



CHINA WATER RISK

A Changing Waterscape
Impacts From A 'Beautiful China'
建设美丽中国的影响

April 24 2018

CHINA WATER RISK is a non-profit initiative dedicated to addressing business and environmental risk arising from the country's urgent water crisis.

We aim to foster efficient and responsible use of China's water resources by engaging the global investment and business communities, civil society and individuals in understanding and managing China's water risk.

ACT NOW, visit us at www.chinawaterrisk.org



LATEST FEATURES

Yangtze Flows: Pollution & Heavy Metals
Areas along the Yangtze dominate Chinese production but at what cost? CWR's Hu analyses water & food risks ... [more](#)

2015 State of Environment Report Review
China says overall environment quality worsened in 2015; get the latest on rivers, groundwater, lakes & reservoirs ... [more](#)

Water-nomics: Trade-offs Along The Yangtze
Check out key findings from the CWR & MEP FECO brief on various strategies to find the right mix of water-nomics ... [more](#)

Floating Solar: A Solution for China?
Floating solar is well-suited to China's hunger for power and its limited water & land. CWR's Theriot & Xu expand ... [more](#)



ANALYSIS →

China's Soil Ten
With ~1/5 of China's farmland polluted, the Soil Ten Plan could not come sooner. See impacts to the "Hateful Eight" polluting industries & get the distilled version of the 231 actions in our review ... [more](#)



OPINIONS →

Plastic, China & The Circular Economy
Only ~10% of plastics gets recycled, but this is where opportunities lie. Doug Woodring, founder of Plasticity Forum, shares key points from the 5th annual forum on the circular future of plastic ... [more](#)



NOTICES & EVENTS →

CWR & MEP FECO Water-nomics of the Yangtze River Economic Belt
17 Jun 2016 - CWR & MEP FECO publish joint brief on Yangtze water-nomics

Singapore International Water Week
10-14 July, 2016
Attend SIWW to talk with industry players on the latest water innovations ... [more](#)

SECTORS →

AGRICULTURE →

During the 13FYP China is building a "Beautiful China", with "blue skies, green land & clear running water". See what this means for you... [more](#)

POWER →

Water risks are omnipresent but yet their financial valuation is still missing. CWR's Theriot on existing initiatives, gaps & numbers... [more](#)

FOOD & BEVERAGE →

In 20 years China has become the world's No. 1 bottled water consumer but at what cost? Does it mean safer water? CWR's McGregor & Liu expand... [more](#)

METALS & MINING →

Dr. Dryden, inventor of AFM®, shares how the upcycled glass filter means lower bacteria and costs; plus multiple industry applications... [more](#)

TEXTILES →

32% - 75% of hides, wool, cotton, chemical fibre & silk are either made in or passed through China as imports. CWR's Tan on this exposure... [more](#)

ELECTRONICS →

Paper packaging in China used the same amount of water as Beijing's municipal use & discharges similar amount of wastewater as coal... [more](#)

BIG PICTURE →

EAT A STEAK OR TAKE A BATH?



8oz steak uses ~3,500 litres of virtual water = a staggering 17 bathtubs filled to the rim (average bathtub holds 200 litres of water)

SEE THE WATER 'FOODPRINT' OF YOUR DIET IN THE BIG PICTURE

NEWS →

February 02 2016, Ministry of Agriculture of the People's Republic of China
China works for more efficient water use in agriculture
BEIJING, Jan. 30 (Xinhua) -- China plans to make the water use in agriculture more efficient with measures such as tiered pricing, wider...

January 07 2016, China Daily
Xi stresses 'green development' along Yangtze River - China - Chinadaily.com.cn
Chinese President Xi Jinping holds a symposium on improving the development of the Yangtze River Economic Belt in Southwest China's...

February 02 2016, Ministry of Agriculture of the People's Republic of China

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What President Xi wants ...



A BEAUTIFUL CHINA ...

... where the sky is blue, the land is green and the water runs clear

美丽中国

... 建设天蓝、地绿、水清的美丽中国

Green lands...

34%

OF CHINA'S SOWN AREA
LIE IN WATER SCARCE REGIONS

全国**34%**的播种面积位于
水资源短缺地区

19.4%

OF CHINA'S FARMLANDS
ARE POLLUTED

全国**19.4%**的农
地被污染

Clear waters...

60%

OF CHINA'S GROUNDWATER
IS BADLY POLLUTED

全国60%的地下水
被严重污染

28.8%

OF CHINA'S RIVERS ARE
UNFIT FOR HUMAN TOUCH

全国28.8%的河
流不适合人体非
直接接触

Back in 2014 ...



WAR ON POLLUTION

向污染宣战

“We will resolutely
declare war against pollution
as we declared war against poverty”

“像对贫困宣战一样 坚
决向污染宣战”

Premier Li Keqiang
总理李克强
National People's Congress, 2014

Ecological Red Lines are drawn ...



大气十条

AIR TEN

2014

LAW PASSED: 2015
EFFECTIVE: 2016



水十条

WATER TEN

2015

LAW PASSED: 2017
EFFECTIVE: 2018



土十条

SOIL TEN

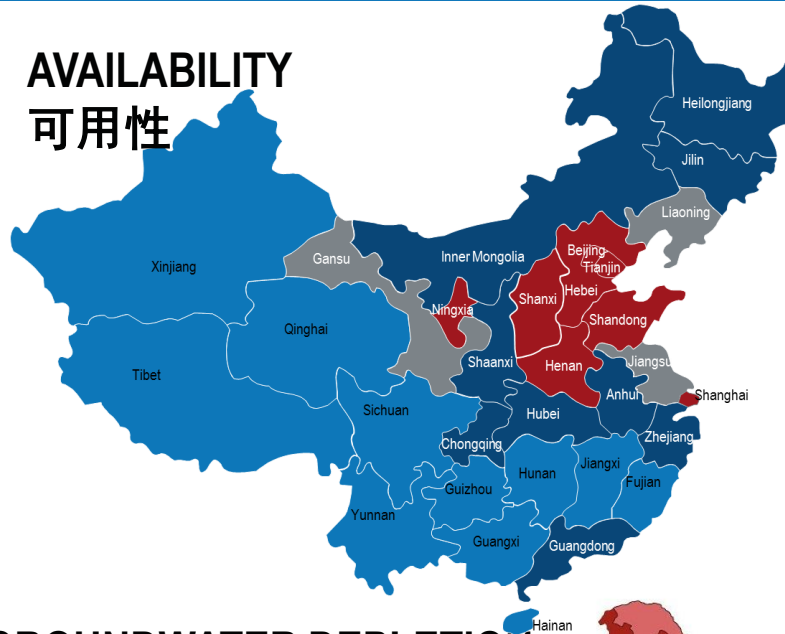
2016

LAW O/S

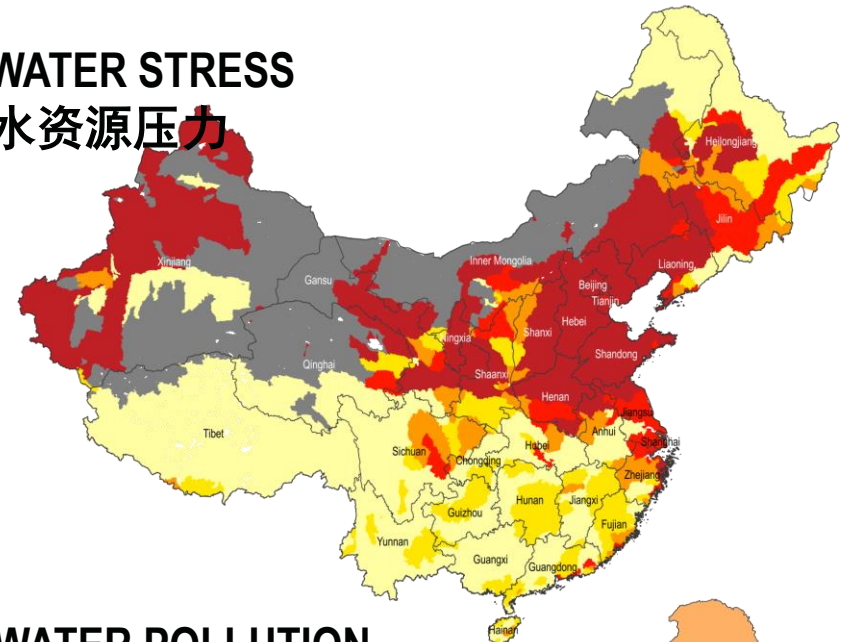
+ Amendments in the Environmental Protection Law
+ 环境保护法修订

Different maps = major water challenges...

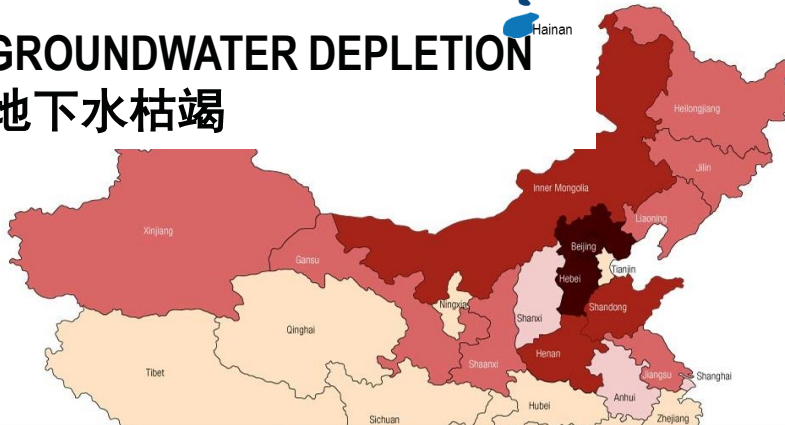
AVAILABILITY
可用性



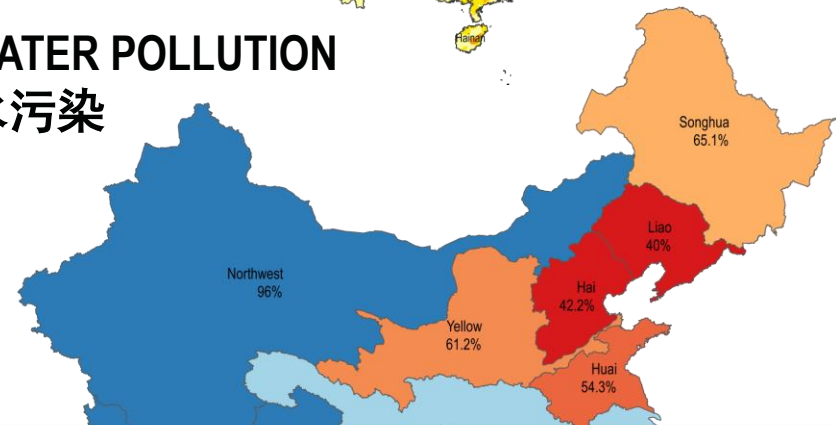
WATER STRESS
水资源压力



GROUNDWATER DEPLETION
地下水枯竭

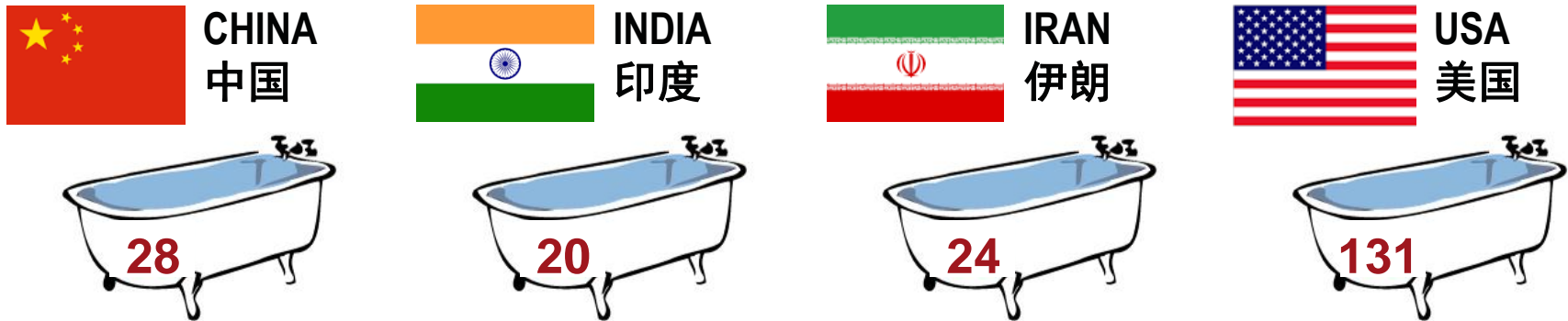


WATER POLLUTION
水污染



Managing Mismatch / \$\$\$ vs Environment
管理差别 / \$\$\$ vs 环境

The real liquidity crisis ...



TOTAL ANNUAL RENEWABLE RESOURCES = WATER/ PAX/ DAY

全年可再生水资源总量 = 人均日用水量

Asia's future = business unusual / Local risks = global disruptions
亚洲的未来 = 新的商业模式 / 地区性风险 = 全球性影响

Making stuff for everyone ...

CHINA'S 2015 SHARE OF

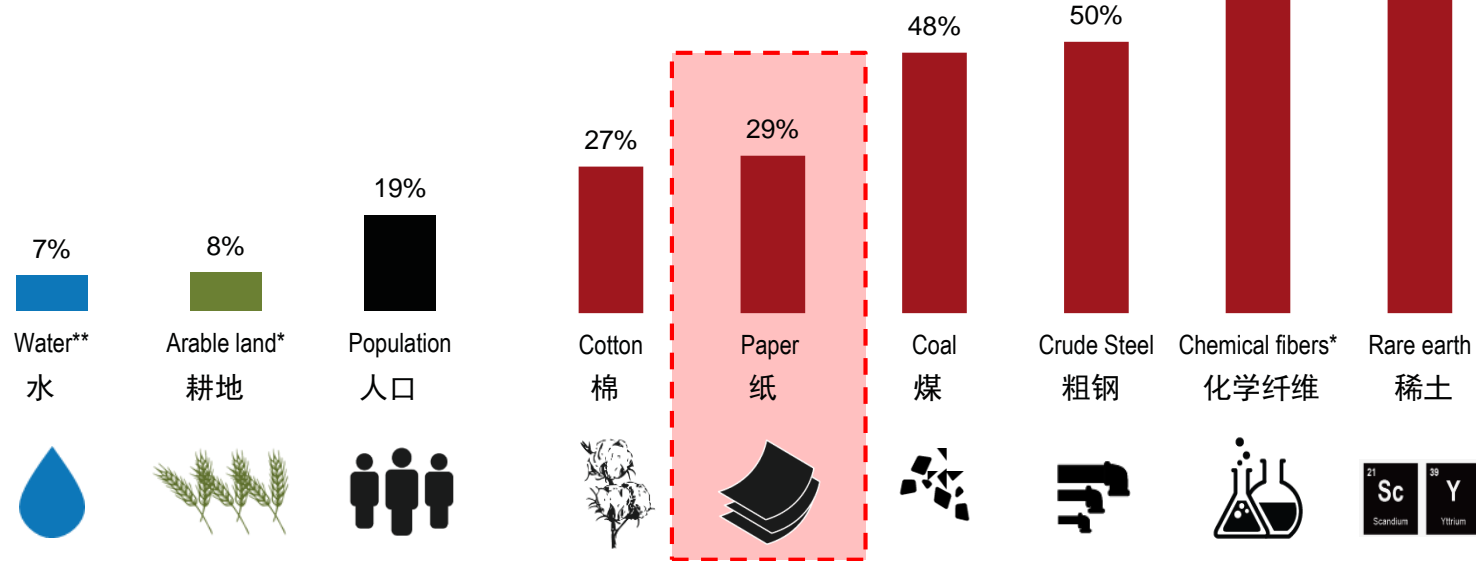
GLOBAL RESOURCES

2015 中国占全球
资源比重

VS.

GLOBAL PRODUCTION

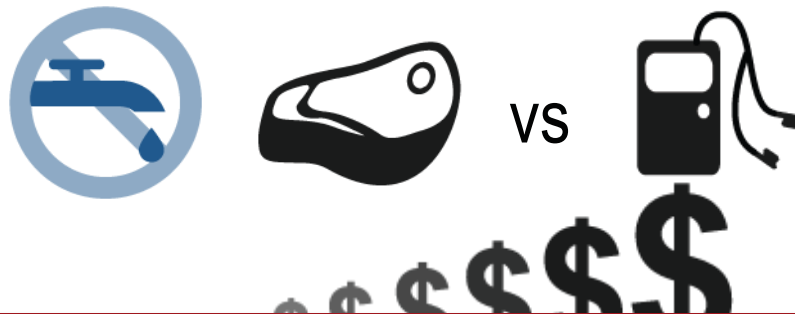
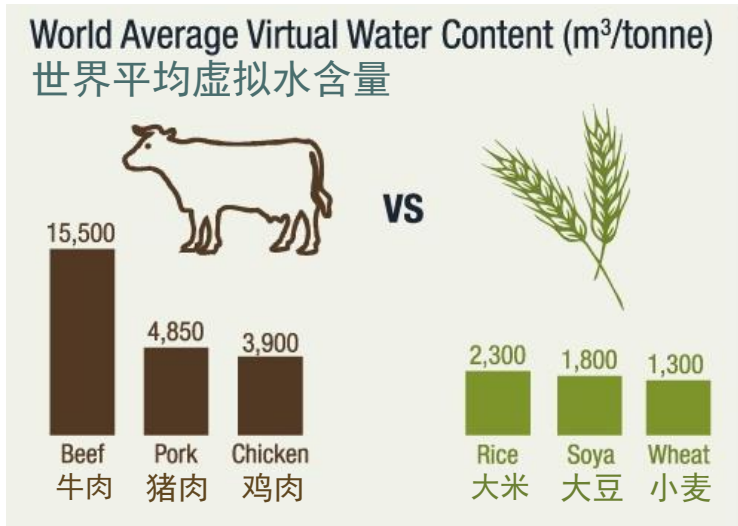
2015 中国占全球生
产比重



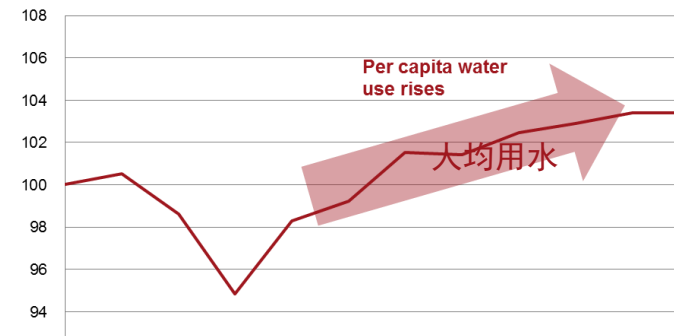
Source: China Water Risk based on FAO, UN, NBSC, BP, World Steel, CLSA Report "Toxic Phones: China Controls the Core" (2017)

Can China continue to be the for the rest of the world ?
中国可以继续做全球的生产地吗？

Choices, choices, choices ...



2000-2011: rising water use per capita



Allocation of resources = fine balancing act
资源分配需要良好的平衡

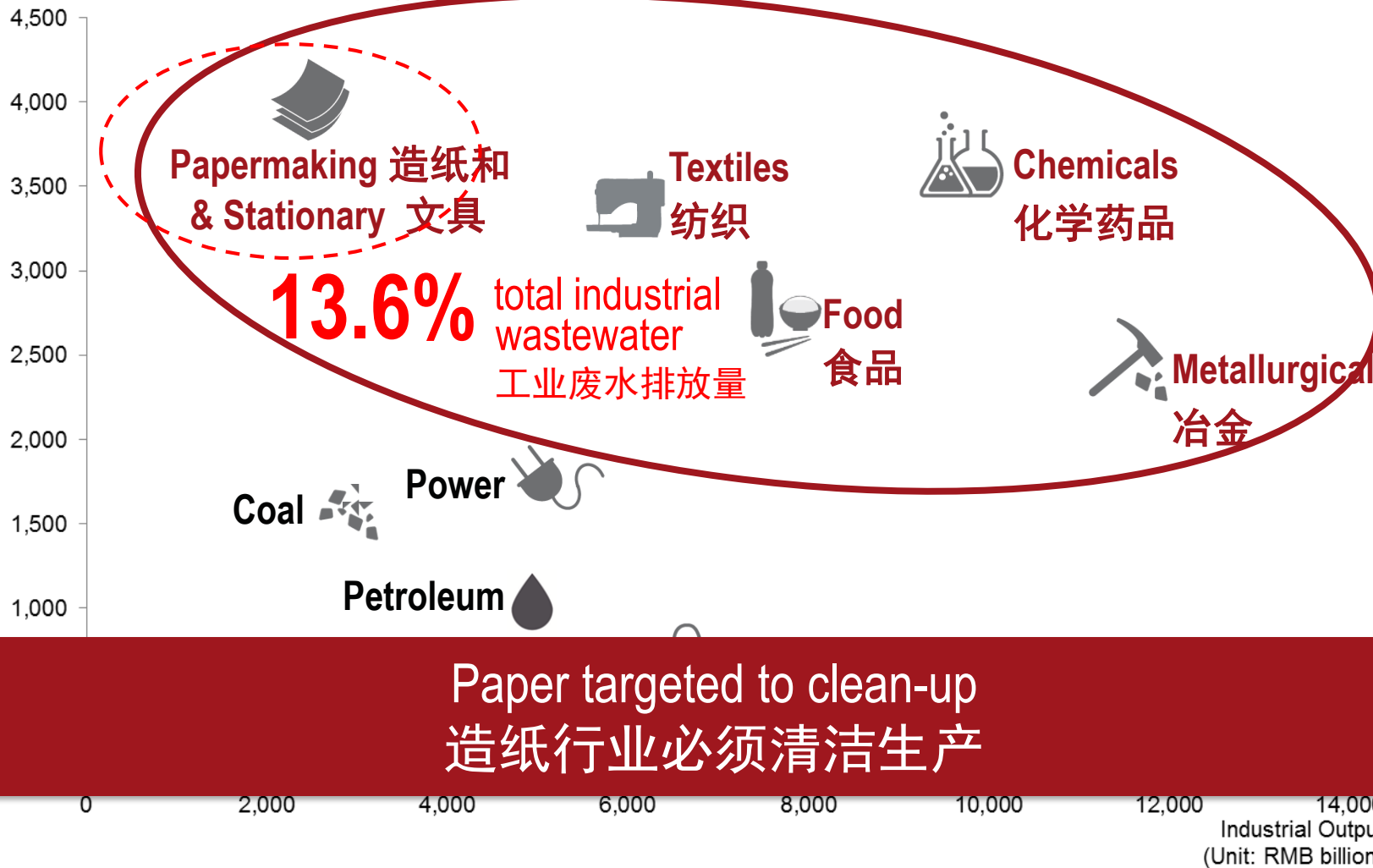
Sectors



Wastewater Discharge
(Unit: million tonnes)



Water Ten Plan: key in tackling water pollution
水十条：治理水污染的关键



Circular Ten vs Made in China 2025

Circular Economy 循环经济
Coal
Power
Steel
Textiles
Nonferrous Metals
Petroleum & Petrochemicals
Chemicals
Food
Building Materials
PAPER 造纸

Made in China 2025 中国制造2025
Energy Saving & Clean-Energy Vehicles
Power Equipment
Biomedical & High Performance Medical Devices
NEW MATERIALS 新材料
Next Generation IT
Advanced Rail Transportation Equipment
Advanced CNC Machine Tools & Robots
Agricultural Machinery
Aerospace Equipment
Marine Engineering Equipment & High-tech Ship

Both lists point to a Business Unusual future
两个战略都指向未来新的商业模式

Paper sector being hit...

MEP investigates 23 factories; many fined, ordered to stop production & 4 arrested

多家造纸厂被环保督查组勒令整改、停产

15-10 来源：华印纸箱

中国纸业网 CHINAPAPER.NET

多地造纸企业被停产 一个月原纸产能将减少27.5万吨

Factories closed in many places; capacity falls by 275,000t in one month

环保部查处23家造纸厂：多家遭停产或罚款、4人被抓！

发布日期：2018-02-24 来源：华印纸箱 责编：perhaps 浏览次数：1344 版权与免责声明

别指望环保风暴会停 广东247家造纸、纸箱厂再遭严查

发布日期：2017-01-13 来源：华印纸箱

Don't expect the environment "storm" to end: 247 factories investigated in Guangdong

年内最大规模环保风潮袭来：小型造纸、包装等企业被扫荡

发布日期：2016-11-03 来源：包装地带



市环保局兵分五路，督促造纸企业拆除淘汰机型

环保限产带来纸价波动 造纸行业集中度将大幅提升

来源：浏阳网

分享到：  微信  更多

无极 • 2017-02-04 11:36:50 来源：前瞻产业研究院

 422

 0

Paper sector being hit...

“Virtually impossible for small papermaking enterprises to obtain pollutant discharge permits”

WATER TEN | 水十条

- **249** co's have upgraded to meet “clean production upgrade”
家工作企业完成清洁化改造”
- **119** of which installed advanced reuse facilities
其中119家加装先进再用水设施

INDUSTRY CONSOLIDATION | 行业集中

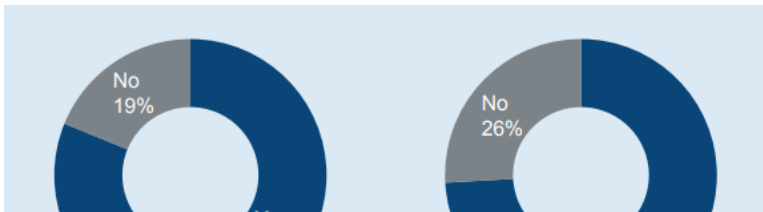
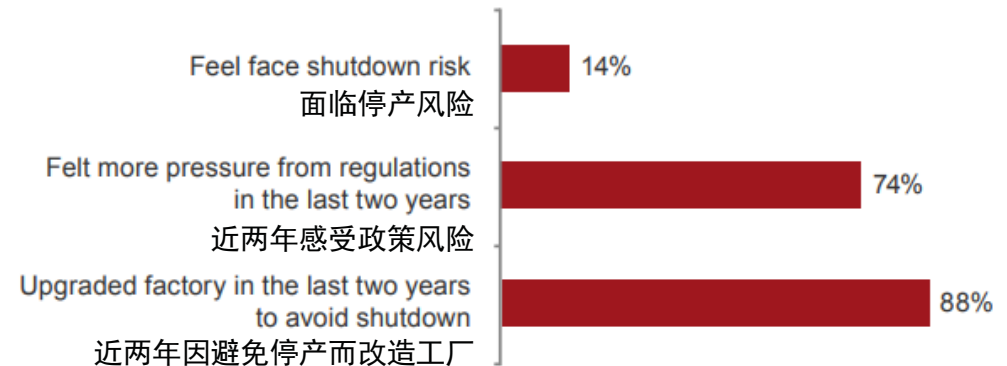
- 2013: **7,158**
- 2017: **6,636 (-522)**

Textiles also being hit...

85 CHINA TEXTILE MANUFACTURERS 纺织品制造商



Manufacturers on the pressure from regulations...

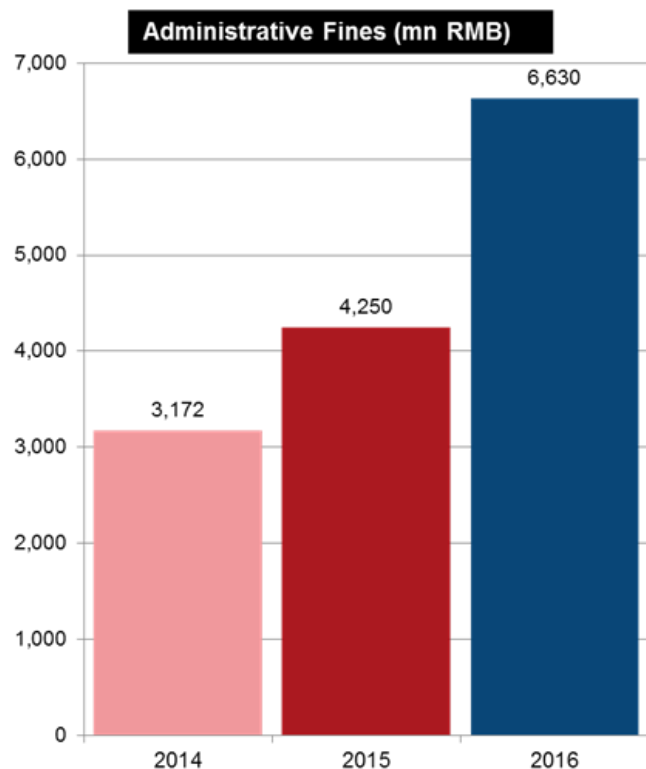


33% \$\$\$

SAY OPERATING COSTS INCREASE BY >20%

运营成本上升>20%

Impact on business 对生意的影响



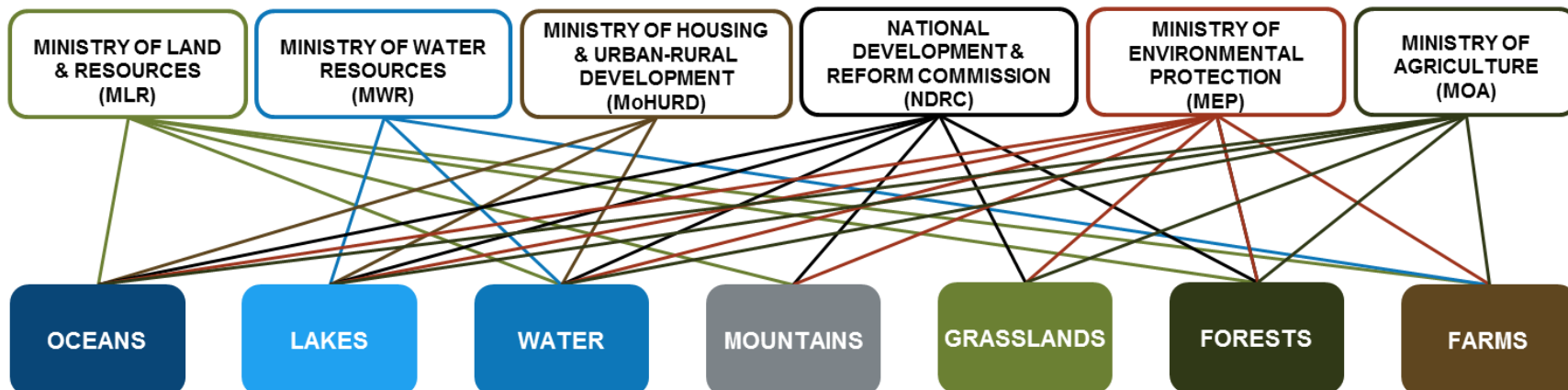
2018 WATCH OUT FOR:

- Water Ten Law
水污染防治法
- River Chiefs
河长制度
- Water Tax Expansion
水资源税改革试点
- Ministerial Reform
国家机构改革
- Water trading rights expansion
推进水排污权有偿使用和交易试点
- Environmental Risk Assessment
环境风险分析

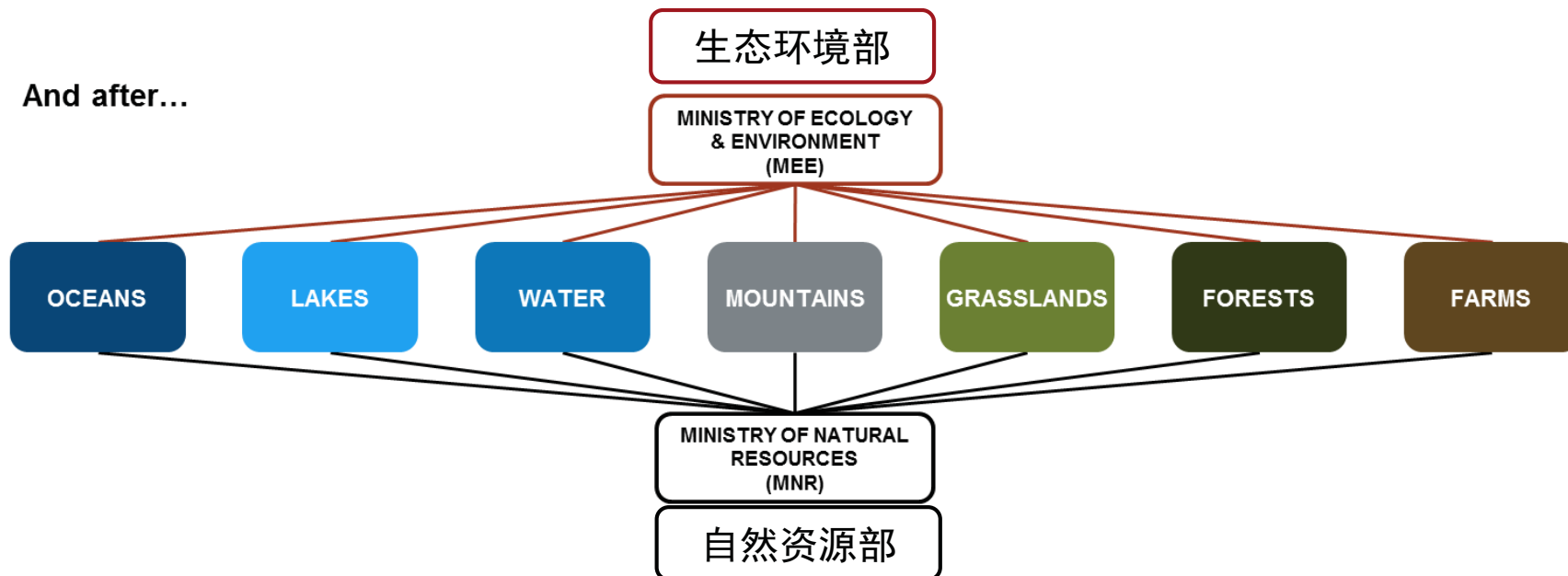
Pollution crackdown not simply empty talk
防治污染不只是纸上谈兵

Government reform for a Beautiful China

Before...



And after...



30-40% total municipal waste is **packaging waste**
生活垃圾来自包装废弃物



45% only is recycled
被回收



78% environmentally sound packaging
对环境友好的包装材料

73% willing to pay more
消费者愿意支付更多

Opportunity for first movers
机会属于先行者

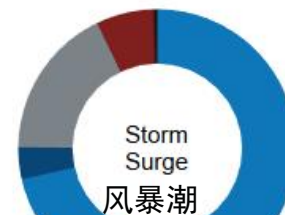
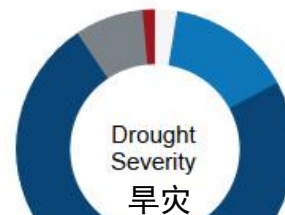
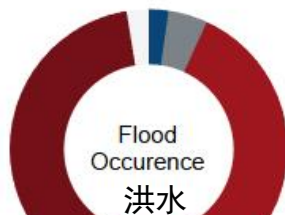
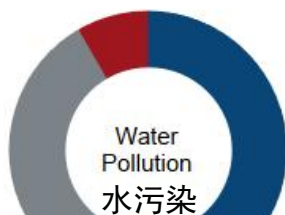
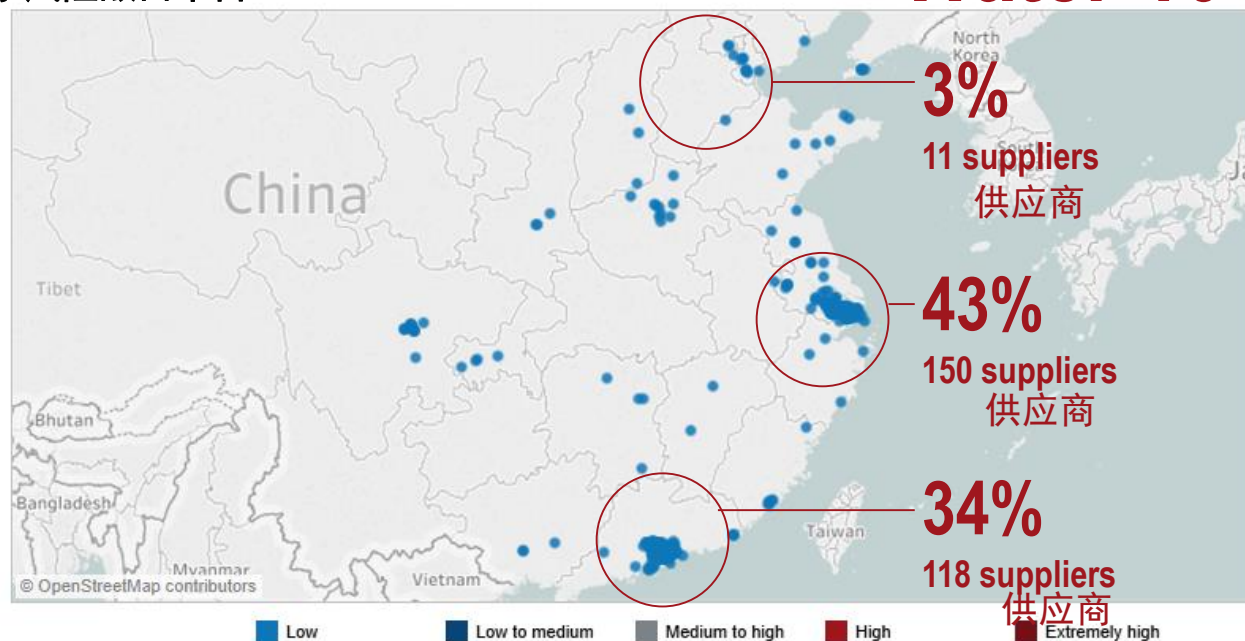
Different water risks at-a-glance

WATER RISK EXPOSURE DASHBOARD 水风险敞口平台

Water 10

Elec Co. C
Electronics

350
Suppliers
in China



Asset, raw material & supply chain exposure = need to waterproof portfolios

What President Xi wants ...



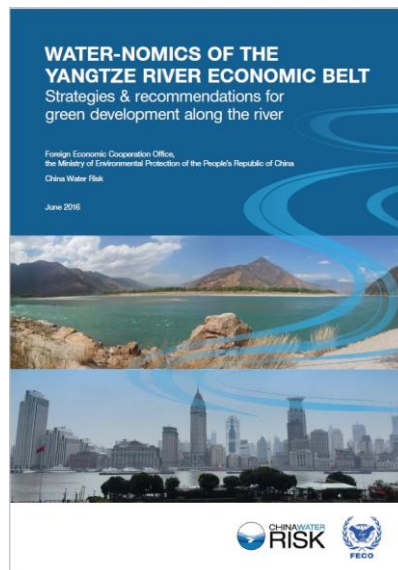
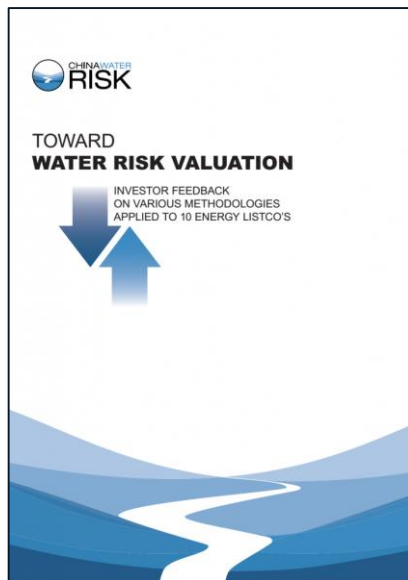
A BEAUTIFUL CHINA ...

... where the sky is blue, the land is green and the water runs clear

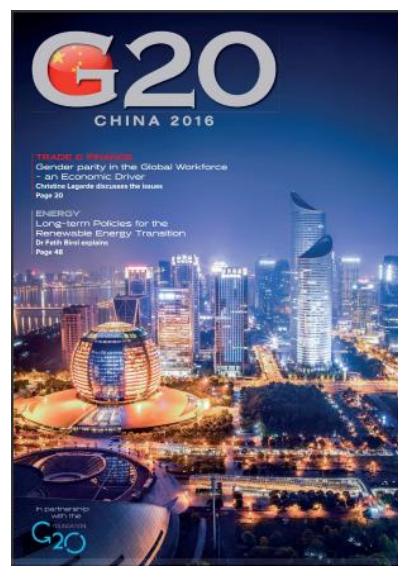
美丽中国

... 建设天蓝、地绿、水清的美丽中国

Decisions today for water tomorrow



chinawaterrisk.org



WATER MATTERS
DECISIONS TODAY FOR WATER TOMORROW