



Exploring Environmental, Cultural, & Economic Sustainability in China's Urban and Rural Landscapes



Beijing, China
June 2-12, 2015
CIEE IFDS

你好
ni hao

cīee

Disclaimers

- Economically, Environmentally, or Politically Sustainable?
- Many negatives were presented in the IFDS
- Difficult struggles with fear of imprisonment/discipline commission/firing squad
- China changes so quickly – stock market plunged the next week
- CCP will be critical to save troubled nation
- Socialism + Capitalism = Anarchy
- Not the world's next superpower as it stands



Host Institution: *Minda*

Minzu University of China (MUC)

中央民族大学

Pinyin: *Zhōngyāng Mínzú Dàxué*

<http://eng.muc.edu.cn/>

University for minorities in the “ethnic ghetto”



Suppressed (*but Celebrated*) Cultures

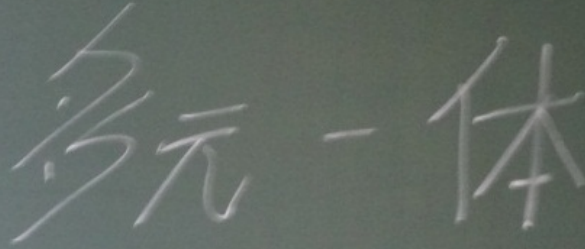
- Ethnoecology: Coast, Plateau, Mountain, Plain, Steppe, Desert... 3.7 million square miles
- 1.3B to 1.4B including 110M minority people
- 56 nationalities (14 neighboring countries - borderlands)
- 80-120 languages

Religions: Shamanism,
Confucianism, Daoism,
Mahayana/Hinayana/
Tibetan Buddhism,
Catholic, Protestant/
Eastern Orthodox
Christianity, Islam

Han Chinese



“Diversity in Unity”



多元一体

We are all part of a unitary Chinese nation.

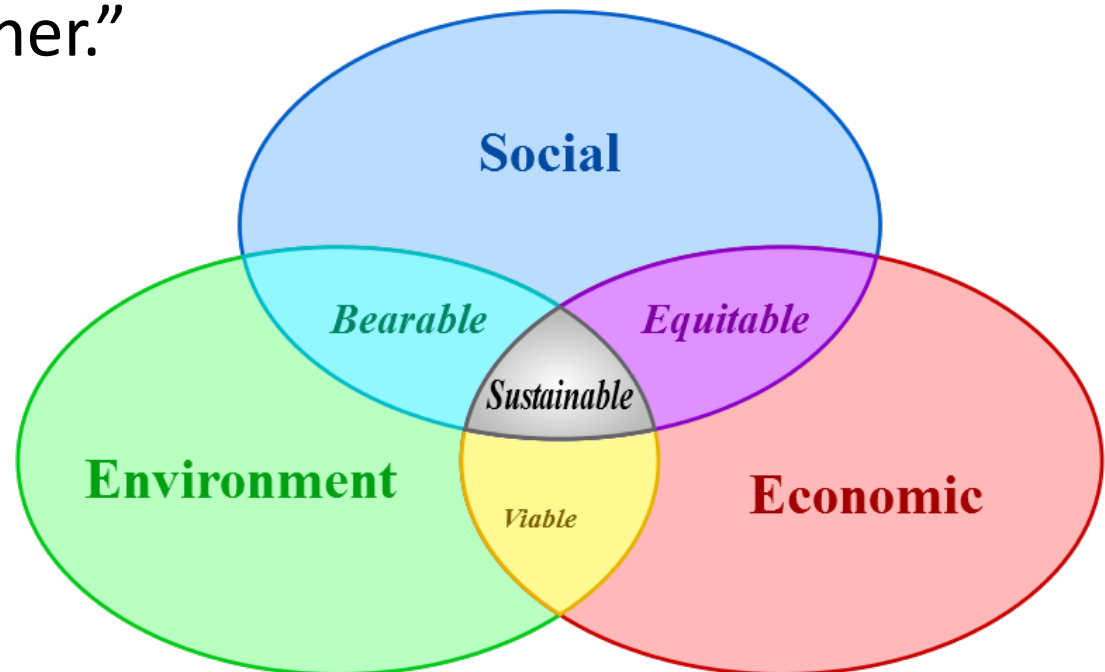
Han Chinese lost small traditions in lieu of Great traditions.

Diversity Sells!

- Tourism; “The last group didn’t give us enough donations.” (Temple guide)
- Prostitution of a culture kills it though; “It’s New Year every day.”

Sustainability

- Complex relationships exist between environmental, sociocultural, and economic development.
- Domestic sustainability has state actors, the private sector, and civil society.
- International pressure is helping:
“Breathing Together.”



CCP's Priorities

The Chinese government cares about every person, but only their economic development.

*Sometimes misguided –
"Cuz Mama says so"*

Social
Stability

Strike enough fear to prevent uprisings.
Appease the middle class with gifts.

Economic
Development

Prevent the "National Humiliation" of low GDP

Traditional Security Issues

Anti-independence
Foreign
Military

Social Security Issues

Education,
housing,
health,
etc.

Environmental Policy

ENVIRONMENTAL STANDARDS: **More rhetoric than reality**

Chinese history of short-lived campaigns with quickly changing goals

- Many plans but with no consistency and no review
- All targets are “to be improved”

All courts choose which cases to take within 2 to 3 year statute of limitations

- Selective enforcement of weak penalties, usually on small companies
- Tiny enforcement staff (not gov't); comfortable but dead-end jobs, no training
- Central government asks local to clean up a river with no resource allocation

**The Environment is NOT a real priority,
especially if it hurts anyone's economics**

ATTITUDE CHANGES: *Via education*

- 2008: Open government information law – just now able to request documents
- 500M-700M “Middle Class” has to speak up, yet CCP can still appease for now.
- But 120M in 2016 will travel outside China.
- 800M cell phone and 650M internet users: “The Great Firewall.” Wifi ↑, CCTV↓
- Public is starting to care... no moral guilt. No Erin Brockovich.

Environmental Problems

- Industry
*since Mao –
foreign-owned*

GDP by composition (2014)	China	US
Agriculture	9.7%	1.6%
Industry	43.9%	20.7%
Service	46.4%	77.7%

- Climate
change
Monsoons ↑,
Glaciers ↓

GDP Structure (2014)	China	US
Household consumption	36.8%	68.7%
Government consumption	14.0%	18.1%
Investment fixed capital	46.0%	15.9%

- Who owns China's land? Policies, Property Rights, and Deliberate Institutional Ambiguity (Peter Ho), *Houko*
- Decentralized Government with much corruption
- Power decreases as responsibility (and blame) increases: a reverse incentive structure, or *discentive*
- Urbanization, esp. since 2000: 170 cities with 1M+

Environmental Litigation: “Paper Tiger”

- Many, many “Soft Laws”: *what penalty? Rather, get permits or pay tiny fine. Stop production! For a little while.*
- Disconnect between MEP & local EPBs: *who me?*
 - *Decentralized government for all public welfare*
 - *CCP priorities: send no money so no blame*
 - *Example: Most Heritage Sites, but no money and no interest*
- Public does not care: *health care sucks anyway.*

Chinese sick people go abroad
<http://magazine.caixin.com/2014-06-27/100696325.html>

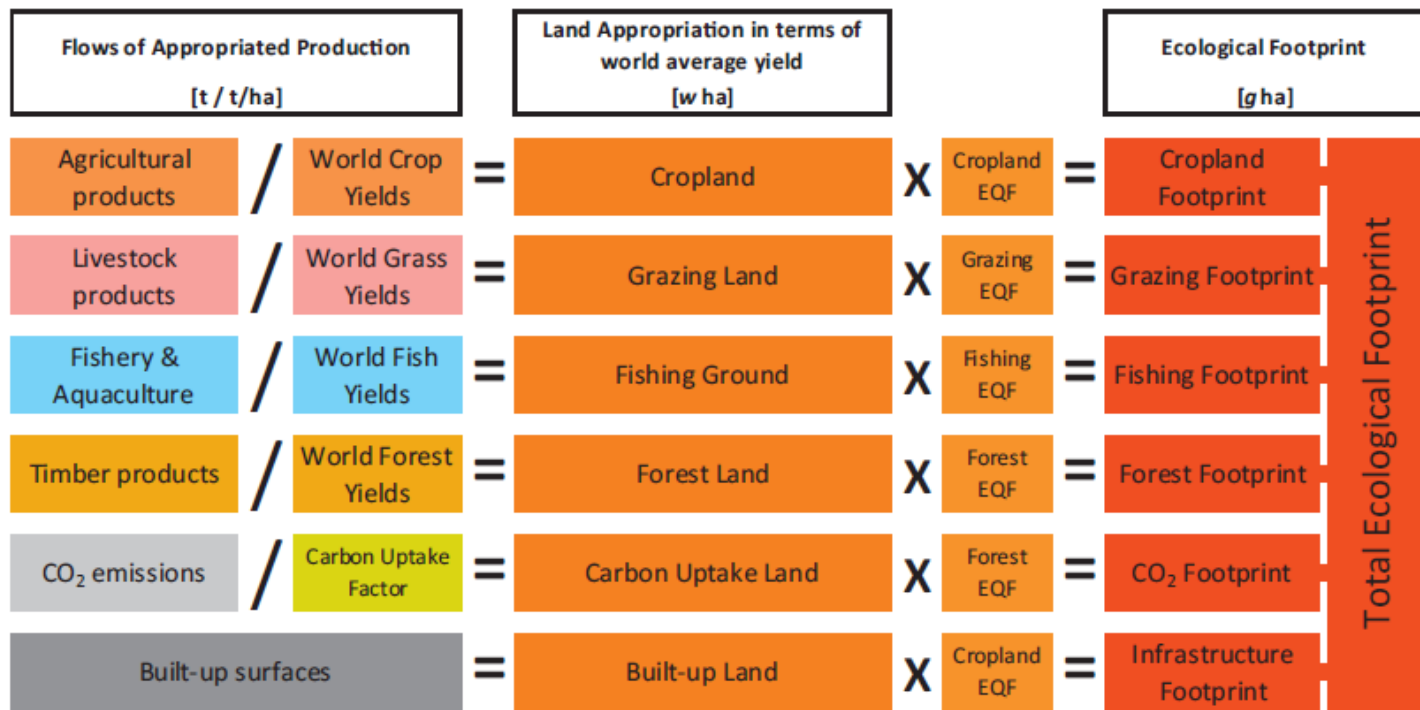
“Judicial Interpretation on Environmental Civil Public Interest Litigation, which is a powerful sword, has been made. We hope this sword can cut through the dirty stream and clean the grey smog air. It will be like a sword of Damocles that hangs above the polluters.”

Justice Zheng Xuelin, Director of Environment and Resources Law Tribunal, Supreme People’s Court, 7 January, 2015

Selected Viewpoints

- I don't have teeth, so I don't want to open my eyes. Then I'd have to see that I don't have teeth.
 - Environmental Administrators/enforcers
- Capitalism causes pollution.
 - CCP Socialist propaganda
- I was able to better myself under the CCP government, so I'll support them.
- Democracy seems like chaos and I may lose what I have.
 - Chinese people
- The Shower Analogy: each hotel has beautiful gladd and chrome bathroom fixtures, but they leak all over. So they put up a wet floor sign: a little one, then a big one, and lastly a giant one with itemized sentences. Yet the floor is still slippery. - E.K. Ervin

Ecological Footprint Metric



Example:
Concept of CCP's
Voluntary
Resettlement
Program aka
"Ecological
Migration"
(aka *imminent
domain for your own
good*)

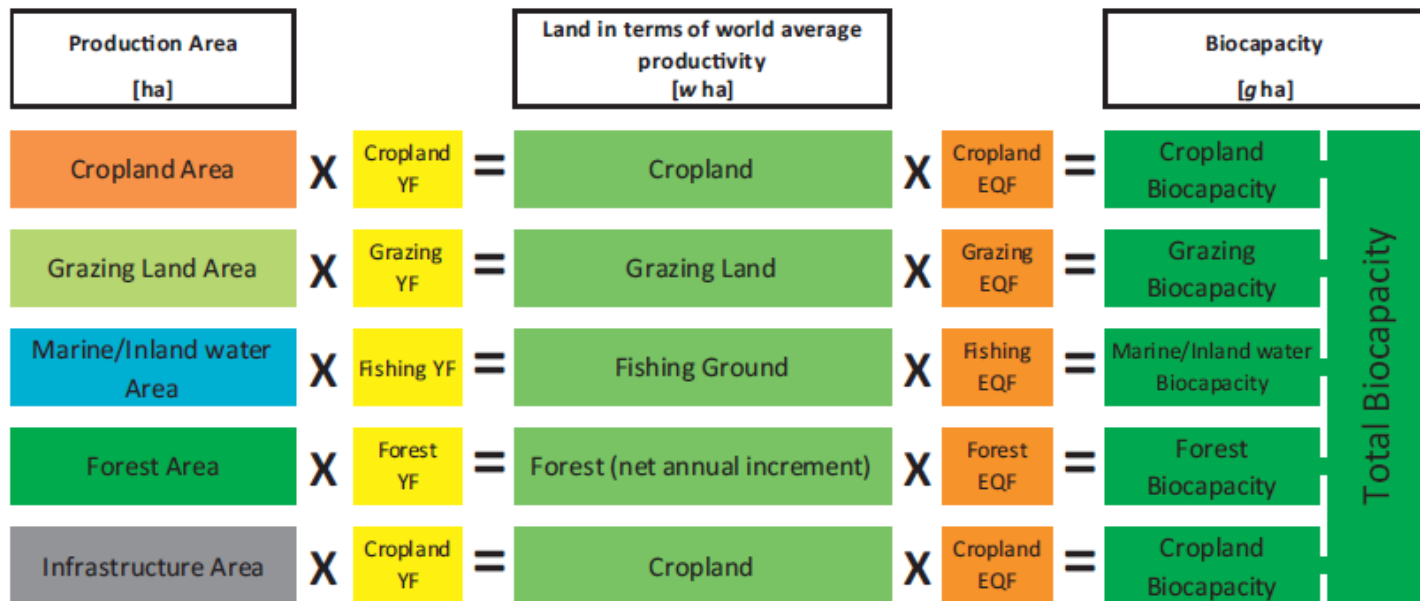


Fig. 1. National Footprint Accounts (NFA) accounting framework.

Human Development Index

- Life expectancy at birth
- Mean years of schooling
- Expected years of schooling
- Gross national income per capita
 - US \$43,480; China \$7,945 (*cheap labor*)
 - 150M very poor Chinese (\$1.25/day in rural west)

HDI Rank	Country	HDI
1	Norway	0.955
2	Australia	0.938
3	USA	0.937
4	Netherlands	0.921
5	Germany	0.92
101	China	0.699

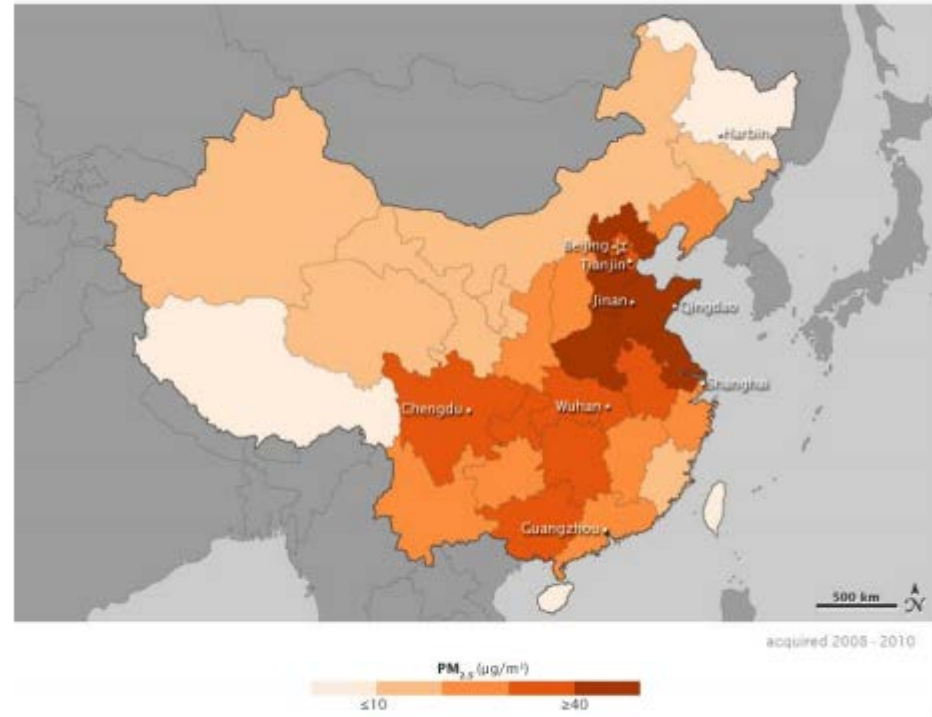
Air Quality Index

- *There's an app for that: BlueSky*

AQI	Air Pollution Level
0 - 50	Excellent
51 -100	Good
101-150	Lightly Polluted
151-200	Moderately Polluted
201-300	Heavily Polluted
300+	Severely Polluted

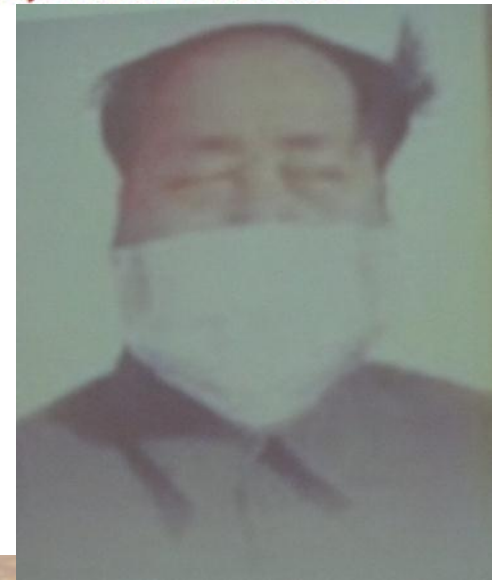
“Airpocalypse” Sandstorm

Fig. 3: Satellite map of PM2.5 intensity



Source: NASA Earth Observatory and Nomura Global Economics.

*Direct Effect:
shut down
cement
factories*





Beijing: The 22M Megacity

- 6 (soon 7) ring roads with 6M-8M new drivers, few traffic lights, and no signs
- License plate lotto: 20,000/month
- Housing crisis: \$150k to \$1M in last 5 years
- Old society: retirement age ↑, softening 1-child policy
- Chinese policy: balance modernization and conservation of China's cultural heritage
- Better security experience for foreigners



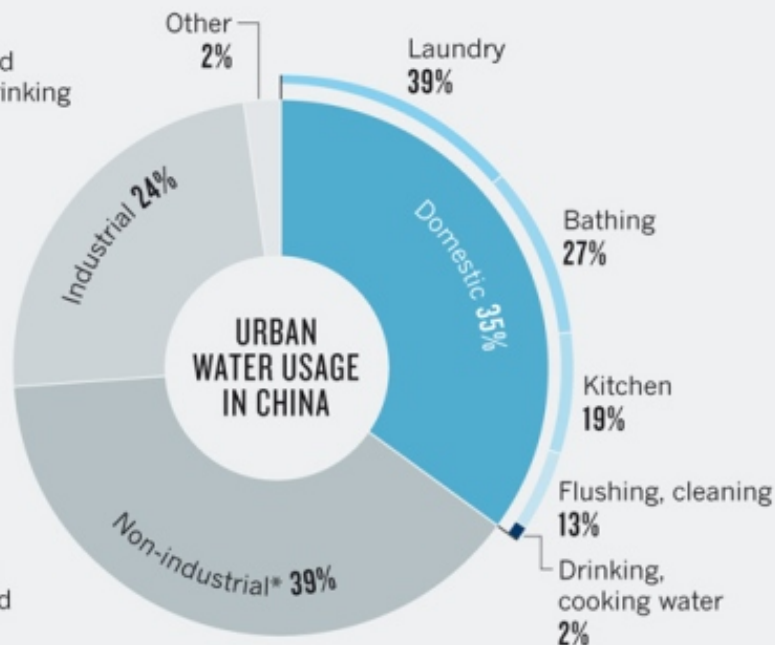
How does China sustainably urbanize? *It doesn't.*

- Poor natural resources (import raw or recycle)
 - Except for carbon emitting substances
- Industry-abused environment (air/water/soil/human...)
 - Nationwide tap water is undrinkable: Arsenic, Chromium, Lead, Cadmium, Mercury
- Institutional denial
 - Tap water is completely safe if you boil it.
 - “What ya gonna do?” (*with a NJ accent*)
- Weak institutional and social commitments
 - “Ok, let’s set up a boil system for the dorm.”
 - Lower by some %: Chemical OD, NO_x, SO₂, CO₂, energy consumption, industrial water use

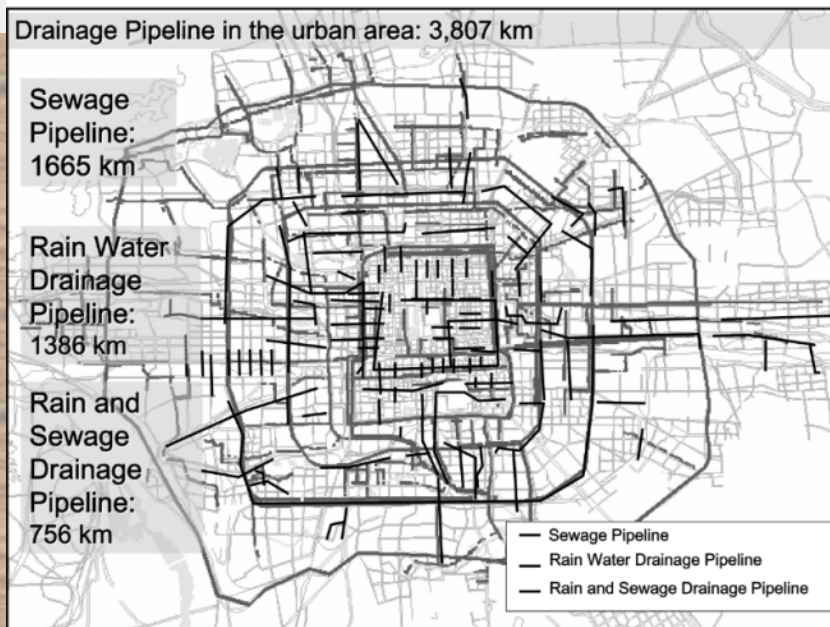
How water is used – and abused – in China

CHINA'S WATER

Nearly half of 634 Chinese rivers, lakes and reservoirs tested in 2011 failed to meet drinking standards for all or part of the year (left). Purifiers on taps could provide the small proportion of water for drinking (right).



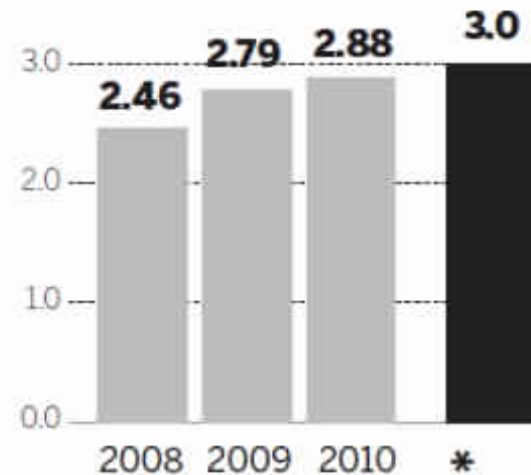
*Includes service-industry, construction, agricultural and ecological uses.



Beijing's Wastewater:
2010: 50% Treated
2015: 70% Treated
WTP in Rural Areas

PEAK WATER CONSUMPTION OF BEIJING RESIDENTS

Unit: million cubic meters per day



* Maximal water supply of Beijing Waterworks Group at present

Source: Beijing Waterworks Group

CHINA DAILY

The North Water Transfer/**Diversion** Project

- Proposed in 1952 (Mao era; **12 years**)
- \$33.1B US (**invested**)
- 420,000 “relocated” as involuntary immigrants (**land acquisition; better health and soil**)
- Provide 1.0B of currently needed 1.5B cubic meters (**water security**)
- 13B cubic meters by 2030
- Downstream river dropped by 75% (**South has too much**)
- Commercial fishing has ceased (**no effect**)



Anxious China quietly opens 1st canal of massive waterworks project

ajw.asahi.com/article/asia/china/AJ201502130012



Posted Map at Presidential Landing



Part I: drought plagued north



- The distribution of water resources in China
- Groundwater Overdraft serious

The second part of the "borrow water" North-South



- Propose ideas
- Water Diversion Project in the world
- Demonstration 50 years

Part III: Water Diversion Project Construction



- "Four vertical and three horizontal" pattern
- East Route Project: carrying water 40 m
- East Route Project: the Yangtze River water
- Transfer Project: Dam Heightening
- Transfer Project: Aqueduct, Yellow River tunnel
- East Route Project: use of the original river
- Transfer Project: construction work
- West Line Project: Sources by water

Part IV: long-term project for the benefit of posterity

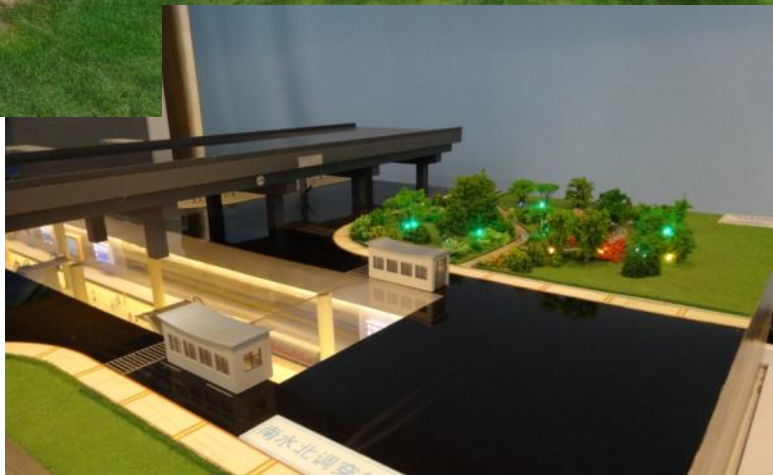


- Water supply and flood control
- Golden waterway
- Ecosystem
- Immigration Benefits

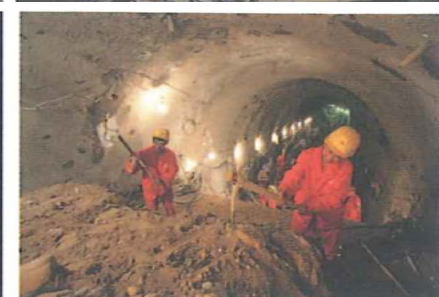
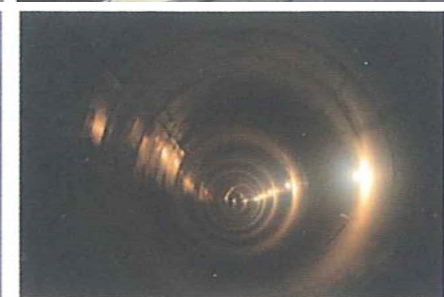
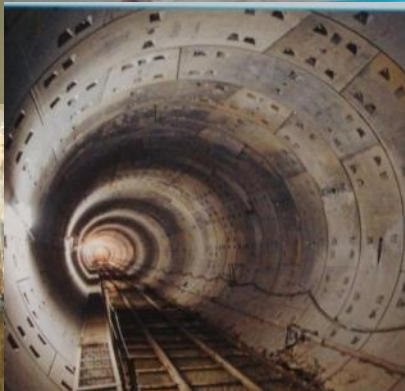
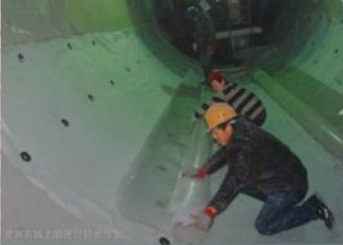
An Aside on Media: China compares its media manipulation with NSA's leaker Snowden: US is the "Master of Assholes," so our web monitoring is not so bad.

Not open to public. 1st foreign visitors.









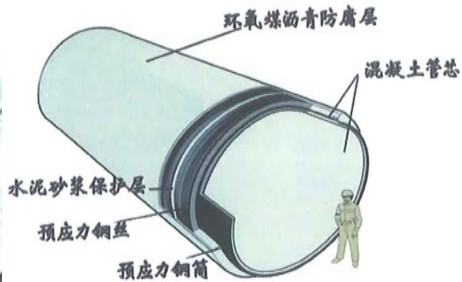
南水北调 北京

南水北调 争分夺秒
节约用水 一点一滴

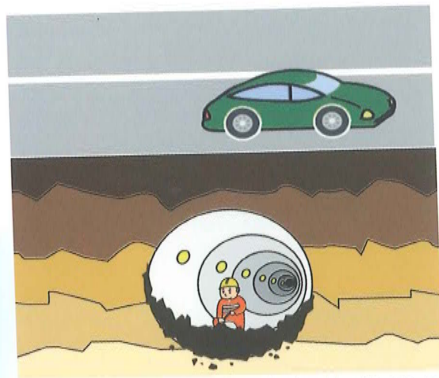
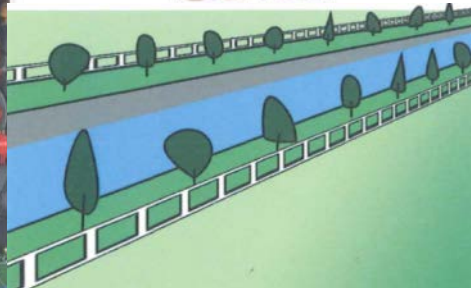


南水北调 争分夺秒
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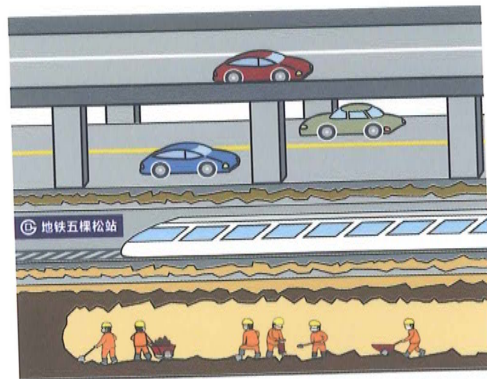
北京市南水北调办公室



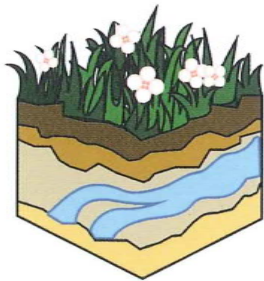
国内首次采用了直径4米的超大口径PCCD输水技术。完善超大口径PCCD的设计理论体系，研发了相应的设计、制造、安装及安全评估技术。



国际首例在城市快速路下复杂地层中，采用浅埋暗挖施工工艺的，距离最长的大规模输水隧洞。



密云水库



The Organic Co-op in Beijing



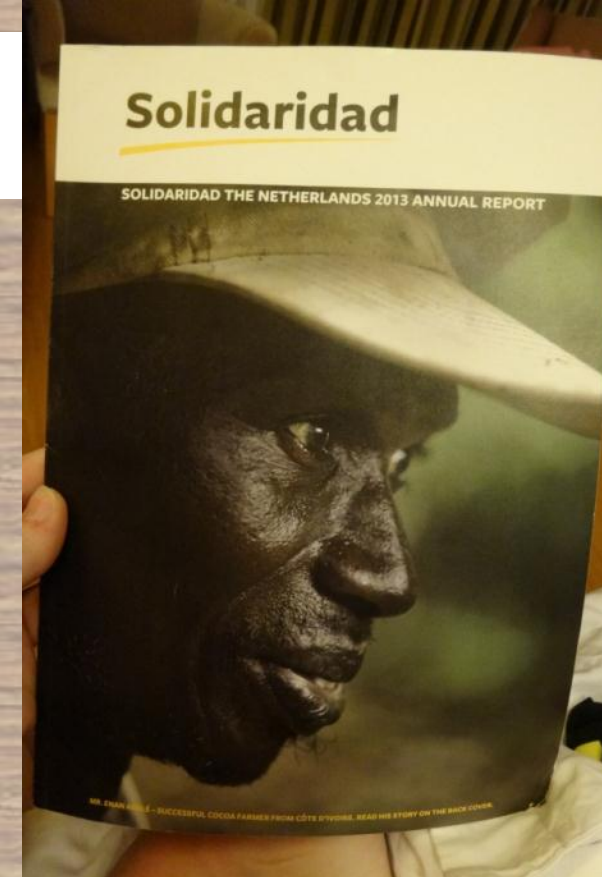
Improvement via NGOs

- Solidaridad
- Nature University (water facility entry then legal funding issues)
- IPE
- Green Leap Forward
- GONGO: Government Organized NGOs (weird invention with COI)

Generally,

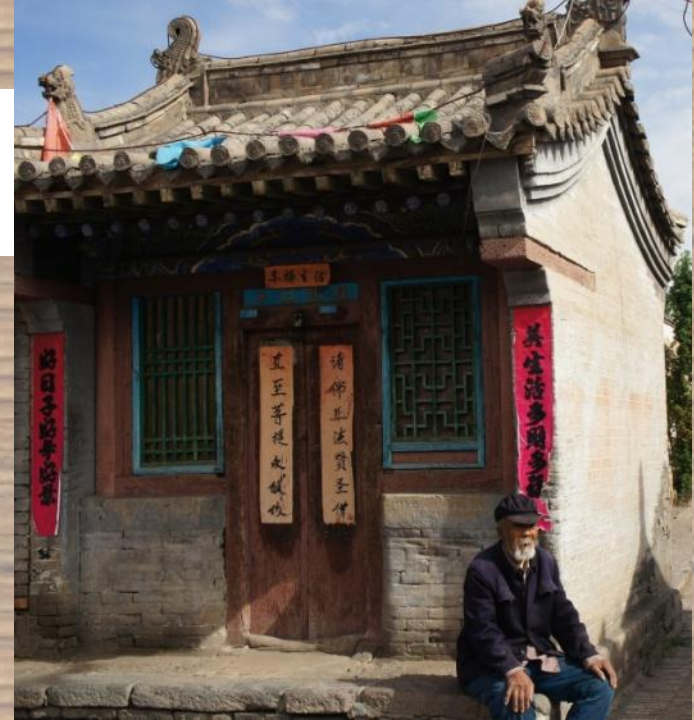
Environmental education

- Assisting in media censorship reform, spreading information on central government.
- Only local info, so **Selected** government officials hung out by central government.



Hebei and Shanxi Provinces

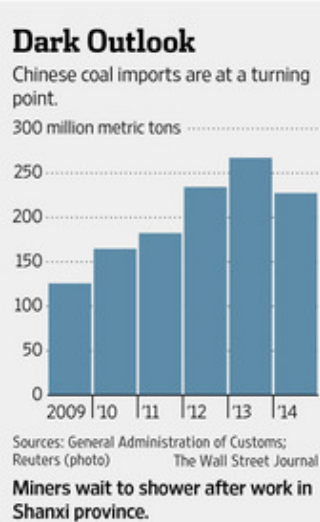
- Striking rural contrast to ultra-urban Beijing
- Still sustainability issues





King Coal

- Yu County: “The West Virginia of China”
- Village water shortages from coal washing and coal transport routes → desertification
- Coalholes from mining



"Flourishing Shanxi Palace Mine Garden Museum"

Jinhua Gong Kuangshan Gongyuan Bowuguan

晉華宮礦山公園博物館

Descended into the mine: 2.5km round trip.

900 m in, 115 m down , >400m of stairs







A former lakeside village – now trucks in water.



Energy...



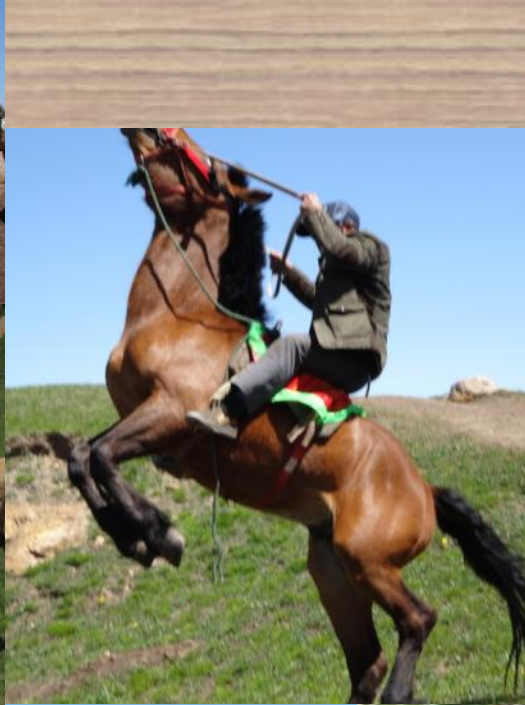
Strategic solar/wind development
Wind since Beijing Olympics
\$316B investment in hydropower

Ecotourism: The Grasslands

- Preservation = Reformulation + Exploitation
 - The Chinese Way: rebuild, restore, update, upgrade...
 - “Anti-John-Muir”
- Create a tourist attraction (\$\$\$)
- Example: Grasslands in the Air, Con don tien
 - Can see 2 provinces and 3 counties.
 - 2150m elevation mountain-top wind farm







Animal Husbandry Laws
Any grass-eaters are illegal, but enforcement would hurt economics





Holy Rock
since labeled that

*Inscribed 10,000
year old Ice Cave*



“Gorge of the Flying Foxes” Road

- 5M Yuan (\$800k US!), 27 tunnels, asphalted in 2008
- Built to increase tourism into the Lotus mountains
- Just see coal trucks



Trash? *What trash?*

Literally,
every low spot



Wang Jiuliang

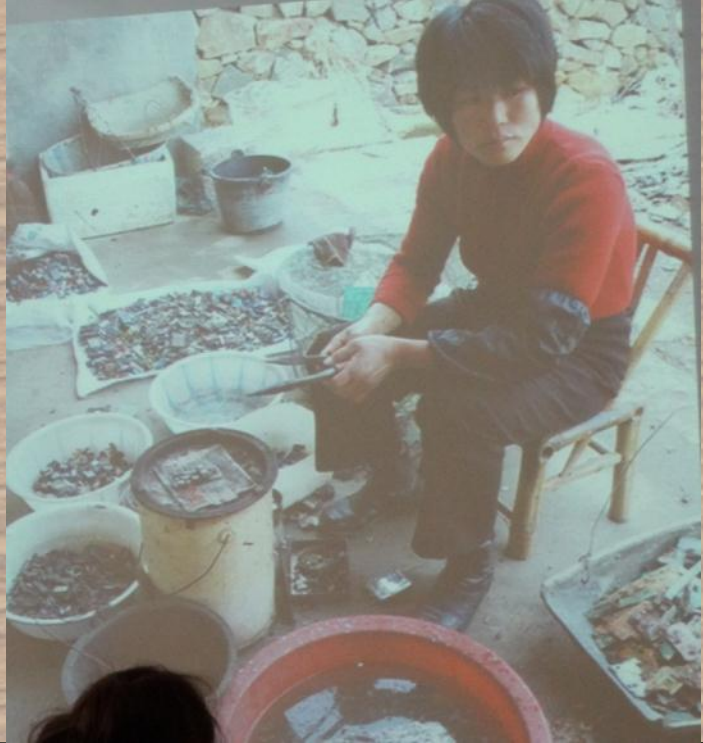


One man's trash is...



Wang Jiuliang





frontview.wordpress.com

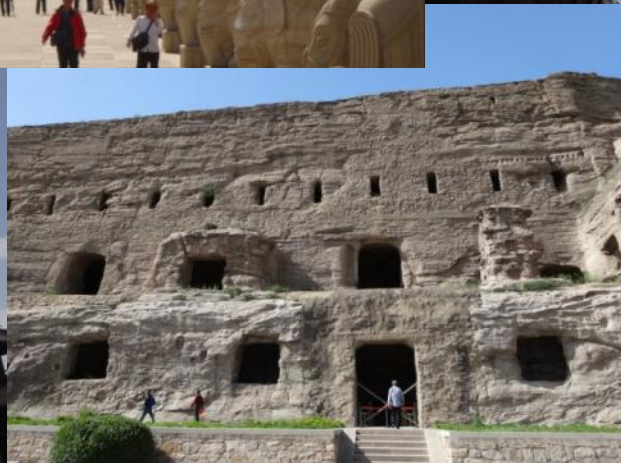


sometimes-interesting.com



Yungang Grottoes

A protected UNESCO World Heritage Site filled with ancient Buddhist art and sculpture and an exploited tourist attraction



Fake, Remanufactured, or Untouched?



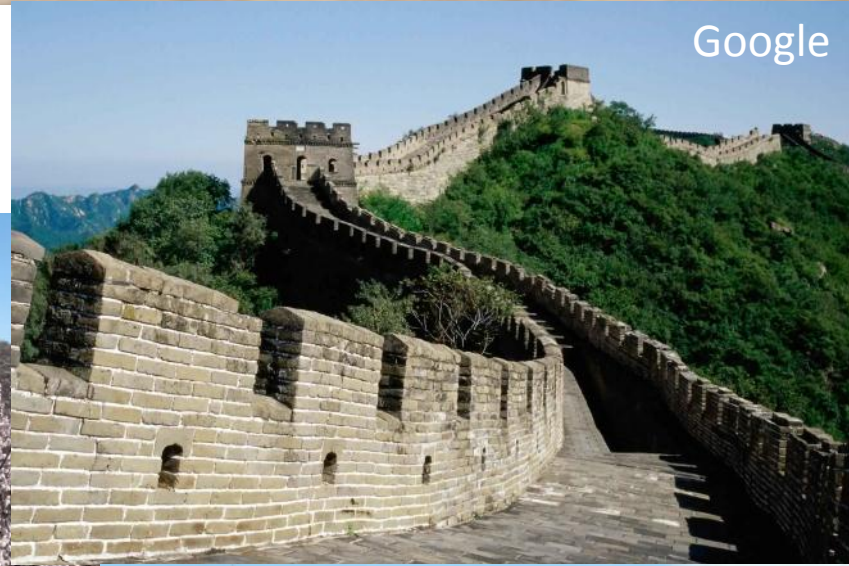
A small Daren village, Northern Shanxi province, the Loess Plateau

- Share meals, stay overnight, hike the wall.
- Self-organizing villages, resource challenges, houko/laws - old and young.

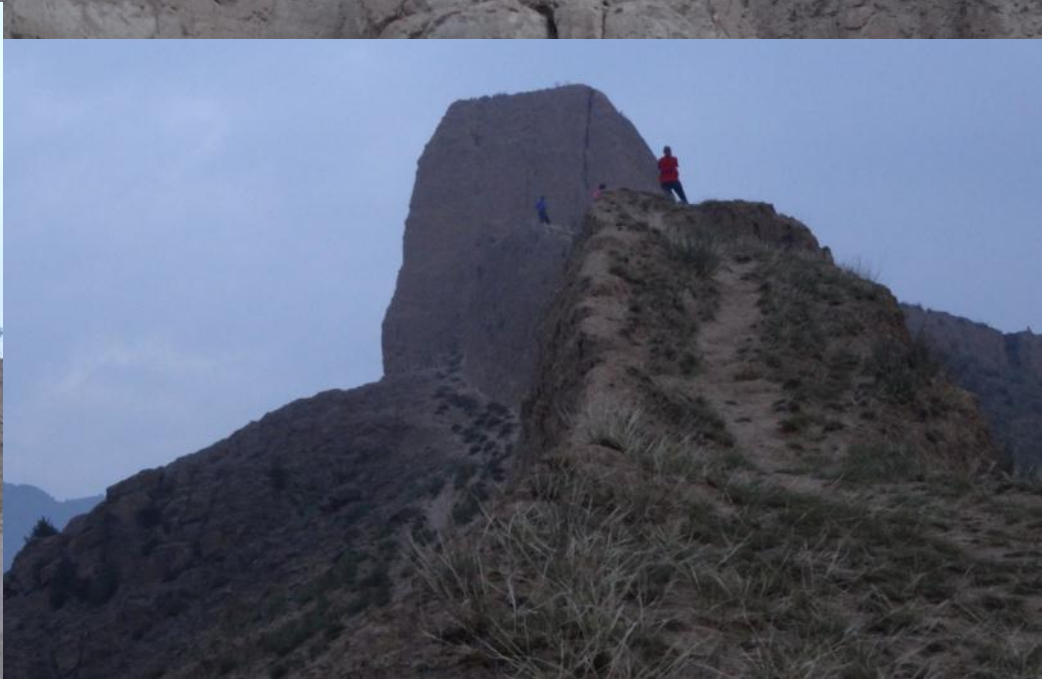


The Real Great Walls

- Reality: many earthen walls
- Exploitation:









China's Infrastructure: Superior to US

selectively applied, always at the environment's expense

“If you build it, they will *eventually* come.”

Example: Datong

“Modern-at-the-time” tools = same Great Wall



Datong



Google

Great Wall Forum

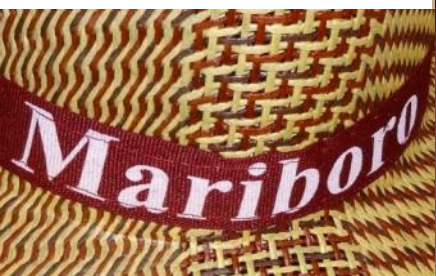
telegraph.co.uk







Just for Fun



Ancient frescoes of bureaucracy hell



design, peculiar building structure and excellent architecture.



Spirit and laugh of Beijingers



"Fortresstarily speaking"
"Fortologically speaking"
"Wallology"



Venerated
Mao



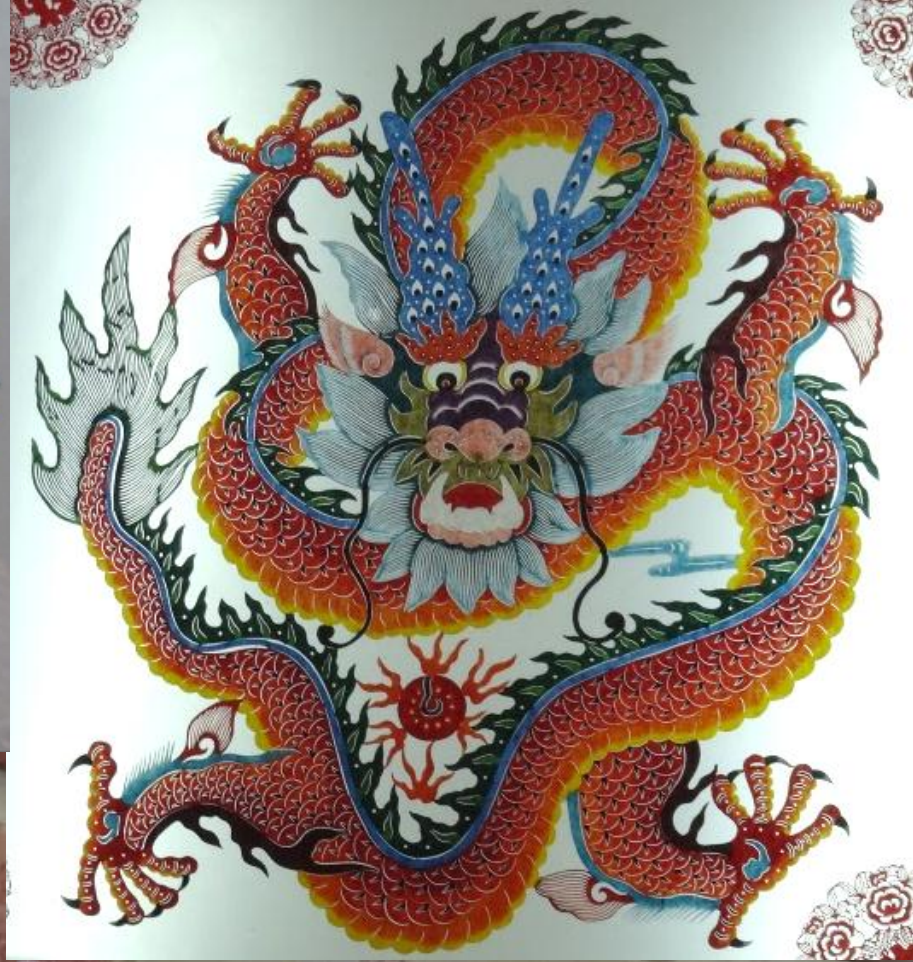
**Don't mess with
the Party.**



We as a group became a community.



3 剪纸侯
MARQUIS PAPER CUTTING



Gui mo hua = “Standardization”

- Line dancing in a square = “square dancing”
- Same approved songs, dance moves, and time limits



Chengdu



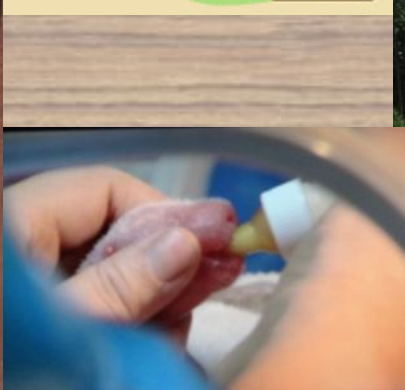
~\$640k US for office building and lab building



西南交通
大学九里校区
Southwest Jiaotong
University Jiuli Campus



交通隧道工程教育部重点实验室
Key Laboratory of Transportation Tunnel Engineering, Ministry of Education







Itinerary

- Tuesday June 2: Arrive; Welcome Dinner.
- Wednesday June 3: Lectures; Hotpot Lunch; Tiananmen, Qianmen; Hutong, Dinner.
- Thursday June 4: Lectures; Uyghur Lunch; Water Walk; Boat Ride.
- Friday June 5: Lectures; Lunch; Solidaridad; Nola Dinner.
- Saturday June 46 Lectures; Cafeteria Lunch; Organic Farm; Drive to Yu County; Dinner.
 - Drove from Beijing to the Little Donkey Farm (*xiao maolv youji nongchang* 小毛驢有機農場)
 - Drove from the Little Donkey Farm to Yu County (*Yu Xian* 蔚縣) in Hebei Province (河北省).
- Sunday June 7:
 - The Northern Directional Fort (*Bei Fang Cheng* 北方城), an example of a village fortress restored for the tourist trade.
 - The Monastery of Redoubled Peace (*Chong Tai Si* 重泰寺), a monastery operated by village donations
 - The Lone Fort Village (*Dan Hou Cun* 單壠村), a village dating from 1534, which has *not* been repaired in any way, with an abandoned temple to Guanyu.
 - Warm Springs Township (*Nuan Quan Zhen* 暖泉鎮) and the Old West Fort (*Xi Gu Bu* 西古堡), the biggest and best-preserved set of three fortress towns in all of Yu County. Included a tofu factory and a visit to an old house, as well as many temples and shops.
 - Optional walk to a the Middle Flower-Garland Temple (*Zhong Huayan Si* 中華嚴寺) located outside of the Su Officials' Fort (蘇官堡), a small monastery being revived and repaired by a community of Monks from the city of Xuanhua (宣化)
- Monday June 8:
 - Drove up through the Gorge of Flying Foxes (*Fei Hu Yu* 飛狐峪) to the Grasslands in the Sky (*Kong Zhong Caoyuan* 空中草原) in the midst of the Taihang Mountains (太行山). Had an interview with the Marketing and Outreach Manager of the company which manages the grasslands.
 - Visited the company called Paper Cutting Marquis (*Jian Zhi Hou* 剪紙侯), where we visited their show room, learned to cut from the workers there, and had tea with one of the head artists.
- Tuesday June 9:
 - Drove from Yu County to Yangyuan County (陽原縣), through the central coal mining areas of Yu.
 - Visited the Fort of the Opening of Yang (*Kai Yang Bu* 開陽堡), the most ancient village fort in the area, which has a gatehouse dated from the Tang dynasty (AD 618-907).
 - Ate the famous "Knife-Cut Noodles" (*Dao Xiao Mian* 刀削麵) of the Datong area.
 - Crossed the border into Tianzhen county (天鎮縣) in Shanxi Province (陝西省), and then traveled to the Tianzhen county seat, where we visited the Benevolent Cloud Monastery (*Ci Yun Si* 慈雲寺), also dating from the Tang period.
 - Traveled to the village of Second Li [Family] Gap (*Li Er Kou* 李二口) on the Ming-dynasty outer Great Wall line, at the border of Shanxi Province and Inner Mongolia. Had dinner in village houses and then slept in a raised bed in the village (a home-stay).
- Wednesday June 10:
 - Climbed the Great Wall at the village
 - Re-united for a picture at the Great Wall near Second Li [Family] Gap.
 - Drove to Datong City (大同市) and the "Flourishing Shanxi Palace Mine Garden Museum" (*Jinhua Gong Kuangshan Gongyuan Bowuguan* 晉華宮礦山公園博物館). Descended into the mine (2.5km round trip).
 - Went across the valley to visit the Yungang Grottoes (*Yun'gang Shiku* 雲岡石窟), a series Buddhist rock caves first begun in the 4th century AD.
 - Visited the Datong old city and the newly developed streets around the Flower Garland Monastery (*Huayan Si* 華嚴寺).
 - Overnight sleeper train back to Beijing.
- Thursday June 11: Back to hotel in late morning; Free Time; Farewell Dinner.
- June 12 to June 16: Visit former student Dr. Weiping Xu of Southwest Jiaotong University in Chengdu, Sichuan.