect, store, transport, utilize, dispose or import solid waste.
- Reporting, registration and licensing system for industrial solid and hazardous waste
- SEPA has nationwide supervision and management responsibility, EPBs responsible at local level
- Municipal Government in charge of facilities to collect, remove, store, transport and treat urban household refuse

The EU Waste Management Strategy



Baseline scenario of EU until 2020

Second Question

2 a. What other concepts and terms are related to it?

2. b. What is the meaning of some of these key terms and concepts: Tragedy of the Common, Green Economy, Blue Economy, Green Growth?

Tragedy of the Commons

Cows on Selsley Common. The "tragedy of the commons" is one way of accounting for overexploitation.
Source: en.wikipedia.org (June 2012)

Tragedy of the Commons

- tragedy of the unmanaged commons
- dilemma arising from the situation in which multiple individuals, acting independently and rationally consulting their own self-interest, will ultimately deplete a shared limited resource, even when it is clear that it is not in anyone's long-term interest for this to happen. This dilemma was described in an influential article titled "The Tragedy of the Commons", written by ecologist Garrett Hardin and first published in the journal *Science* in 1968
- failing to distinguish between common property and open access resources
- Source: en.wikipedia.org (June 2012)

Tragedy of the Commons

- tragedy of the commons could be prevented by either more government regulation or privatizing the commons property (Hardin);
- However, handing control of local areas to national and international regulators can create further problems (Elinor Ostrom, Nobel Prize Winner);
- Relevance for overfishing, global warming, sustainable development in general.

- Source: en.wikipedia.org (June 2012)

Free Rider Problem

- “someone who enjoys the benefits of an activity without paying for it”
- Relevant in economics, collective bargaining, psychology, and political science;
- consequence of free riding may be the excessive use and costs of a common property resource:
- research provided empirical evidence that social norms and institutions can limit the extent of free riding by sanctioning those who do not contribute, or take more than their share from the common pool (Elinor Ostrom)
- Source: en.wikipedia.org (June 2012)

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Green Economy

- According to UNEP (2011a): A green economy is one that results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive.
- “Inclusive Green Growth”, a new World Bank report (2012).
- “Green growth depends on the idea that it is possible to value the environment accurately enough for companies to take proper account of environmental costs. …Statisticians and accountants have agreed on general auditing principles but these are not yet detailed enough for companies” (Economist 16.06.2012)

Green Economy

- “Grow first, then go green?” (emerging markets philosophy?)…but costs of environmental degradation in China 9% of GDP per annum Economist, 16.06.2012, „Shoots, greens and leaves”
- The Chinese Academy of Social Sciences reckons the total annual damage to China’s economy from environment degradation is the equivalent of 9% of GDP.
- Asked to name the main cause of climate change, the mayors of São Paulo, Mexico City and Dar-es-Salaam replied *urban design*.

Green Economy: Steel Manufacturing Technology

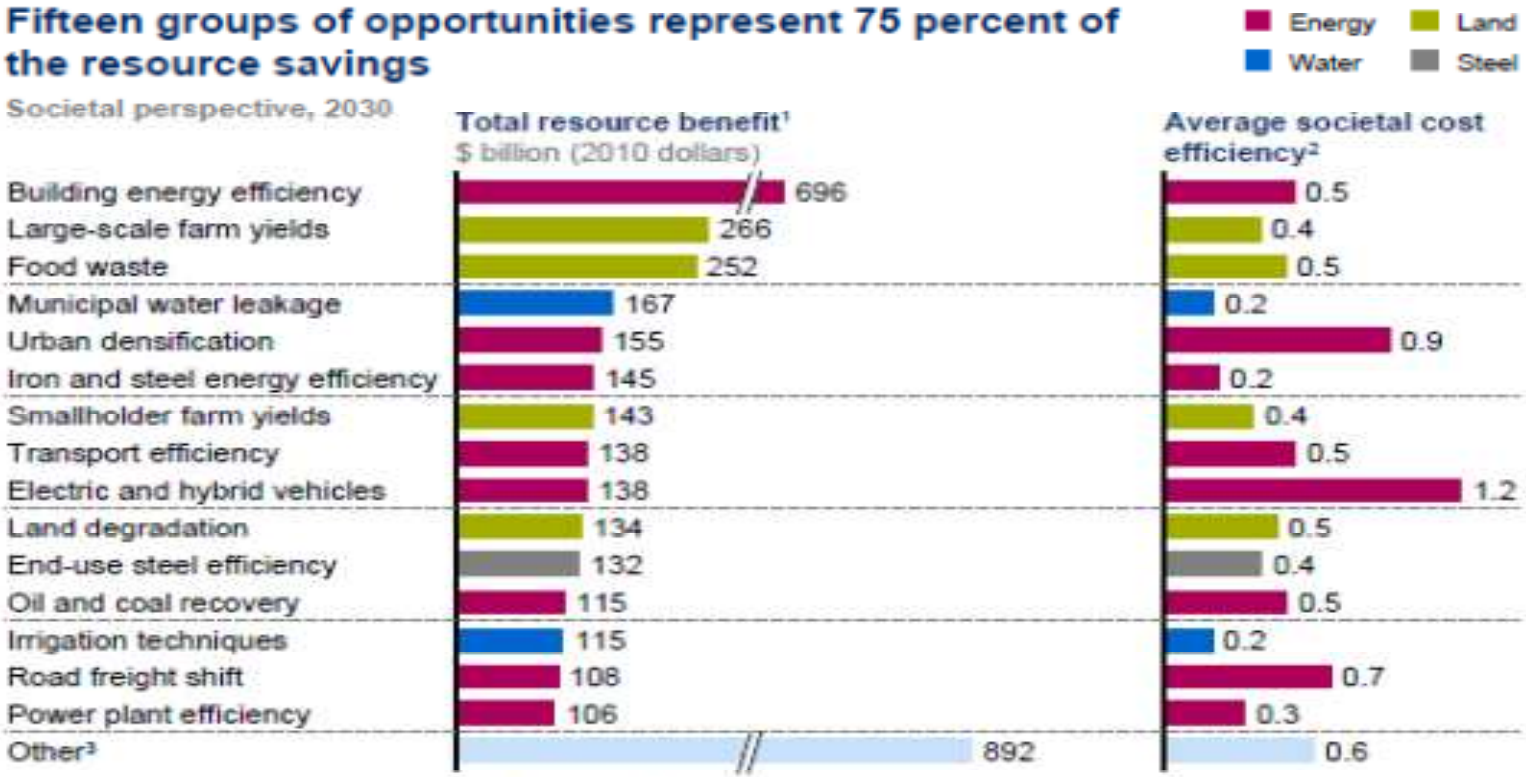
- As energy constitutes a large portion of the production costs of steel (20-40%). Manufacturers have strived to improve the efficiency of the process.
- The most efficient steelmaking processes have optimised energy use by enhancing control of each step of the production chain. The process improvements (and the increase of recycling) have led to a **reduction of about 50% in energy requirements** and 60% in CO2 emissions in the production of a tonne of crude steel over the past 40 years.
- Source: http://lowcarbonfacts.eu/low-carbon/complementary-material/
- "Long-term Scenarios and Strategies for the Expansion of Renewable Energy Sources in Germany, 2012.

Opportunities for Resource Savings

Exhibit 25

Fifteen groups of opportunities represent 75 percent of the resource savings

Societal perspective, 2030



1 Based on current prices for energy, steel, and food plus unsubsidized water prices and a shadow cost for carbon.
2 Annualized cost of implementation divided by annual total resource benefit.
3 Includes other opportunities such as feed efficiency, industrial water efficiency, air transport, municipal water, steel recycling, wastewater reuse, and other industrial energy efficiency.

SOURCE: McKinsey analysis

Key Elements of Green Economy

- internalising externalities;
- improving material and energy efficiency
- decoupling material and energy use from economic growth;
- shifting to a circular economy;
- shifting to renewable resources

Source: European Environment Agency Report 2011: Earnings, jobs and innovation: the role of recycling in a green economy, Brussels, p.10

Blue Economy (G. Pauli)

- innovation projects focusing on sustainability
- create solutions that are environmentally beneficial and have financial and wider social benefits.
- “we can alter the way in which we run our industrial processes and tackle resultant environmental problems, refocusing from the use of rare and high-energy cost resources to instead seek solutions based upon simpler and cleaner technologies.”

Green Growth

- radical growth in environmental and resource-saving technologies
- radical “de-growth” in products and processes that undermine long-term living and production conditions
- Growth of the eco-industry
- Now the growth of the entire economy is implied by the usage of this term.

Source: Martin Jaenicke 2011: From a growing eco-industry to a sustainable economy, Environmental Policy Research Centre, Freie Universität Berlin, Department of Political and Social Sciences, Otto Suhr Institute for Political Science

Third Question

3. Which debates, international agreements, regional and national policies and projects shape the debate on sustainable development?

Environmental Concerns and Politics

- “Environmental concerns played almost no role in the early stages of industrialization and remained weak until at least the 1960s. The Cuyahoga river in Ohio was so polluted that it caught fire as recently as 1969. That spurred the creation of America’s Environmental Protection Agency”
- “Costa Rica’s former environment minister, Carlos Manuel Rodríguez, says Latin America’s politicians can mess up on health, literacy and the environment but if they provide jobs and growth, they will get re-elected.”

  (Economist, 16.06.2012 Shoots, greens and leaves)

Debates: Stern Review on the Economics of Climate Change I

- 700-page report released for the British government on 30 October 2006 by economist Nicholas Stern

Key Summary Points:

- climate change is the greatest and widest-ranging market failure ever seen
- The benefits of strong, early action on climate change outweigh the costs.
- The scientific evidence points to increasing risks of serious, irreversible impacts from climate change associated with business-as-usual (BAU) paths for emissions.

(see: en.wikipedia.org, June 2012)

Debates: Stern Review on the Economics of Climate Change II

- Climate change threatens the basic elements of life for people around the world – access to water, food production, health, and use of land and the environment.
- The impacts of climate change are not evenly distributed – the poorest countries and people will suffer earliest and most. And if and when the damages appear it will be too late to reverse the process. Thus we are forced to look a long way ahead.
- Climate change may initially have small positive effects for a few developed countries, but it is likely to be very damaging for the much higher temperature increases expected by mid-to-late century under BAU scenarios.
- Criticism: Cox and Vadon, 2007: to pessimistic?
- (see: en.wikipedia.org, June 2012)

Debates on Roles and Responsibilities

- Common but differentiated responsibilities (CBDR)
- capita convergence, soft landing
- China 4 tonnes of C02 p.c., Western Europe 8 tonnes p.c., USA 19 tonne p.c.
- cumulative emissions regime (Development Research Centre of the State Council of China (2009)
- China's share of global CO_2 emissions is about 30%, may increase to 45% (high scenario)
- China did not have a quantitative GHG emission-reduction obligation under the Kyoto Protocol because of developing country status

Major International Agreements

- Convention on Biological Diversity,
- Agenda 21,
- Kyoto Protocol

Convention on Biological Diversity

Example: Biological Diversity

- “At the 1992 UN Conference on Environment and Development (the Earth Summit), the Convention on Biological Diversity (CBD) was born.
- 192 countries, plus the EU, are now Parties to that convention.
- In April 2002, the Parties to the Convention committed to significantly reduce the loss of biodiversity loss by 2010.
- The 2010 biodiversity target has not been met at the global level.”
- Source: http://www.globalissues.org/issue/367/sustainable-development

Agenda 21

- non-binding, voluntarily implemented action plan of the United Nations, UNCED Conference in Rio 1992
- Agenda 21 is a 300-page document divided into 40 chapters that have been grouped into 4 sections
- Commission on Sustainable Development acts high-level forum acting as preparatory committee for summits and sessions on the implementation of Agenda 21

Kyoto Protocol

- Protocol to the United Nations Framework Convention on Climate Change (UNFCCC)
- adopted by Parties to the UNFCCC in 1997, and entered into force in 2005
- international treaty setting binding obligations on industrialised countries to reduce emissions of greenhouse gases. Emissions of developing countries are allowed to grow in accordance with their development needs.

Kyoto Protocol

Three Flexible mechanisms

- International Emissions Trading (IET) –

Project based mechanisms:

- Clean Development Mechanism (CDM)
- Joint Implementation (JI)

Post-Kyoto?

- an agreement was reached to extend the Protocol to 2020 and to set a date of 2015 for the development of a successor document
- The Kyoto second commitment period applies to about 15% of annual global emissions of greenhouse gases.

Clean Development Mechanism

- Most of these reductions are through renewable energy commercialisation, energy efficiency, and fuel switching (World Bank, 2010, p. 262).
- By 2012, the largest potential for production of CERs are estimated in China (52% of total CERs) and India (16%).
- But…Carbon Credits fell from

Clean Development Mechanism

- Developed countries sponsor a greenhouse gas reduction project in a developing country where the cost of greenhouse gas reduction project activities is usually much lower, but the atmospheric effect is globally equivalent.
- The developed country would be given credits for meeting its emission reduction targets, while the developing country would receive the capital investment and clean technology or beneficial change in land use

Energy Sources EU Heating Sector 2007 to 2050

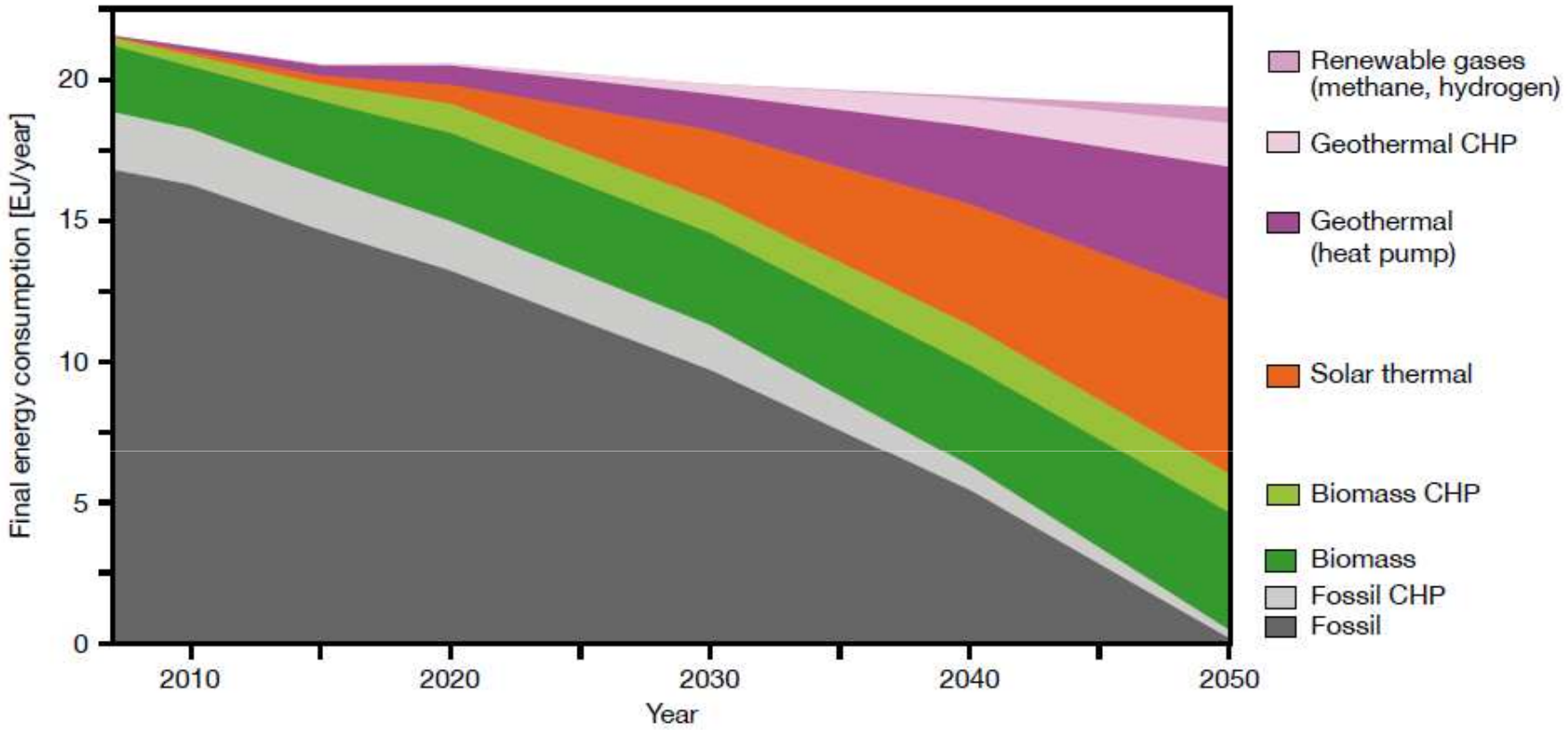


Figure 4.4-3
Final energy consumption in the EU-27 heating sector, with reference to the Energy [R]evolution Advanced Scenario 2010, for the period 2007–2050, showing increased biomass and decreased crude oil reliance up until 2050. Energy saving measures and the introduction of heat pumps, solar thermal energy, CHP technology, biomass and renewable gases (hydrogen, methane) allow 100% renewable heating by 2050.
Source: WBGU, with reference to EREC and Greenpeace

Primary Energy Consumption in the EU-27: 1970 to 2050.

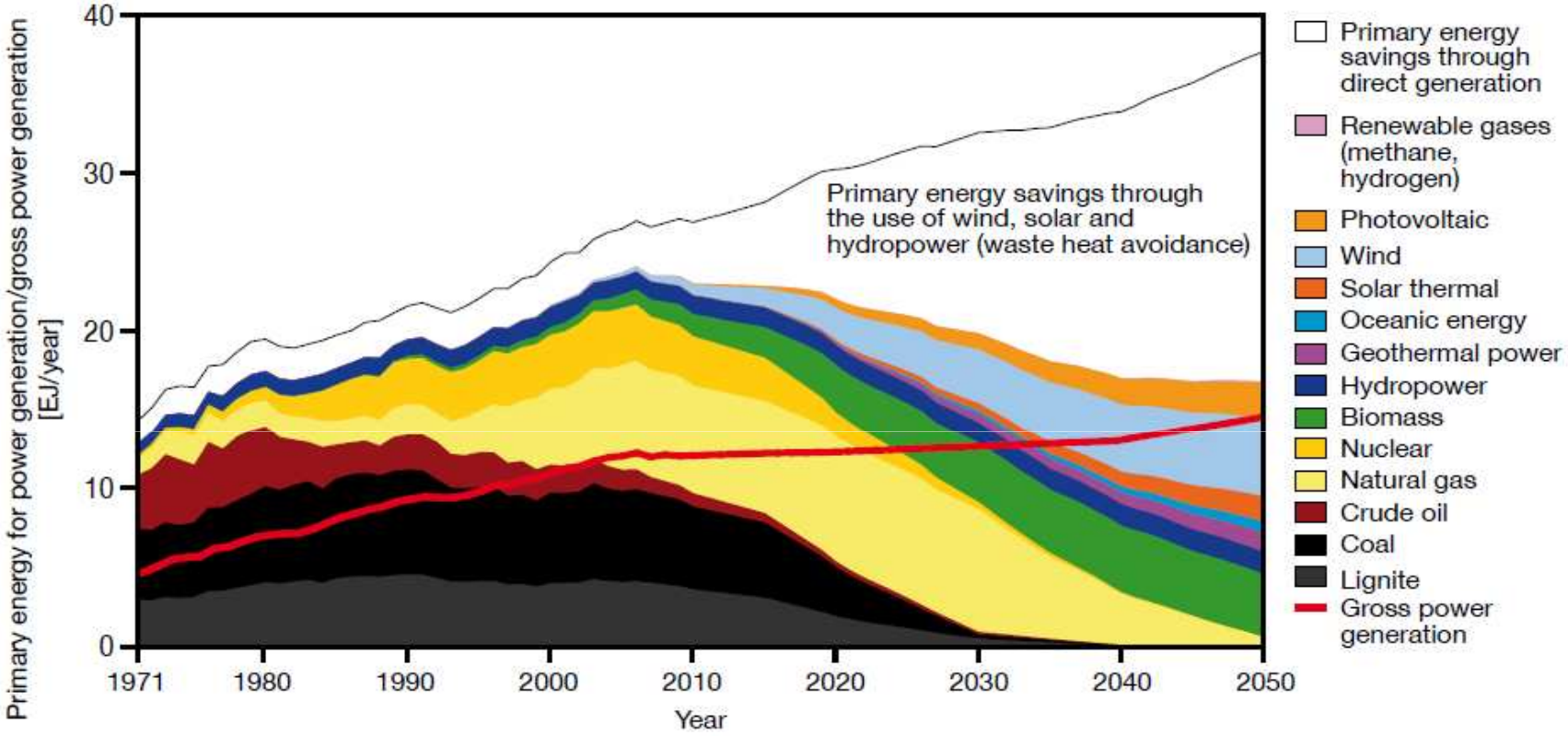
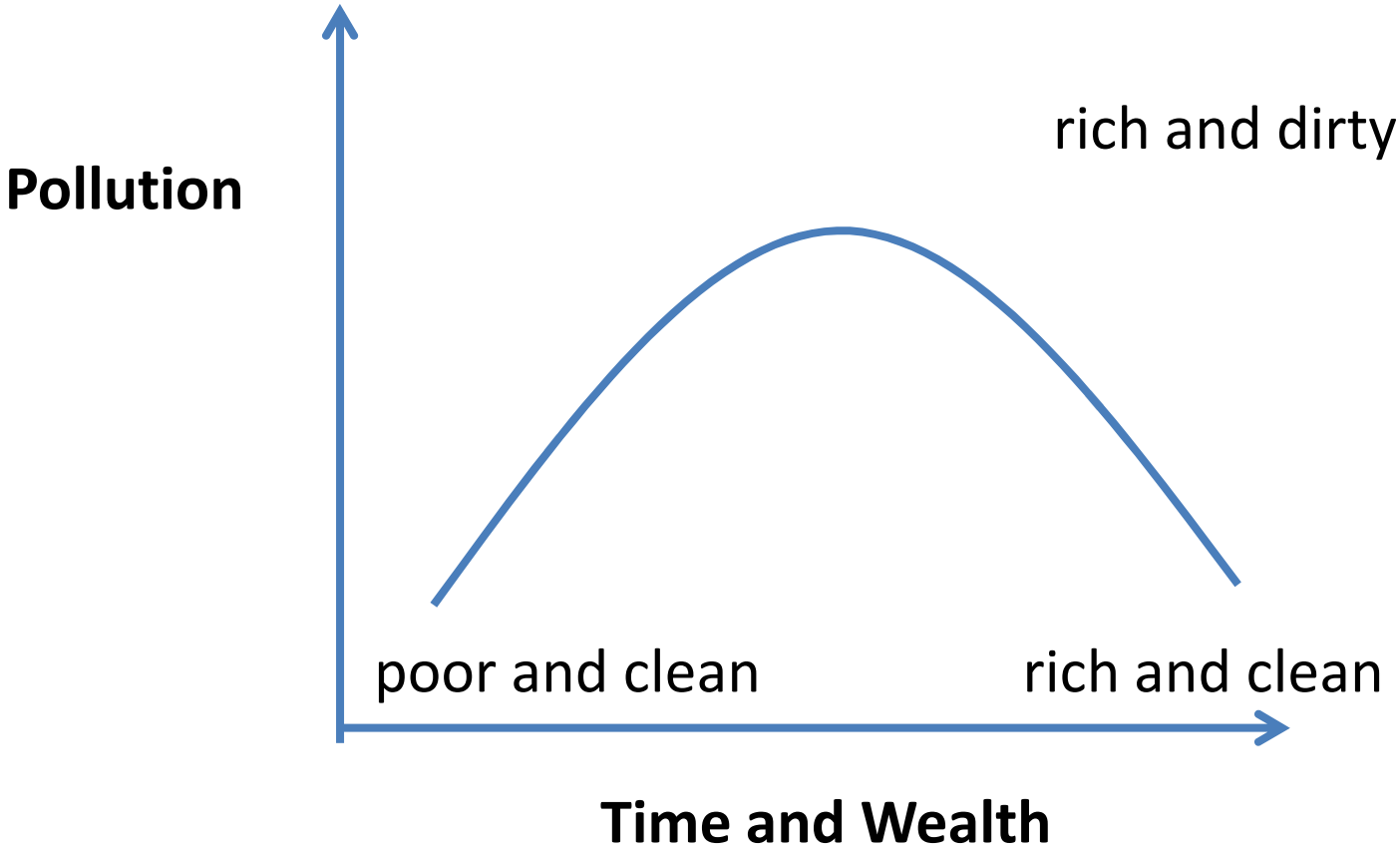


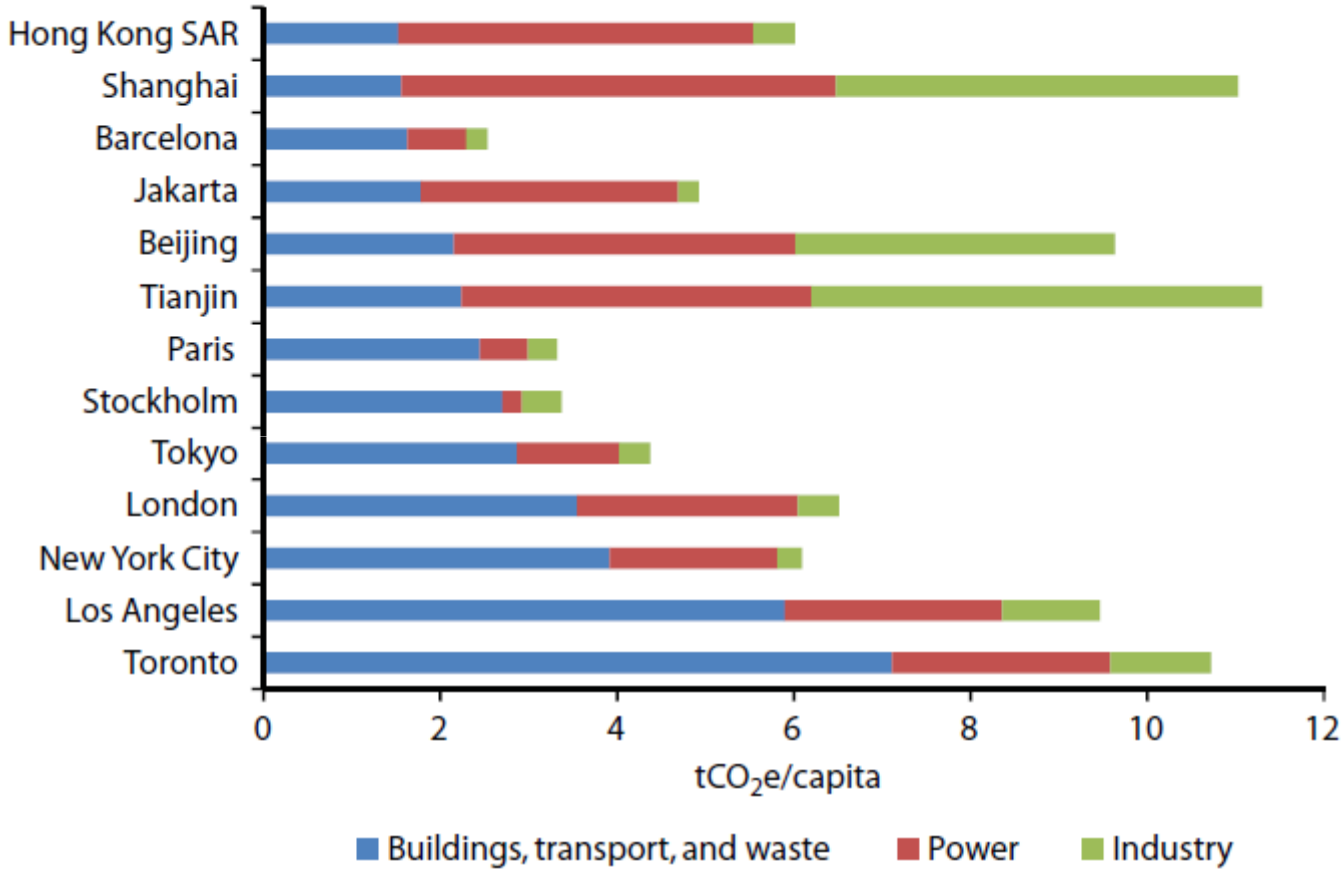
Figure 4.4-1
Primary energy consumption in the EU-27 for electricity according to the Energy [R]evolution Advanced Scenario 2010 compiled by EREC and Greenpeace (2010) for the period 1970–2050. The main contributors are wind energy, solar power, and biomass. Substantial primary energy savings result from the avoidance of waste heat through direct electricity generation by means of wind, solar and hydropower. Gross electric power generation continues to rise moderately until 2050 (red line; Figure 4.4-2). The historical data up to and including 2008 is based on the International Energy Agency's energy balance tables (IEA, 2010d).
Source: WBGU, based on the cited data sources

China‘s Transition Path



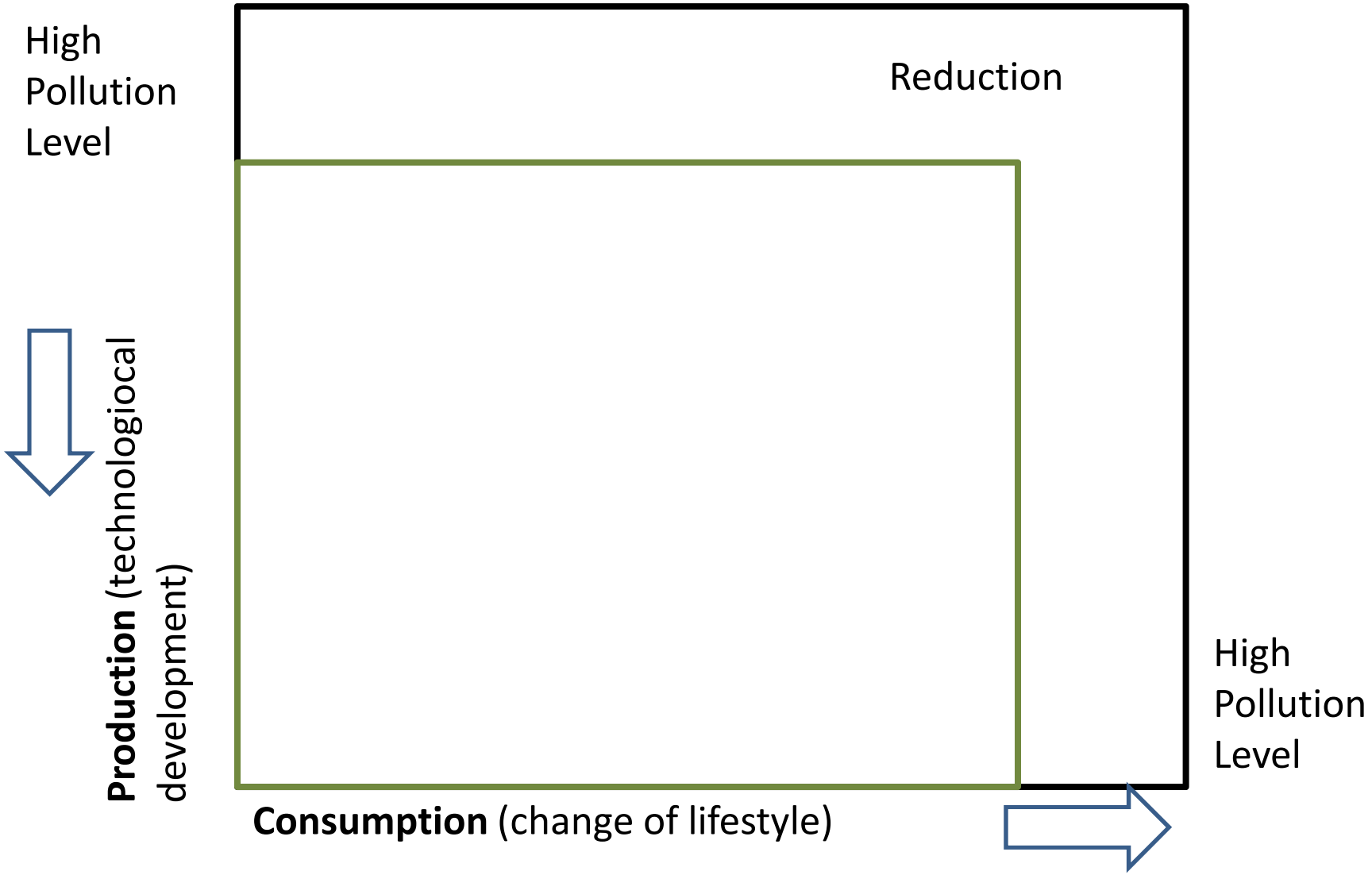
adapted from Pieplow, Haiko/German Ministry of Environment (2012) with reference to debates on the Environmental Kuznet Curve (World Bank 1992.)

Table 2: Per Capita Emissions of Selected Cities



Source: World Bank (2010)

Europe-China: conflicting visions?
Green Technology and Green Consumption

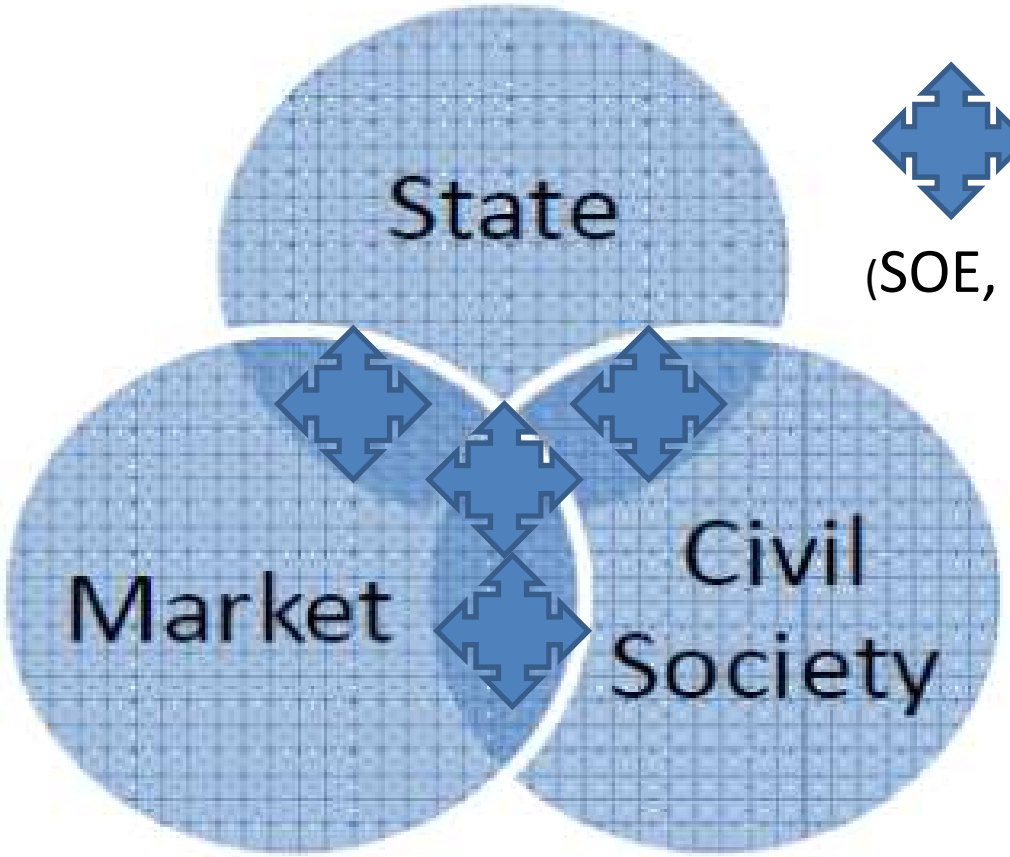


Designed on the basis of Schützemmeister 2010: 268

Stakeholders

- Government and state
- Market
- Civil Society
- Hybrids (SOE, GONGOs, Social Enterprises)
- Scientific Community
- Citizens

State-Market-Civil Society Spheres

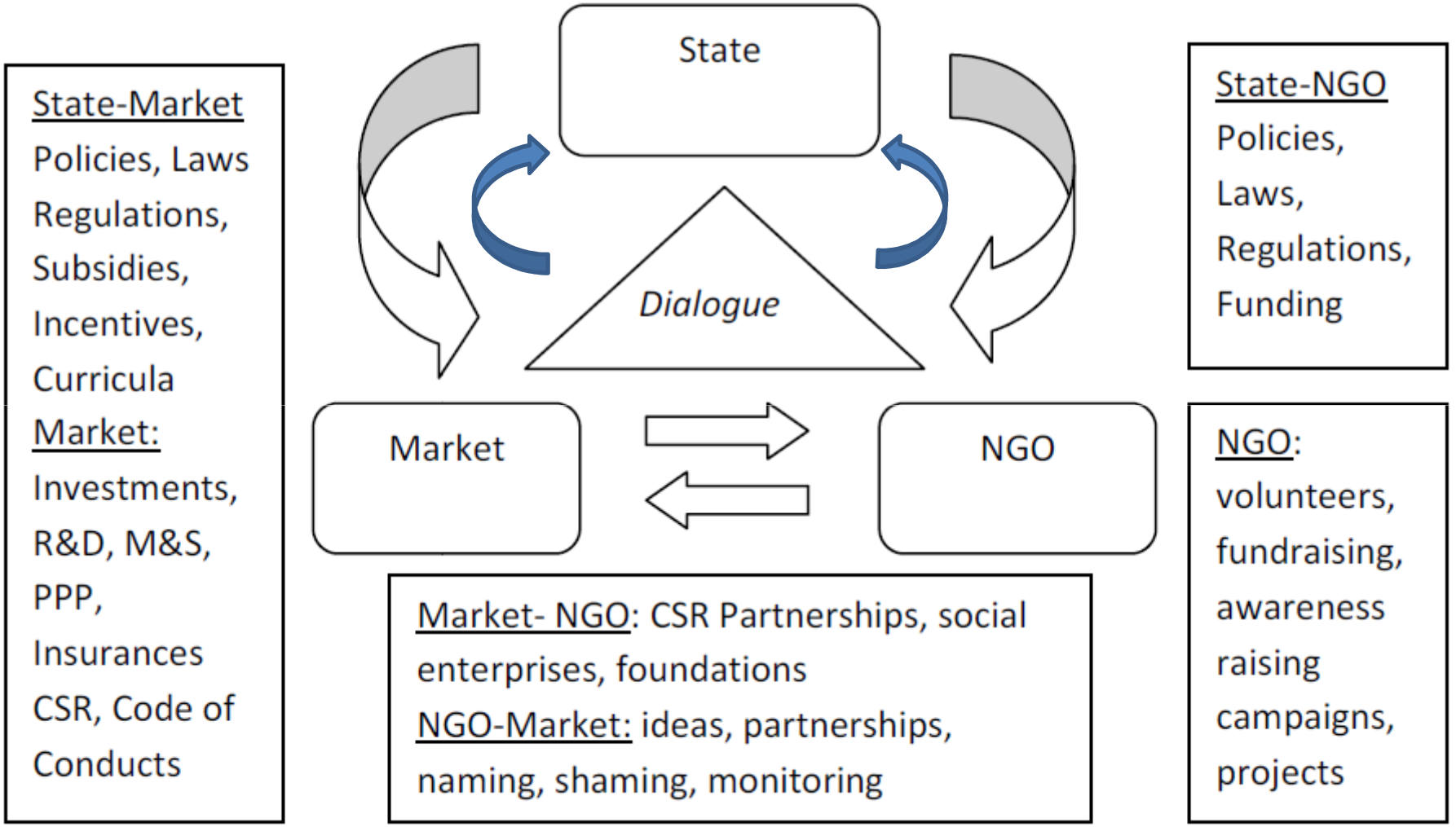


Hybrids

(SOE, SE, GONGO)

re-designed by Berthold Kuhn for Fudan University/APPAM Conference, Shanghai, May 2013 based on Kuhn (2005: 67), reference to Howar 1998: 235, Birle 2000: 235)

Collaborative Governance Framework



designed by Berthold Kuhn for Fudan University/APPAM Conference, Shanghai, May 2013

Instruments

- Command-and-Control
- Market based mechanisms
- Others: Awareness Raising
- Experiments
- Projects

Students‘ Requirements

- Requirement: presentation (group) + 1000 words summary (individual)

  Group Work "How to green China"? -
  Relevance
  Issues
  Role of Institutions
  Potentials and Obstacles
  ...remember this model structure when developing your presentation and paper

Students' Presentations

- groups from 1 to 5 students, highlighting individual contributions;
- each student 10 to 15 minutes;
- submit powerpoint ppt transformed in pdf document (5 lines per slide), including your pictures; plus names in pinyin, email address, phone number, summary plus reference list on one page
- submit draft 2 days before

Topics: Green Conferences

Rio/Johannesburg/Rio plus

COP Conferences

IUCN Jeju 2012

World Economic Forum, Davos

Green Concepts

- Green innovations and blue economy
- Global Commons (Tragedy of the Commons)
- Social Sustainability, the social factor, climate justice, the age factor, the employment factor

Green International Agreements

- Kyoto Protocol
- Montreal Protocol

Green Issues

- Sustainable Urbanisation
- Bio- Diversity, global, comparative or national level
- Renewable Energies, global, comparative or national level

Actors

- Role of Environmental Protection Bureaus in China's state administration
- Environmental NGOs in China
- Mekong river commission: issues and interests, progress and obstacles
- Citizens’s Participation

Instruments

- Environmental Impact Assessment
- Emission Trading Schemes (design, operation, actors)
- REDD — 'reducing emissions from deforestation and degradation

Country Case Studies

- China - concept of sustainability: discourse, reference five year plan, command-and-control, market based, others
- European Union: Emission trading scheme in policy context, Role of NGOs

Country Case Studies (2)

- Germany, focus on Energy Shift Policy, Feed-in-Tariff
- US or Canada: Emission Trading Scheme California, Environmental Policies

Regional and City Cases

- Cities and Cities Alliances, Low Carbon Alliances, Mega City Alliances, C40, City Development Initiative Asia (Asian Development Bank, GIZ and others)
- Shanghai: Policies, actors and projects, Beijing, Shenzhen, Tianjin (e.g. comparative)

Provinces and City Case Studies

- Hong Kong: Policies, actors and projects
- Taiwan
- Xiamen or Your Home Town/Province: Targets, Policies, actors and projects

Game Theory

- Three groups of different size: 3, 5, 7 students
- Each student gets 80 RMB: 20 (1), 10 (5), 5 (2)
- Individual players, no group leadership
- Students place RMB in group envelopes
- Three Rounds: Winning Group 1 Point
- Winner: Most Point Group, Most Money Left
- Winner gets cash: up to **80 RMB**
- RMB needed: 15x80 RMB = **1200 RMB**
- 15 x 20 RMB, 75 x 10 RMB, 30 x 5 RMB