

Press Release - CWR New Report: “No Water, No Growth – Does Asia have enough water to develop?”

Hong Kong, September 18th, 2018 – China, India and other countries in Asia face urgent water challenges and won't have sufficient water to develop further while ensuring food and energy security, says a new and sobering report by China Water Risk (CWR) launched today.

The Hindu Kush Himalayas (HKH) is the source region for the 10 major rivers that supply 40% of Asia's population across 16 countries. With climate change already threatening the upper watersheds and river flow, governments should be looking at less water-intensive and pollution-free development, according to the report “No Water, No Growth – Does Asia have enough water to develop?”

“One in every 2.5 Asians, or 1.77 billion people, live along the rivers that have their source in the HKH,” said Debra Tan, director of CWR, a Hong Kong based think tank. “Over USD4 trillion of GDP is generated in the 10 river basins, which provide one-third of the 16 countries' surface water, yet there is almost no conversation right now on the threats to Asia's glaciers from climate change, the water they hold or the consequent risks faced by these rivers.”

Water from the 10 rivers is vital to the social and economic development of Asia, which has been following an unsustainable water-intensive and highly polluting export-led consumption growth model in recent decades, the report argues.

To achieve a per capita GDP of over USD50,000, the US uses at least 1,543m³ of water per person per year, which is only 16% of its total annual renewable water resources of 9,538m³ per person. Yet China and India are only endowed with total annual renewable water resources of 2,018m³ per person and 1,458m³ per person respectively, the report says. Two of the worlds' most populous countries will thus be faced with no choice but to create a new development paradigm if they want a future with water.

The need to shift to “business unusual” is becoming more urgent as temperatures will continue to rise, exacerbating Asia's water challenges. Increases in temperatures will double across six of the 10 basins in the next 50 years compared to the past 50 years, according to the report. At the same time, snowfall will continue to decline with future losses likely more than doubling for the Indus, Tarim and Ganges.

While four out of the 10 rivers will see a reduction in river flow by 2055, more people will be flocking to the basins as many of the continent's major cities and important economic hubs are located there.

“For such an important area, we still lack enough response and action” said Professor Shaofeng Jia, the Deputy Director of the Center for Water Resources of the Chinese Academy of Sciences (CAS-IGSNRR), who provided technical support to the report, including the data collection, estimations and climate scenario modelling for the 10 river basins.

“Agriculture and energy play key roles as the two largest water users,” said Feng Hu, CWR's Water-nomics lead and co-author of the report. “We need a new paradigm of ‘business unusual’ and circular economies in Asia where there is less waste, better efficiencies in resource use and curbed demand.”

The report says, however, that balancing food and energy security and shifting away from a largely agri- and export-led driven growth model will likely cause disruptions with material implications for businesses and trade, not just for Asia, but globally. The impact is far-reaching.

Getting perspective is important, said Tan “if you emptied out the entire annual flow of the Ganges River Basin, it would not even fill up Lake Erie, the smallest of the Great Lakes in North America but yet that basin supports a population almost twice that of the US.” The clustering of people and thus the economy mean that a third of India's GDP is generated along the Ganges. She urged policy makers, businesses

and investors to assess these clustered risks. “We must consider basins risks from mountain-to-the-ocean if we are to waterproof our assets.”

But this could be easier said than done as eight of the 10 HKH Rivers are transboundary. The 10 major rivers analysed in the report are: the Amu Darya, Brahmaputra, Ganges, Indus, Irrawaddy, Mekong, Salween, Tarim, Yangtze and Yellow Rivers.

These flow through 16 countries, namely Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Kyrgyzstan, Laos, Myanmar, Nepal, Pakistan Tajikistan, Thailand, Turkmenistan, Uzbekistan and Vietnam. Decisions made by upper riparian countries will affect the others but bilateral/ multilateral agreements to ensure equitable use of shared water resources are still lacking.

Still, the report suggests that China and India, which largely control the HKH headwaters, must take the lead in the Water-nomics conversation on regional economic cooperation and transboundary water issues. It's time to move the conversation on water from 'access to clean water' to 'Water-nomics'. Indeed, China has started transitioning its water-intensive and polluting industries toward a circular economy, promoting Made in China 2025 and trade through the ambitious Belt & Road Initiative.

“Through their analysis, CWR makes a powerful case for policy makers, water managers, businesses and project financiers to address interdependencies surrounding water” said water laureate Jeremy Bird, the former Director General of the International Water Management Institute, who also chaired the Mekong River Commission.

“The future of Asia is at stake,” Tan said. “We face a triple threat - not enough water to develop, climate change and clustered assets along vulnerable rivers. Hundreds of millions of lives and trillions of dollars are at risk. We must understand our real liquidity constraint so that we make better policy, investment and business decisions today for a water and economic secure tomorrow. We must not fail, for water is the only resource we cannot survive without.”

Report Link:

<http://www.chinawaterrisk.org/wp-content/uploads/2018/09/CWR-Report-No-Water-No-Growth.pdf>

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About CWR

China Water Risk (CWR) aims to foster sound decision-making today for a water-secure tomorrow in Asia by helping businesses, investors and policy makers navigate complex and interlinked water challenges. We strive to be the “go-to” resource on water risks and collaborate with experts, research & scientific institutes as well as IGOs and NGOs to provide the latest views on water & climate risks in the region. In addition to proprietary research in our three focus areas of Water-nomics, Water Risk Valuation & Business Unusual, we also co-publish policy briefs with government-related bodies in China and beyond. We engage extensively with the business and investment communities and reports we have written for financial institutions have been considered ground-breaking in the understanding of water risks across sectors we cover. Established in 2011 and based in Hong Kong, CWR is a non-profit initiative of the ADM Capital Foundation. www.chinawaterrisk.org

Parties involved in the report:

Report Partner

About CAS- IGSNRR

Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (CAS-IGSNRR) is China's leading multidisciplinary research institute that aims to solve major natural resource and environmental problems related to national sustainable development. Its research focuses include physical geography and global change, human geography and regional development, natural resources and the environment, geographical information systems and surface simulation, the terrestrial water cycle and water resources, ecosystem network observation and modelling, and Chinese agricultural policy. The institute is home to the State Key Laboratory of Resources and Environmental Information Systems & several other CAS key laboratories, and supports two national field observation stations including the Lhasa Plateau Ecological Research Station. english.igsnr.cas.cn

CWR Core Funders

About ADMCF

The ADM Capital Foundation (ADMCF) has incubated and sponsored the founding of CWR. ADMCF supports CWR through core grants and the provision of office space. ADMCF is an impact driven foundation focused on making change in Asia across five key areas: marine ecology, water security, air quality, wildlife trade and forestry conservation finance. ADMCF has tax exempt status under Section 88 of the Hong Kong Government Inland Revenue Ordinance. It also has received 501(c) (3) charitable status in the United States. www.admcf.org

About RS Group

RS Group has been a core funder of CWR since 2013, allowing CWR the flexibility to drive funding to areas that can catalyse maximum impact. RS Group is a family office that focuses on sustainability. It believes that it in new, collaborative approaches to investment, business and philanthropy are needed if we are going to build a global community where social progress and economic development occur in harmony with nature. www.rsgroup.asia

About RBF

The Rockefellers Brothers Fund (RBF) has funded CWR since 2013. Originally funds were project focused but as CWR grew, RBF support evolved into core grants allowing CWR the flexibility to drive funding to areas that can catalyse maximum impact given the fast-moving environmental landscape in China. The Rockefeller Brothers Fund advances social change that contributes to a more just, sustainable, and peaceful world. It has 501(c) (3) charitable status in the United States www.rbf.org

KEY STATS FROM THE REPORT - 10 HKH Rivers and 16 countries

- One in every 2.5 Asians, or 1.77 billion people live in basins of 10 HKH Rivers.
- 10 HKH Rivers or 16 countries
 - There are 10 major rivers in Asia, all of which flow from the Hindu Kush Himalayas (HKH). They are the Amu Darya, Brahmaputra, Ganges, Indus, Irrawady, Mekong, Salween, Tarim, Yangtze and Yellow rivers (collectively the 10 HKH Rivers). Many of the continent's major cities and important economic hubs lie in their river basins.
 - These 10 HKH Rivers emanate from 8 countries (HKH 8) and flow through 16 countries (HKH 16), namely Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Kyrgyzstan, Laos, Myanmar, Nepal, Pakistan, Tajikistan, Thailand, Turkmenistan, Uzbekistan and Vietnam. These 10 river basins provide the 16 countries with a third of their surface water resources.
 - Eight of the 10 HKH Rivers are transboundary. Decisions made by the upper riparian will affect the others but bilateral/ multilateral agreements to ensure equitable use of shared water resources are still lacking. The HKH 8 has 3.3x the water resources of the 8 countries downstream (Downstream 8) but 13.4x the population. Urgent action is necessary.
- The HKH 16 countries have a collective GDP of USD13.2trn; a third of this (USD4.3trn) is generated in the 10 HKH River Basins where a population of 1.77bn is also clustered.
- One in two people in the HKH 16 live in in the HKH River Basins. Of the 1.77bn people who live in the HKH River Basins, 96% is in the HKH 8. By 2050, six of the HKH 8 countries will have an urbanisation rate above 50%. Since this will likely add pressure on the respective river basins, it is imperative to assess the socio-water-economic carrying capacity of each of the 10 HKH River Basins.
- CWR estimates total ice reserves supplying the HKH River Basins to be 7,574km³. This is the largest accumulation of ice outside the two poles and is often called Asia's Water Tower or The Third Pole. If melted, it will provide almost 7trn m³ of freshwater, enough to fill two Great Lakes (Michigan & Erie) + almost 40 Three Gorges Dams.
- The 10 HKH Rivers are vulnerable to climate change; their flow components from glacier melt, snowfall to rainfall are being altered, even monsoon patterns will shift. Ganges, Indus, Tarim & Amu Darya will all see reduced runoffs by 2055.
- Temperatures will continue to rise with increases doubling in six of the 10 basins while snowfall will continue to decline with future losses likely more than doubling for the Indus, Tarim and Ganges.
- The financing gap is daunting: US\$12.5trn of GDP is generated in the HKH 8 annually, yet approved climate finance only reached US\$2bnm from 2003 to 2017. With 25% of this going toward adaptation, the HKH 8 is evidently far from funding mitigation, let alone building resilience.

KEY STATS FROM THE REPORT - China and India to lead

- To achieve a per capita GDP of over USD 50,000, the US uses at least 1,543m³ of water/pax which is only 16% of its total renewable water resources of 9,538m³/pax. Unfortunately, China and India are only endowed with total renewable water resources of 2,018m³/pax and 1,458m³/pax respectively.
- Every river is important to each of the HKH 16. However, our analyses reveal four priority rivers: the Ganges, Indus, Yangtze and Yellow. Not only do they house the largest economies with an estimated total GDP of USD3.8trn, they are densely populated with 1.5bn people. Moreover, 4% to 63% of these four basin areas already face 'high' or 'extremely high' water stress lending complexity to water allocation and management.
- India & China as upper riparians can lead both transboundary & regional economic cooperation. They can also improve basin-level monitoring & data collection, as well as prioritise multi-stakeholder & multi-disciplinary research efforts to improve understanding of hydrological cycles in a changing climate.
- Urgent actions are needed, be they inter- state/provincial policies or basin-wide co-operation across the HKH 16.
- China's national water caps imposed back in 2011 signalled a limit to China's GDP growth of 5.7% between 2020 and 2030. China has moved to entrench "ecological civilisation" into its constitution and de-prioritise GDP to rebalance its economy and environment.
- Chinese jobs in renewable energy development have already overtaken that of coal mining. Looking forward, the IFC estimates the 2016-2030 climate-smart investment potential of the HKH 8 to be USD18trn; China & India dominate at USD14.9trn and USD3.1trn respectively.