



Exploration and Practice: Higher Education for Sustainable Development in China and IESD

UNEP-Tongji Institute of Environmental For
Sustainable Development
College of Environmental Science and Engineering ,
Tongji University

1. General introduction

- ✦ China has a history of HEE for about 40 years.
- ✦ Since the beginning of 1970s, environmental protection discipline was first established in Peking University.
- ✦ Environmental protection program was given in more than 100 universities so far.
- ✦ ESD is already integrated with a series programmes such as urban planning, management and so on.

2. HESD activities in Tsinghua University

- ✦ One elective course of "Introduction on Sustainable Development" was given to Ph. D candidate of all the departments in Tsinghua University since 1997.
- ✦ A series of "green courses" were given to undergraduate students since 1998. Such as "Introduction on cleaner production", "Industrial ecology", "Risk assessment", "Introduction on environmental laws", "energy and environment" in Tsinghua University.
- ✦ "Green education" philosophy was added to experiment, social practice, extra-curricular activities and so on.
- ✦ "green association" was founded by undergraduate student. And a series of activities were conducted such as "refuse the paper greeting cards to save the tree"

3. HESD activities in Beijing Normal University

- ✦ Beijing Normal University will establish an ESD Center for ESD education (Prof. Min Wang)
- ✦ Symposium on Teachers' Training on ESD
- ✦ *A series of books on ESD for the Implementation of DESD(seven books)*
 - *The column of ESD in the Journal of Environmental Education*
 - Textbook: I love my Home Garden - Environment

4. HESD activities in Tongji University

Outline

- ✦ Introduction of IESD
- ✦ Master's Degree Programme
- ✦ Leadership Programmes
- ✦ Other short term programmes
- ✦ Research activities
- ✦ Other Activities in Tongji University

4.1 Introduction of IESD

IESD Time Line

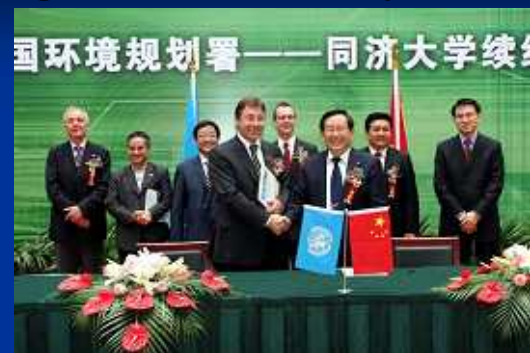
- > 2002/05 Signing ceremony
- > 2003/09 Beijing meeting, RUC
- > 2004/07 1st Leadership Programme
- > 2005/04 ABC Science Team Meeting
- > 2005/09 2nd Leadership Programme/ National Launch of DESD
- > 2005/11 IESD Board meeting, documents
- > 2006/09 Launch of Master's Program (1st Batch)
3rd Leadership Programme
- > 2007/05 Agreement renewed
International Urban Policy Forum
- > 2007/08 Sino-Germany-Africa Summer School
- > 2007/09 Second Batch of Master Students
4th Leadership Programme
- > 2008/05 Young Environmental Leadership Programme
for African countries
- > 2008/07 First batch international students graduated



Signing Ceremony , May 09, 2002



Agreement renewed , May 19, 2007



Vision

To establish an innovative education and research base of environment for sustainable development by emphasizing the harmonic relationships among the three pillars: society, economy and environment.

Mission

- ✦ To develop a new model of education in the field of environmental protection, design and management, aimed at cultivating most-needed research, technical and managerial talents for global environmental protection, particularly for the developing countries.
- ✦ To become an important base, both domestically and internationally, of talent training, scientific research and information exchange.
- ✦ To strengthen international cooperation in scientific research and technology development, and thereby create advanced research results satisfying the needs of global environment protection and resource conservation in relation to international policies.



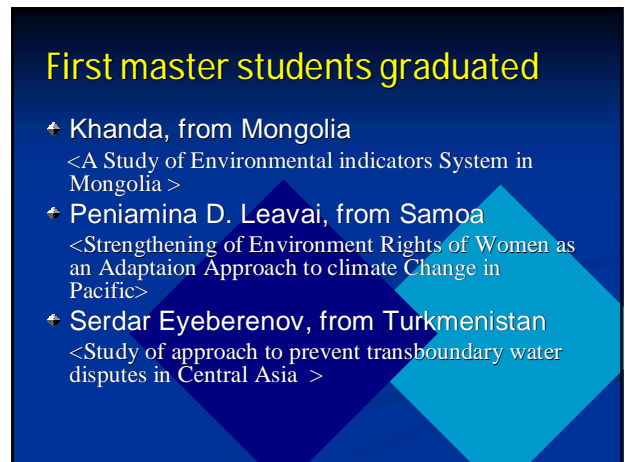
42 Master's degree programme

- International Master's Degree Program in Environmental Management and Sustainable Development**
- launched in September 2006
 - Degree to be awarded by Tongji University
 - Two-years study period, course study and thesis writing
 - Language: English
 - Instructors: Tongji and professors from RUC
 - Allowing one-semester at RUC member universities
 - Innovative curriculum design

- Curriculum development considers the three "element" model – human harmony, environmental harmony and sustainable development.
- Problem solving approach to address critical issues, look for solutions and ways for optimal decision-making, as an effective delivery methodology. Integrative and analytical thinking would be important aspects of this approach.
- A thesis is required for the Master's Degree. However, the research and thesis writing might be different from that in existing programs of environmental science and engineering.

Core courses

Field	Course
Human dimension	Environmental Ethics
Environmental dimension	Environmental Science
Social dimension	Environmental Sociology
Economic dimension	Environmental Economy and Circular Economy
Frames and tools	Frames and Tools for Sustainable Development
Management and policy	Environmental Management and Policy





- ✦ The 1st Leadership Programme was run in July 2004, 35 participants came from 25 Asia-Pacific countries;
- ✦ The 2nd Leadership Programme was run in Sept 2005, 25 participants came from 15 Asia-Pacific countries;
- ✦ The 3rd Leadership Programme was run in Sept 2006, 27 participants came from 17 Asia-Pacific countries;
- ✦ The 4th Leadership Programme was run in Sept 2007, 31 participants came from 23 Asia-Pacific countries.

- ✦ Site visiting :
 - In 2004, Shanghai Water Plant, Suzhou Creek Mengqing Garden, Urban Planning Exhibition
 - In 2005, Suzhou Creek Mengqing Exhibition; Anji County of Zhejiang, eco-village, bamboo products manufacturing (e.g., bamboo leaf flavone plant etc.)
 - In 2006, Wuxi City, Lihu Lake Eco-Garden, Eco-housing, Suntec Solar equipment Plant etc.
 - In 2007, Suzhou City, Suzhou Industrial Park, Jinji Lake – Modern Planning, School Visiting (ESD for environment), Suzhou Museum, Suzhou High-Tech Park, Dongwa Company

Younger Environmental Leadership Programme for African countries, 2008/05

- ✦ Twenty three young African environmentalists from 16 African countries representing ministries of environment, universities, and NGOs converged at the UNEP-Tongji Institute of Environment for Sustainable Development (IESD), Shanghai, People's Republic of China 18-30 May 2008 to attend the Young Environment Leaders Programme for African countries on Environment for Sustainable Development.

- In the sustainable development dimension, social, economic and development aspects were integrated in specific topics. Such a holistic approach is innovative. The topics were recently hot, including climate change, energy, circular economy, green transportation etc., and some are the useful tools like environmental impact assessment etc. These stimulated most of the participants.

- Human dimension is difficult to handle. When the programme was assumed to explore the harmony between human being and environment so as to sustainable development, the training was easily to slip to personal feeling, health, even religious believing.
- Most of the participants have some experience of environmental management. The fundamental knowledge of air, water and land did not seem necessary. Challenges and solutions of environmental issues were more concerned.

4.4 Other short term programs



- ✦ SIDs Leadership Program in 2006
- ✦ UNEP/UNESCO/GPA training programs in 2006 on water issues
- ✦ HSBC Leadership Programs in 2006 and 2007
- ✦ International Urban Policy Forum in 2007...

4.5 Research

- ✦ Emphasizes global and regional interest
 - CO₂ emission reduction
 - Urbanization (eco-city planning and management)
 - Water (Changjiang River, Shanghai Chongming Island)
 - Environmental Assessment
 - Atmospheric Brown Cloud (&water budget)
- ✦ Cooperation with UNEP/RUC, BAYER, Suzhou City

4.6 Difficulties and challenges in IESD

- ✦ IESD already made many achievements in the field of ESD. And IESD does have a unique opportunity to develop, should devote to DESD.
- ✦ Research projects are also being carried out by IESD.
- ✦ Supports obtained internationally and domestically.
- ✦ There are many difficulties and challenges.

4.7 Resource-efficient Campus Construction of Tongji University

- ✦ Tongji University has been taking the lead in building a resource-efficient campus nationwide since 2003.
- ✦ the organization of "Resource-Efficient Campus Construction Committee" was set up.
 - Develop the conservation awareness through education and propagation,
 - Promote the conservation efficiency through management,
 - Realize the maximum resource saving through technological innovatio

Result



Figure 2 Water and Electricity Fee of Tongji University
Source: Website of Tongji Green Campus: <http://www.tongji.edu.cn/sc/english/index.asp>

4.8 Other activities in Tongji University

- ✦ Tongji University has been built up as the resource-saving demonstration model of the resource-efficient campus nationwide. Authorized by National Ministry of Education and Ministry of Construction, Tongji University was leading the editing of the upervisory and Technical Guidelines of Building Resource-efficient Campus in Colleges and Universities.

5. Summary and suggestion

- ✦ HESD is an important component in ESD.
- ✦ University staff members need be re-educated oriented to SD ;
- ✦ In-depth education and research ensure the success of sustainable development.

5. Summary and Suggestions

- Establish supervision committee for organizing and formulating guidelines of ESD in universities
- For selected disciplines, such as environment, management, urban planning, energy, life science etc., conduct pilot studies on curriculum reform, textbook renewal, and education method innovation. Then extends to other disciplines.



Thank you !