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ICIMOD
The International Centre for Integrated Mountain Development

Press Release

Help "Stop the Melt" with a new 13-Factsheet Guide!

CWR in collaboration with ICCI, CNC-IACS, IGSNRR-CAS and ICIMOD release a 13-Factsheet Guide to "Stop the Melt" to slow down sea level rise and preserve freshwater ice banks

Hong Kong, 21st March 2025 – Happy World Glacier Day! In the spirit of glacier preservation, CWR has launched a **"13-Factsheet Guide to Stop the Melt"**. Global warming of 1.3°C today means that our cryosphere is in dire straits. Mountain glaciers are vanishing fast and ice sheets, permafrost & sea ice in the Arctic and Antarctica are also seeing rapid losses. Over 14 trillion tonnes of ice have been lost in the last 30 years – this means we've on average lost over 50 million tonnes of ice every hour for the last 30 years from our mountains & polar regions!

"Such massive losses have dire consequences, especially in Asia, yet what's happening in our cryosphere remains out of sight & out of mind" said Debra Tan, the Director & Head of Hong Kong based think tank CWR. *"So together with our partners, we have curated factsheets to help inform multiple stakeholders from business & finance to policymakers on the critical importance of protecting our cryosphere. We hope these will inspire rapid decarbonisation to Stop the Melt to slow down rising seas and preserve our freshwater ice banks"* Tan added.

This factsheet guide produced in collaboration with – the International Cryosphere Climate Initiative (ICCI), the Chinese National Committee for International Association of Cryospheric Sciences (CNC-IACS), the Institute of Geographic Sciences & Natural Resources Research of the Chinese Academy of Sciences (IGSNRR-CAS), and the International Centre for Integrated Mountain Development (ICIMOD) – provides a "Big Picture" view of the latest science and unpacks "hidden ice risks" which have deep consequences for us all. Impacts can literally be earth changing as around two-thirds of planetary tipping points are related to our cryosphere.

Asia is especially vulnerable. Globally, it's the continent that is most vulnerable to rising seas and more ice sheet losses plus ocean warming could unleash rapid sea level rise. Worryingly, the rate of sea level rise has already doubled in the last 30 years and is set to rise further – 1m is now possible by 2070 if high emissions continue. Even at this level, rising seas will redraw coastlines, impact at least 200 million Asians, sink low-lying coastal capitals and disrupt global trade.

"The costs and uncertainties to the business sector should our current carbon emissions continue will be enormous, and largely irreversible. We are rapidly moving beyond the limits of adaptation for those economic activities reliant on stable coastlines, or on water supplies from mountain regions where glacier and snowpack run-off provide a needed buffer" warned Pam Pearson, the Director of ICCI. *"We really need to dial back emissions this decade, before 2030. If we do not, then keeping CO2 levels and temperatures close to 1.5°C becomes essentially impossible. We hope the factsheets help stakeholders understand that 2°C is too hot for ice and that overshoot to 2°C will result in huge economic impacts from extensive ice loss; even at 1.5°C, ice is in the danger zone"* said Pearson.

Indeed, vanishing ice and record low snowfall in the Hindu Kush Himalayas (HKH) are concerning for water supply as these are key components of river flow. The Himalayan Water Towers are the source region for 10 mighty rivers in Asia including the Ganges, Indus, Mekong, Yangtze & Yellow Rivers. Not only do one in two Asians live in in these 10 river basins, but these basins are also economic powerhouses with over 280 large cities and 865GW of power assets.

ICIMOD's Director General Pema Gyamtsho provided context: *"We saw record-low snowfall in 2023 & 2024 which proved challenging, highlighting regional water security issues. Devastating glacier lake outburst floods caused by accelerated glacier melt have also taken out mountain villages from Everest to Sikkim. The situation is serious; if emissions continue, we could lose up to 80% of HKH glaciers by 2100, but we could face peak water for HKH rivers sooner, by 2050. Even 1.5°C is too high for the HKH, we must act to decarbonise fast if we are to preserve our precious glaciers."*

Ice losses threaten water, food, energy & economic security. The urgency to decarbonise faster to stop the melt, slow down sea level rise and preserve our freshwater ice banks (whether in the Himalayas, Alps or Andes) is clear, yet awareness remains limited due to the hidden nature of these risks as well as the fast-evolving science of ice dynamics.

"The International Year of Glacier Preservation provides an opportunity for Asia to act. We can & must – we can because with over 50% of global greenhouse gas emission Asia can deliver deep decarbonisation this decade; and we must because Asia is the region most vulnerable to ice losses. We're still developing, and this puts Asia in a unique position to leapfrog ahead on transition as well as step up adaptation action to match escalating risks" urged Tan.

Echoing this urgency is Professor Shichang Kang, a leading cryosphere expert and the Chair of CNC-IACS, he highlighted that *"the time window for protecting glaciers is narrowing. We must work together to cut carbon and reduce emissions. We must act now."* Professor Shaofeng Jia, from IGSNRR-CAS also said *"changes in our cryosphere impact water resources and knowledge of this must be shared across multiple disciplines so that integrated & innovative action can be realised. We must focus to this pressing challenge and secure a sustainable future for generations to come."*

Today, with our planetary ecosystems at risk, we stand at a crossroad. What we do in the next few years on transition & adaptation will decide our futures. The precarious state of our cryosphere brings a torrent of "hidden" risks we must attend to. It's daunting but we must start somewhere. As Tan summarises, *"Tackling complex challenges start with conversations and we need to start one on ice now – so download the Guide to Stop the Melt and let's get talking!"*

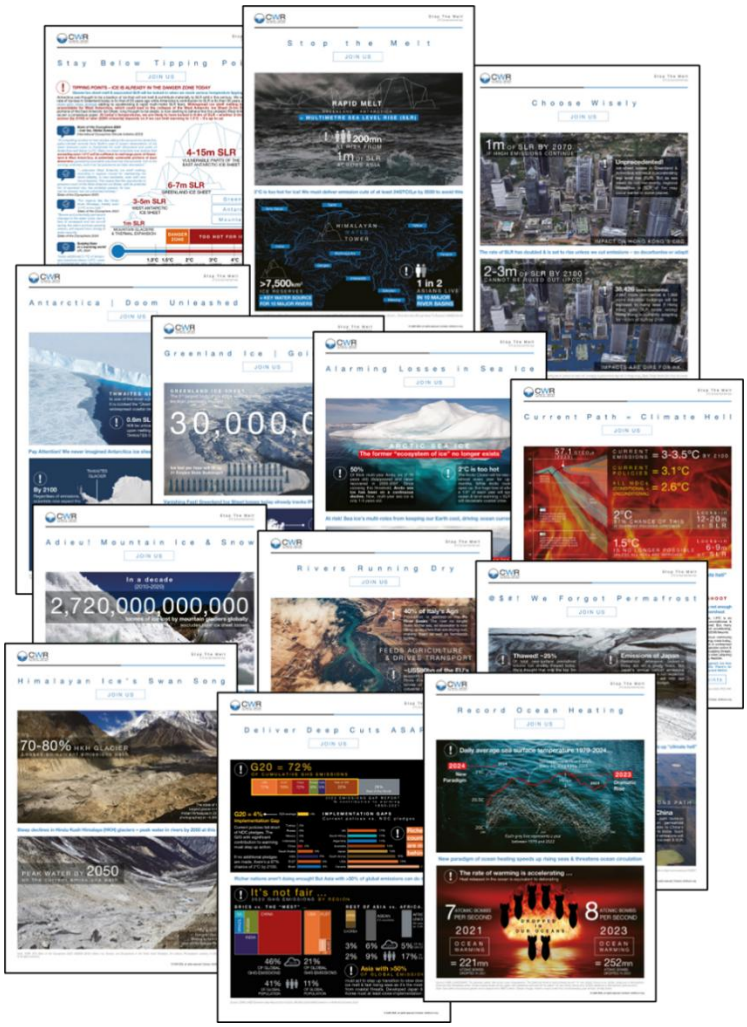
Help us spread the word!

To explore the **13-Factsheet Guide to "Stop the Melt",** start with the **Stop the Melt Factsheet** – it is linked to the others!

Or access them **all here**

Stop the Melt

- At least 14 trillion tonnes of ice lost in last 30 years!
- Know what will kill us! Even 2°C will accelerate losses = speed up sea level rise & impact future river flows
- Join us to stop the melt with deep & rapid emission cuts!



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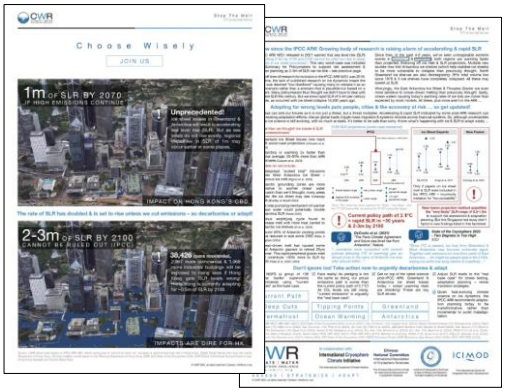
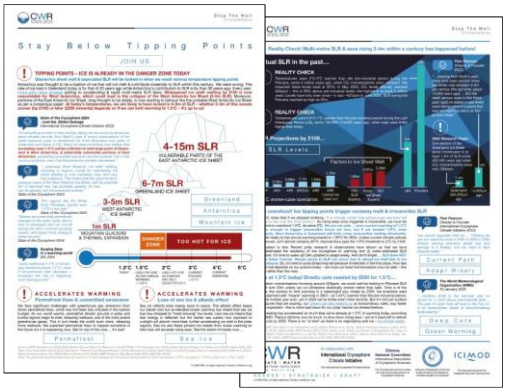
Choose Wisely



- Adapting for wrong levels put people, cities & economies at risk…so know the latest & choose wisely!
- At-a-glance SLR stats + the latest science which points to accelerating & rapid SLR
- Better be safe than sorry! Current high emissions mean 1m of SLR by 2070 is possible!

Stay Below Tipping Points

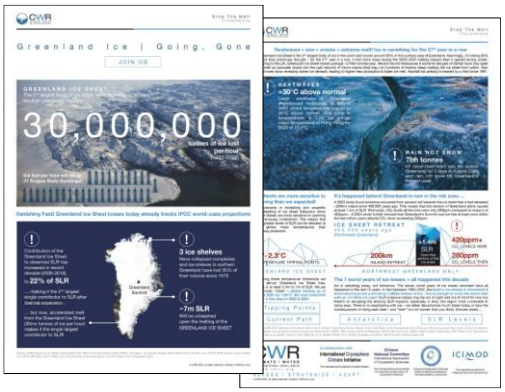


- Rising seas once triggered are irreversible so don't overshoot 1.5°C, let alone 2°C; we're at 1.3°C today!
- See tipping points for mountains glaciers, Antarctic & Greenland Ice Sheets + see how much SLR they hold
- Reality check! SLR projections ranges vs. what's happened before

Antarctica | Doom Unleashed

- Antarctica alone holds >50m of SLR – see which parts of this is vulnerable & how much SLR can be unleashed
- It is getting crazy hot there! At-a-glance implications of rapid ocean warming + widespread ice sheet melt
- Don't be blindsided, get on top of vicious cycles from massive losses of sea ice + ocean warming

Greenland Ice | Going, Gone

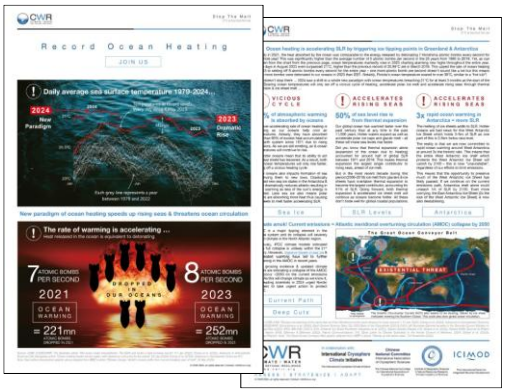


- Greenland is in the "risk zone" – it is now the single largest contributor to SLR!
- Heatwaves + rain + cracks = extreme ice melt
- Get on top of Greenland tipping points & stats; Greenland Ice Sheet losses today already track IPCC AR6's worst-case projections!

Alarming Losses in Sea Ice

- Extensive sea ice losses in the Arctic & Antarctica = regime shift to new sea ice states
- Multiple functions of sea ice are on the brink of collapse; it keeps our Earth cool, drive ocean currents + more
- Sea ice also supports wildlife, food-web and so on; sea ice losses can trigger ecosystems collapse

Record Ocean Heating



- At-a-glance historical update on ocean heating & perspectives on the recent paradigm shift
- Ocean heating = thermal expansion + rapid ice sheet losses Greenland & Antarctica = accelerating SLR
- See how ocean circulations will be affected; collapse may be sooner than we think if high emissions continue

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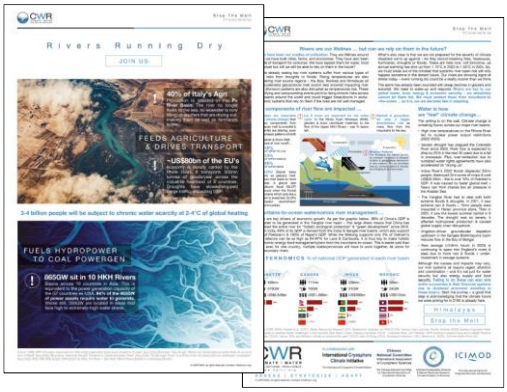
Adieu! Mountain Ice & Snow

- Say goodbye to some glaciers now! Some will vanish even at 1.5°C … so farewell, ski resorts!
- See how less ice & snow can cause seasonal freshwater shortages + impact river flow
- Don't forget! Mountain glacier losses also contribute to SLR – see how much is locked-in

Rivers Running Dry

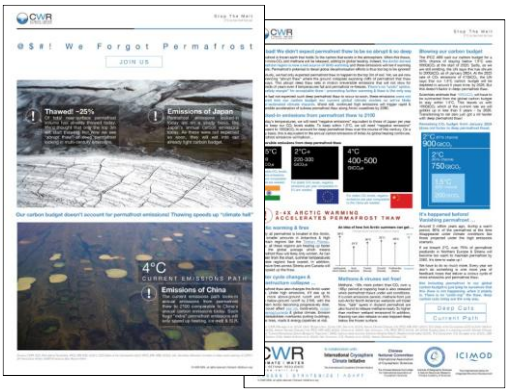


- Rivers are our lifelines, we should protect them from mountains-to-oceans to ensure they don't run dry!
- Snow & ice are key components of river flow; at-a-glance implications for water, food, energy & economic security
- At-a-glance waternomic stats of Asia's key river basins: % of national GDP, people & power generation

Himalayan Ice's Swan Song

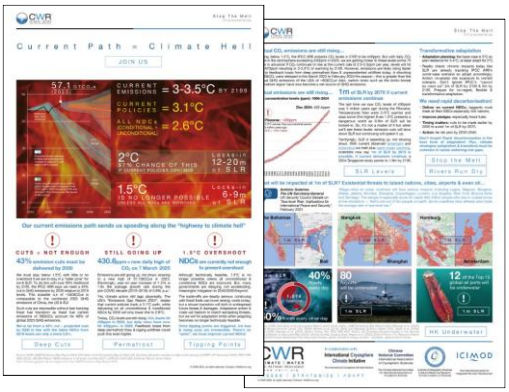
- At-a-glance stats on Asia's "ice bank" & water reserves
- It's hot up there! See how hot at 3,000m+ and how this causes monsoon patterns shifts, GLOFs, cloudbursts ++
- See why even 1.5°C is too hot for the Himalayas with at-a-glance stats of future glacier losses + peak water for rivers on our current emission path

@ $ # ! We Forgot Permafrost



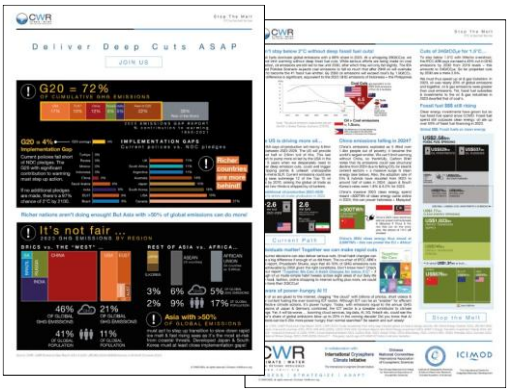
- We didn't expect permafrost thaw to be so abrupt & so deep! See what's speeding up the thaw
- At-a-glance permafrost thaw emissions at 1.5, 2 & 4°C; the numbers are shocking = blows our carbon budget!
- At-a-glance permafrost thaw impacts on the Arctic water cycle & infrastructure + methane & viruses are set free

Current Path = Climate Hell



- At-a-glance current emissions, current policies & NDC scenarios + how much SLR these will lock-in
- Actual CO_2 levels & how far we are from meeting the NDCs targets + how much emission cuts are still needed
- At-a-glance impacts of 1m of SLR to island nations, big cities, global airports & key oil ports

Deliver Deep Cuts ASAP



- G20 cumulative GHG emissions + implementation gaps
- It's not fair! 2023 GHG emissions by regions: BRICS vs. the "West", ASEAN, Japan + S. Korea, vs. African Union
- Need deep fossil fuel cuts for 1.5°C! Coal vs. oil cuts; fossil fuel subsidies & expansion vs. clean energy; individual action & habit changes, AI + more

About CWR…

CWR CLIMATE | WATER RISK • RETHINK • RESILIENCE

CWR: In an era marked by unprecedented accelerating water & climate threats, CWR aims to unpack and value complex climate & water risks; rethink transition to "slow down" these risks; and build resilience so that finance, corporates and governments can all make better decisions today for water tomorrow. Since 2011, the think tank has worked from its Hong Kong base to engage with global finance and business in understanding and managing various types of water & climate risks in China and across Asia. CWR's collaborative reports with financial institutions, IGOs, scientists as well as government related bodies are widely cited by the media to banks and the IPCC – they have been instrumental in understanding Asia's water challenges and informing disclosure frameworks; they compel us to rethink climate & water risks for resilience. Join the conversation at www.cwrrr.org

Factsheet partners …

These factsheets were produced in collaboration with the following organisations:

International Cryosphere Climate Initiative

About ICCI

The International Cryosphere Climate Initiative (ICCI) is a network of senior policy experts and researchers working with governments and organisations to create, shape and implement initiatives designed to preserve as much of the Earth's cryosphere as possible. Formed in 2009 immediately after COP-15 in Copenhagen, ICCI programs target the unique climate dynamics at work in the cryosphere, while at the same time lending increased urgency to global climate efforts aimed at CO2 and other greenhouse gases by communicating the unexpected rapidity and global implications of cryosphere warming. iccinet.org

Chinese National Committee International Association of Cryospheric Sciences

About CNC-IACS

The Chinese National Committee for International Association of Cryospheric Sciences (CNC-IACS) is dedicated to the development & promotion of cryospheric sciences. Established in 2012, the committee comprises of China's leading experts in the field of cryospheric research. The committee unites & mobilises the vast number of Chinese cryospheric scientists as well as science-technology experts to meet global sustainable development goals and explore international frontier issues in cryospheric science. The committee thus supports the popularisation of cryospheric science, cultivates talent in the field and works to organically integrate cryospheric science & technology with the economy as well as the society. The CNC-IACS is one of eight academic disciplines under the Chinese National Committee for International Union of Geodesy & Geophysics (CNC-IUGG), a non-governmental scientific organisation established by the Chinese Academy of Sciences & China Association for Science & Technology in 1979.
iugg.org.cn

About IGSNRR-CAS

Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR-CAS) 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.igsnrr.cas.cn

About ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD), based in Kathmandu, Nepal, is a regional intergovernmental organisation established in 1983 that is working to make the Hindu Kush Himalaya (HKH) region greener, more inclusive and climate resilient. The HKH mountains stretch 3,500km across Asia, span eight countries – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and hold the third largest ice mass after the Arctic and the Antarctic. Global temperature rise is driving unprecedented & largely irreversible changes to the HKH's glaciers, snow & permafrost, which scientists warn pose devastating consequences for people & nature in the mountains, downstream economies, ecosystems and societies. ICIMOD published its first paper on cryosphere in 1986 and has significantly stepped up its work since 2001. Our current focus is on strengthening regional capacity to monitor cryosphere & understand changes; developing regional syntheses; informing national policies; and profiling our knowledge globally.
icimod.org

Contact us

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Email: info@cwrrr.org