Introduction

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Contents of course

• Introduction of China
• Concept of sustainable development
• Environment and resource
  – Air/Water/solid waste
  – Management
• Energy and industry
• Climate change and response
• Green Economy
Course info

• Lecture
• Field trip: twice, tentative date: Dec.16 and 23
• Final assessment: paper(essay) and presentation 70%, Assignment, 30%
Contents

• Introduction of China

• Concept of sustainable development

• Agenda 21 China
Brief Information of China

- Country Name: The People's Republic of China (PRC)
- Capital City: Beijing
- National Day: October 1st
- China is a country with 5,000 years of civilization
- The Great Wall is one of the construction wonders of the world.
- The Four Great Inventions of China, paper-making, gunpowder, printing technique and compass, have ever played a major role in advancing world civilization.
- area: 9.6 million square kilometers (3,706,581 square miles)
- across six climate zones - equatorial belt, tropical zone, subtropical zone, warm temperate zone, temperate zone, cold zone,
Brief Information of China

• The administrative regionalization of China is made of up four municipalities (Beijing, Shanghai, Chongqing & Tianjin), two special administrative regions (Hong Kong & Macau), five autonomous regions (Inner Mongolia, Guangxi, Tibet, Ningxia & Xinjiang), and 23 provinces (Hebei, Shanxi, Liaoning, Jilin, Heilongjiang, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong, Henan, Hubei, Hunan, Guangdong, Hainan, Sichuan, Guizhou, Yunnan, Shaanxi, Gansu, Qinghai & Taiwan).

• With a population of about 1.37 billion (1370536875 in 2010)

• Chinese people are made up of Han (91.59% of the total population) and 55 ethnic minorities like Mongolian, Zhuang, Manchu and Uyghur, Miao, Bai, Tujia, Dai, Li, Bulang, Gaoshan, Korean, Kazak, Kirgiz, Tajik and so on.
While population increased by nearly 38% and to level off, GDP has increased nearly 25 times.

400 million people have eradicated poverty, which is 12 years in advance on eradicating poverty for UN MDG.

These achievements are obtained in a country of a huge population and by hard working and self reliance.

China is making a miracle
Population and urbanization
The peak is to come around 2030

The peak would appear around 2030, e.g., 1.463 billion in 2032 (UN 2006), 1.404 billion in 2027 (UN 2010), and 1.442 billion in 2029 (Chen 2006) etc. while the National Population Development Strategy Study of China predicted 1.5 billion in 2033.
Population structure compared with USA

US  China
Population issues

- Peak before 2030, about 1.4 billion
- “Aging before wealthy”, rise of dependency ratio, end of demographic dividend
- Sex ratio?
- ...

...
Urbanization is speeding up

Urbanization in China
Urbanization issues

- Carrying capacity of megacities?
- Development of rural regions?
- Development of western regions?
- “Vertical city”?
- Urban sicknesses ...
Is the current development sustainable?

- Photo taken in an art museum of Gothenburg, May 2011
- Alert from an artist ... there are many problems ...
What is Sustainable Development?

Working in pairs:
Topic: What is sustainable development in your opinion
Definitions, tools and frameworks
environment

in-'vl-r&(n)-m&nt, -'vl(-&)r(n)-

[n] 1 : the circumstances, objects, or conditions by which one is surrounded

2 a : the complex of physical, chemical, and biotic factors (as climate, soil, and living things) that act upon an organism or an ecological community and ultimately determine its form and survival b : the aggregate of social and cultural conditions that influence the life of an individual or community.

- Merriam-Webster Online Dictionary, 2004
environment

[n] the totality of surrounding conditions.
environmental effects

...are felt, and modified, in 3 main ways - through the flows of:

- MATERIALS
- ENERGY
- INFORMATION

-> fundamental ‘spheres of influence’ for sustainability
...a course or general plan of action to be adopted by a government, party, person, etc.

- Concise Oxford Dictionary
...a selected, planned line of conduct in the light of which individual decisions are made and coordination achieved

- Webster’s Encyclopedic Dictionary
jurisdiction

- the legal power to administer and enforce the law
- the exercising of this power
- the region within which this power is valid or in which a person has authority
- authority

- Webster’s Encyclopedic Dictionary
Growth and Development

- **Growth** (增长) is a quantitative increase in size, or an increase in throughput
- **Throughput** (吞吐量) is the flow of raw materials and energy from the global ecosystem, through the economy, and back to the global ecosystem as waste
- **Development** (发展) is the increase in quality of goods and services, as defined by their ability to increase human well-being, provided by a given throughput
- **Carrying capacity** (承载力) is the population of humans that can be sustained by a given ecosystem at a given level of consumption, with a given technology
- **Limits to growth ≠ limits to development**
Defining Sustainable Development
Sustainable development:

• meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Ecological Definition

• IUCN, WWF and UNEP. 1980.
  – Sustainable development - maintenance of essential ecological processes and life support systems, the preservation of genetic diversity, and the sustainable utilization of species and ecosystems.
Core Economic Definitions

• Sustainable development is the maintenance or growth of the aggregate level of economic well-being, defined as the level of per capita economic well-being.

• Our standard definition of sustainable development will be non-declining per capita utility - because of its self-evident appeal as a criterion for inter-generational equity.
Social Definitions

David Munro, 1995.

- Sustainable development is a complex of activities that can be expected to improve the human condition in such a manner that the improvement can be maintained.


- The process of managing social demands without eroding life support properties or mechanisms of social cohesion and resilience.
Elements of sustainability

- World Commission on Environment and Development, 1987
Elements of sustainability

- World Commission on Environment and Development, 1987
Elements of sustainability

- World Commission on Environment and Development, 1987
Elements of sustainability

- human diversity (cultural, linguistic, ethnic)
- equity (dependence / independence)
- quality of life
- institutional structures and organization
- political structures

- World Commission on Environment and Development, 1987
The ‘3 Es’ Model

Ecology

Economy

Equity
Sustainable development...

• implies limits

Not predefined absolute limits, but limitations imposed by:

– the ability of the biosphere to absorb the effects of human activities
– adaptability of human social and political organization
– technology
Sustainable development and economic growth

Economic growth must be made:
  – less material intensive (‘dematerialization of the economy’)
  – less energy intensive
  – more equitable in its impacts

• Economic growth may be reduced or curtailed to meet limitations imposed by environment, technology, or society
Sustainable development in China:

China’s Agenda 21
China’s Agenda 21

- **1978 Open Door Policy**, rapid industrialization & urbanization → serious environmental problems
- June 1992: UN Conference on Environment and Development in Rio de Janeiro
- July 1992: the State Development Planning Commission (SDPC) & the State Science & Technology Commission (SSTC) were appointed as the leading institutions for co-ordinating all ministries, departments and non-government organizations to work together to formulate *China’s Agenda 21— ’White Paper on China’s Population, Environment and Development in the 21st Century’*
China’s Agenda 21

- **SDPC**: socio-economic planning
- **SSTC**: research and development
- March 25, 1994: China’s Agenda 21, the first national agenda 21 formulated after the 1st Earth Summit
China’s Agenda 21

• Four parts:
  – Comprehensive strategy and policy of sustainable development
  – Sustainable social development
  – Sustainable economic development
  – Rational utilisation of resources and environmental protection

• *Agenda 21*: a guide document for drawing up medium & long-term plans on socio-economic development: Five Year Plans & sectoral plans at different levels
Strategic SD Concepts:

• To promote the shift in economic structure & the mode of economic development: improving quality of development in growth
• Relying on science and technology: integrating science, education & the economy
• To promote moral & ethical development & to strengthen democracy & legal systems
• Control population growth
• Policies and laws on utilization & protection of natural resources
• Controlling pollution & preventing soil erosion
• ‘Help the poor’ programmes
• National policy, legal system, decision making and management coordination mechanisms for SD
Understanding Sustainable Development

• There exists the limits to growth since natural resource is finite. In other words, growth has its ecological constraints.

• Since natural resource is finite, thus how to distribute these scarce resources is a very important issue. A more equal distribution system can relief the contradiction between intra-generation, intergeneration, and inter-species, which can secure a more sustainable future. In other words, growth has its moral constraints.

• How to use scarce resources to meet our needs? Under the ecological and moral constraints, an efficient allocation mechanism (eg., market mechanism) is necessary for a sustainable development
Critiques on sustainable development

• Discussions of sustainable development and sustainable living are also criticized by some as overly anthropocentric.

• Arguing against consumption and overpopulation on the grounds that they are depleting resources and threatening the well-being of present and future generations can ignore harms done to the natural world itself.
Assignment

- Read one country report
  Agenda 21 ..........

- Write down your own thought

- Send to samcathy@163.com before Oct. 10
Thanks for your attention