Asia Climate Change Consortium

ABOUT THE ASIA CLIMATE CHANGE CONSORTIUM

1.5 C TO REDUCE CLIMATE-RELATED RISKS AND AVOID LOSS OF LIVES AND ASSETS

Asia Climate Change Consortium (ACCC) is a regional advocacy and learning platform with members of local and national organisations and networks in Asia. We advocate and work towards a common agenda of ensuring temperature limit of 1.5C and below. Our goal is to bring the voices on the ground to be heard at the regional and international forums through the work of members who are actively working at the local and national levels.

CLIMATE CHANGE RISKS AND ACCESS TO SCIENTIFIC INFORMATION: KEY ASKS

THE AIM OF THIS SCIENTIFIC BRIEF IS TO BE ABLE TO PROVIDE INFORMATION TO CIVIL SOCIETY ORGANIZATIONS (CSOS) ON THE CURRENTLY AVAILABLE DOWNSCALED REPRESENTATIVE CONCENTRATION PATHWAYS OF COUNTRIES WHERE THE ASIA CLIMATE CHANGE CONSORTIUM (ACCC) PARTNERS WORK.

Potential actions that could diminish the threats posed by climate change to society and ecosystems include substantial reduction in greenhouse gas emissions as well as preparing for changes that are now unavoidable. The community of scientists has responsibilities to improve overall understanding of climate change and its impacts. Improvements will come from pursuing the research needed to understand climate change, working with stakeholders to identify relevant information, and conveying understanding clearly and accurately, both to decision makers and to the general public.

Specifically, the paper will:

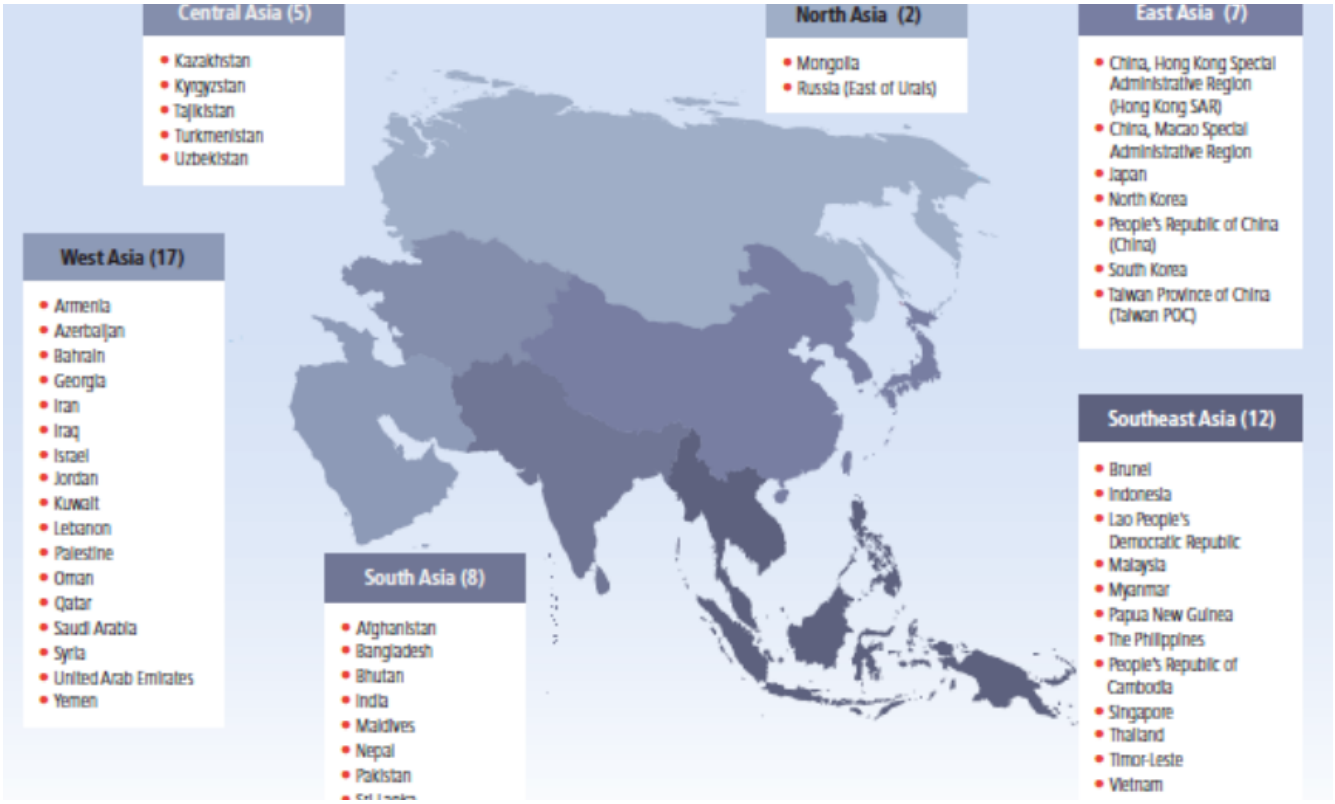
1. Review and distill currently available RCPs in a form that CSOs will understand the projections and scenarios using RCPs per available climate variable for the near and far future
2. Based on sound science, advise on potential mitigation, adaptation, climate resilience options for decision support
3. Dialogue with ACCC members on the scientific brief so CSOs to help CSOs prepare an evidence-based policy brief that will inform the NDC preparation of respective countries and regional inter-governmental decisions

OBSERVED CHANGES AND TRENDS IN CLIMATE IN ASIA

The Intergovernmental Panel on Climate Change (IPCC) defines Asia as the land and territories of 51 countries/regions, as shown in Figure 2 below. Based on geographical position and coastal boundaries, it is divided into six sub-regions: Central Asia (5 countries), East Asia (7 countries/regions), North Asia (2 countries), South Asia (8 countries), Southeast Asia (12 countries), and West Asia (17 countries).
The Intergovernmental Panel on Climate Change (IPCC) defines Asia as the land and territories of 51 countries/regions, as shown in Figure 2 below. Based on geographical position and coastal boundaries, it is divided into six sub-regions: Central Asia, East Asia, North Asia, South Asia, Southeast Asia, and West Asia.

For the purpose of this paper, countries in the Asia where ACCC partners work include Cambodia, Laos, Thailand, Vietnam, Myanmar, Indonesia and the Philippines (Southeast Asia), Bangladesh, Nepal, India and Afghanistan (South Asia). Climate information look at the current climate and the projections using the Representative Concentration Pathways, which in the most parts is at the regional level and at the national level at best.

Fig. 2 The land and territories of 51 countries/regions in Asia 1

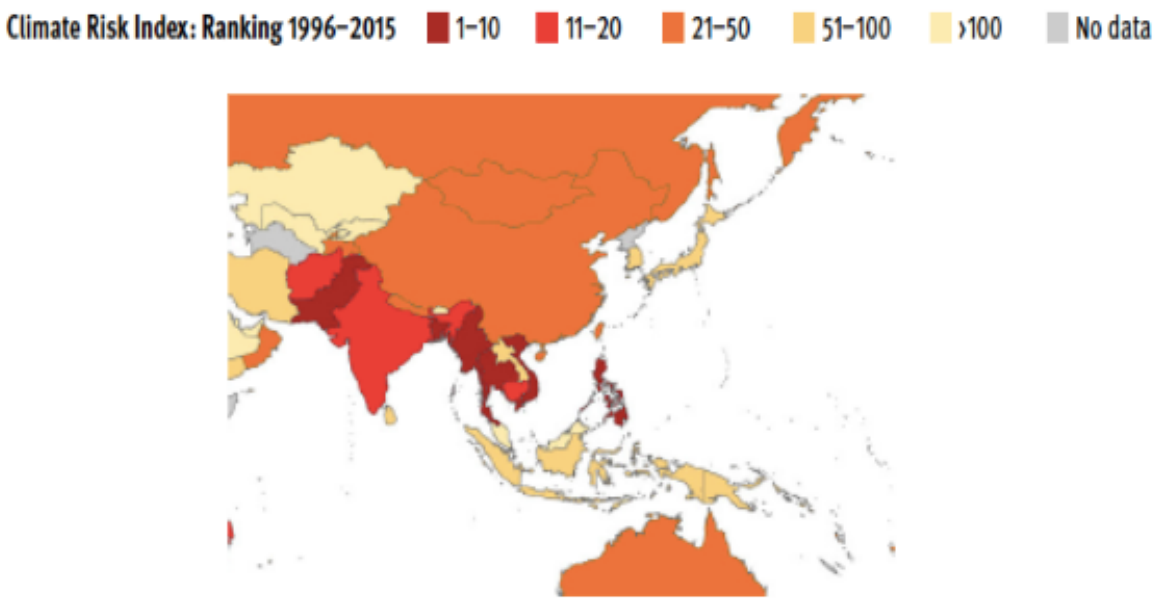


1 Hijioka, Y., E. Lin, J.J. Pereira, R.T. Corlett, X. Cui, G.E. Insarov, R.D. Lasco, E. Lindgren, and A. Surjan, 2014: Asia. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, V.R., C.B. Field, D.J. Dokken, M.D. Mastrandrea, K.J. Mach, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1327-1370.

Towards the end of 2017 the World Meteorological Agency (WMO) released its press statement on the state of the global climate[2], which indicated that 2017 is very likely among the three warmest years on record. The warming led to many extreme events such as disastrous tropical cyclones, intense rainfall episodes and floods, heat waves and droughts; and impacts such as those mentioned in Box 1. Long-term climate change indicators are continuously observed, such as carbon dioxide and other greenhouse gas emissions concentrations, sea level rise, ocean acidification, and the retreat of polar ice sheets. The average global temperature for the period January to September 2017 was about 0.5 C warmer than the 30 years average from 1981 to 2010; or about 1.03 oC increase since the pre-industrial period. Contributory to this increase was the very strong El Niño in the late 2015 to 2016.

In 2016, weather-related disasters displaced 23.5 million people. Consistent with previous years, the majority of these internal displacements was associated with floods or storms and occurred in the Asia-Pacific region. These were expressed in terms of Climate Risk Index[3] (shown in Figure 3), where lower number or darker color represents higher risk index. Floods affected the agricultural sector, especially in Asian countries.

Figure 3: Climate Risk Index by country



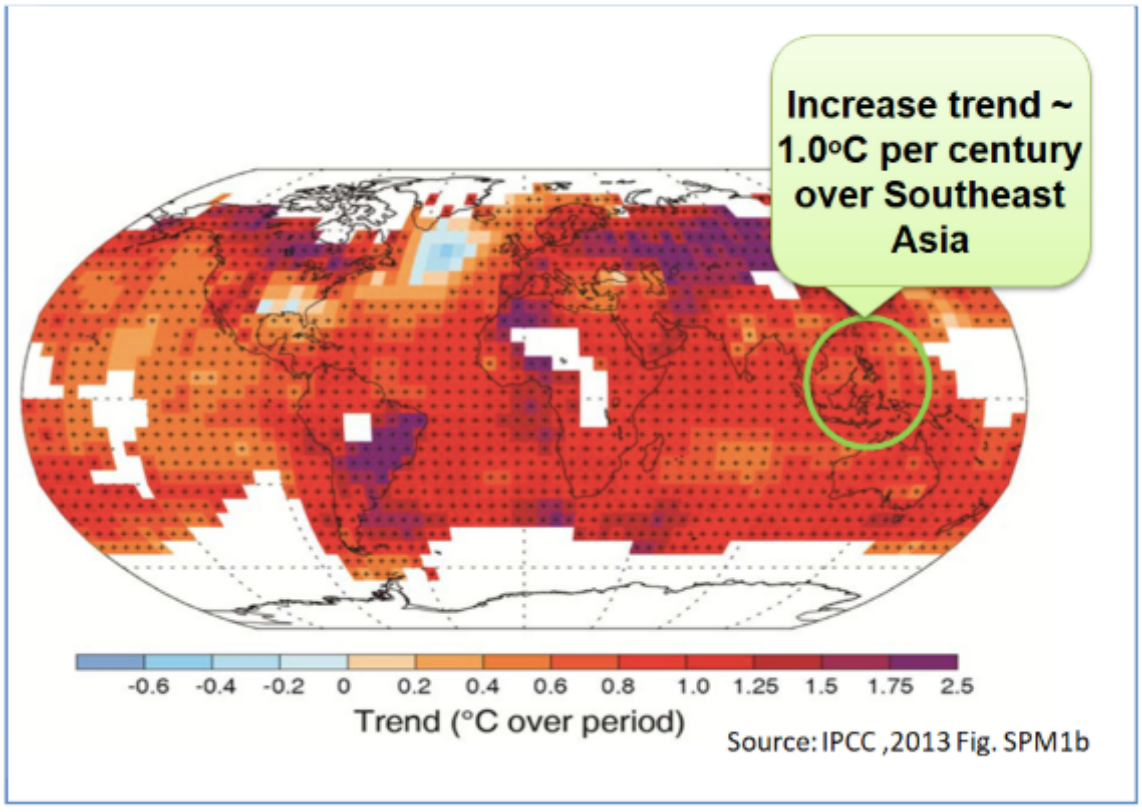
2 WMO Press Release

3 German Watch, 2017: Eckstein D, V Künzel and L Schäfer, 2018: Global Climate Risk Index 2018: Who Suffers Most From Extreme Weather Events? Weather-related Loss Events in 2016 and 1997 to 2016 , GermanWatch Briefing Paper

The IPCC Fifth Assessment Report[4] concluded, "Warming in the climate system is unequivocal". Multiple evidences such as increasing global temperature support these; increasing ocean heat content; global sea level rise; and diminishing snow cover, glacier and Arctic sea-ice extent. For Southeast Asia, the regional temperature increase is around 1.0o C[5] (see Figure 4). For precipitation, observations over wet regions became wetter, dry regions became drier since the second half of the 20th century; while extreme weather and climate events became more frequent.

The same pattern is seen over South Asia (Figures 5 and 6), where the historical changes in temperature and rainfall are shown[6]. Warming has occurred across most of South Asia over the 20th century and into the first decade of 21st century. Rainfall, including extremes, is characterized by strong variability, as in the whole Asian continent.

Figure 4: Regional warming trend over Southeast Asia



4 IPCC, 2014a: AR5 Synthesis Report
5 IPCC, 2014b: WG2 Contribution to AR5, Chapter 24 (Asia Region)
6 CDKN, n.d.: The IPCC Fifth Assessment Report: What's in it for South Asia?

Figure 5: Historical change in annual average temperature in South Asia (1901 -2012)

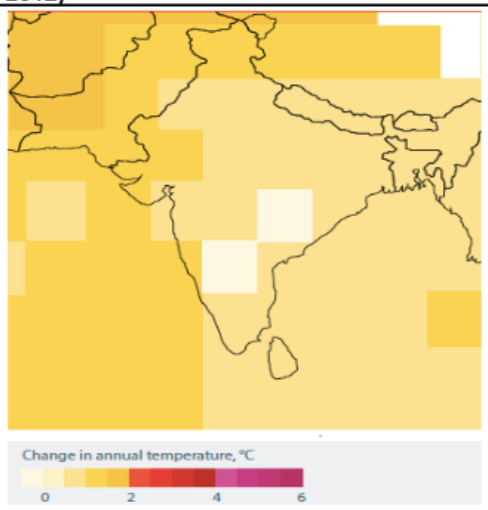
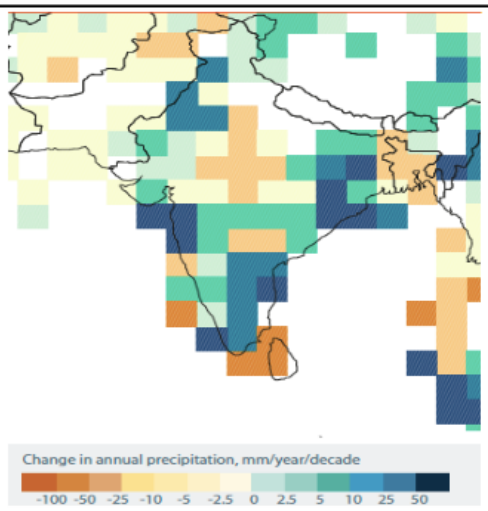


Figure 6: Historical change in annual average rainfall in South Asia (1901 -2012)



In general according to historical evidences and proxies[7], it is likely that the frequency of heat waves has increased in large parts of Asia. Prolonged and intense drought periods occurred in monsoon Asia during the little Ice Age (years 1450 to 1850) compared to medieval climate (years 950 to 1250). Moreover, modern large floods in India are comparable or surpass historical floods in magnitude and/or frequency.

THE FUTURE CLIMATE OF ASIA

The rising incidents of some changes in extreme weather and climate events observed since 1950s connected with human activity to that risks depend on cumulative C02 emissions. The IPCC used these linkages to construct the future climate using emission scenarios. Scenarios of different rates and magnitudes of climate change provide a basis for assessing the risk of crossing identifiable thresholds in both physical change and impacts on biological and human systems.

In climate change research, scenarios describe plausible trajectories of different aspects of the future that are constructed to investigate the potential consequences of anthropogenic climate change. Scenarios represent many of the major driving forces - including processes, impacts (physical, ecological, and socioeconomic), and potential responses that are important for informing climate change policy. They are used to connect information from one area of research to another (e.g., from research on energy systems and greenhouse gas emissions to climate modeling). They are also used to explore the implications of climate change for decision-making (e.g., exploring whether plans to develop water management infrastructure are robust to a range of uncertain future climate conditions).

7 IPCC, 2014: AR5 Synthesis Report

"The goal of working with scenarios is not to predict the future but to better understand uncertainties and alternative futures, in order to consider how robust different decisions or options may be under a wide range of possible futures"[8].

THE REPRESENTATIVE CONCENTRATIONS PATHWAYS (RCPS)

The IPCC Fifth Assessment Report (AR5) used representative concentration pathways (RCPs) to provide time-dependent projections of atmospheric greenhouse gas (GHG) concentrations (Figure 8). The term pathway is meant to emphasize that it is not only a specific long-term concentration or radiative forcing outcome, such as a stabilization level, but also the trajectory that is taken over time to reach that outcome. They are representative in that they are one of several different scenarios that have similar radiative forcing and emissions characteristics.

Because the storyline comes first in SRES scenarios, the socio-economic circumstances are essentially locked in; an SRES scenario cannot be used to test the impacts of policy changes. One result was that numerous SRES scenarios were developed to test slightly different variations on common socio-economic variables. In contrast, RCPs fixed the emissions trajectory and the resulting radiative forcing rather than the socio-economic circumstances. The RCPs can then be used to test policy decisions on mitigation and adaptation, for example to see which combinations produce the most cost-effective response and the timeliest return on investment.

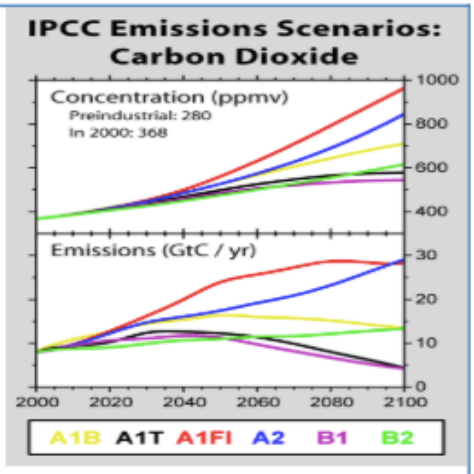
Figure 7: The set of SRES scenarios used in TAR and AR4 - Families of story lines

A1 - one global family' storyline *assumed a future of globalization and rapid* economic and technological growth

- Fossil fuel intensive (A1FI),
- Non-fossil fuel intensive (A1T),
- Balanced (A1B) versions.

A2 - a divided world' assumed a greater emphasis on national identities.

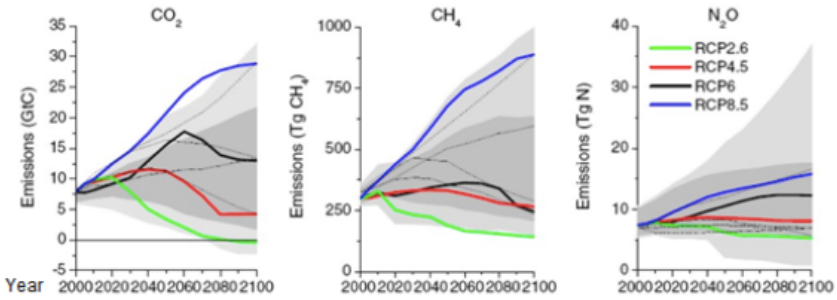
B1 and B2 scenarios assumed more sustainable practices ('utopia'), with more global-focus and regional-focus, respectively.



8 IPCC, 2007b "Towards New Scenarios for Analysis of Emissions, Climate Change, Impacts, and Response Strategies", IPCC Technical Summary, 2007IPCC, 2007b: IPCC Scenario Process for AR5
9 IPCC,2007a: IPCC Expert Meeting Report, Towards New Scenarios For Analysisof Emissions, Climate Change, Impacts, and Response Strategies

In contrast, RCPs fixed the emissions trajectory and the resulting radiative forcing rather than the socio-economic circumstances. The RCPs can then be used to test policy decisions on mitigation and adaptation, for example to see which combinations produce the most cost-effective response and the timeliest return on investment.

Figure 8: Emissions of main greenhouse gases across the Representative Concentration Pathways (RCPs)



The RCPs are not definitive, but are instead internally consistent time-dependent forcing projections that could potentially be realized with multiple socioeconomic scenarios. They can take into account climate change mitigation policies to limit emissions. The name came after the approximate radiative forcing relative to the pre-industrial period achieved either in the year 2100, or at stabilization after 2100. RCPs were created by 'integrated assessment models' that include climate, economic, land use, demographic, and energy-usage effects, whose greenhouse gas concentrations were converted to an emissions trajectory using carbon cycle models.

There are four pathways: RCP8.5, RCP6, RCP4.5 and RCP2.6 – the last is also referred to as RCP3-PD, where PD stands for Peak and Decline. The numbers in each RCP refer to the amount of radiative forcing produced by greenhouse gases in 2100. For example, in RCP8.5 the radiative forcing is 8.5 Watts per meter (W/m^2) in 2100. Each RCP defines a specific emissions trajectory and subsequent radiative forcing. These trajectories are shown in the graphs below for the three main greenhouse gases – carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O). The grey area indicates the range of emissions trajectories in the published literature. The dotted lines indicate scenarios used in the Fourth Assessment Report. Each RCP consists of a data set, which includes a set of starting values and the estimated emissions up to 2100. Each data set is based on historic information and a set of plausible assumptions about future economic activity, energy sources, population growth and other socio-economic factors. Modelers use the data sets to initialize their models, thus providing consistency across modeling studies and avoiding duplication of effort.

10 Radiative forcing is a measure of the energy absorbed and retained in the lower atmosphere – effectively a measure of the amount that the Earth's energy budget is out of balance. It can be positive (heating) or negative (cooling) and is affected by greenhouse gas concentration, aerosol concentration, changes in land cover and natural drivers such as total solar irradiance. Irradiance is the density of radiation incident on a given surface usually expressed in watts per square centimeter or square meter

11 Van Vuuren and co-authors, 2011: The representative concentration pathways: an overview. Climatic Change, 109, 5-31, doi:10.1007/s10584-011-0148-z. (Detlef P. Vuuren, Jae Edmonds, Mikiko Kainuma, Keywan Riahi, Allison Thomson, Kathy Hibbard, George C. Hurtt, Tom Kram, Volker Krey, Jean-Francois Lamarque,Toshihiko Masui, Malte Meinshausen, Nebojsa Nakicenovic, Steven J. Smith and Steven K. Rose)

Scenario	Atmospheric carbon dioxide concentrations in 2100 (used as input for most model simulations)	Temperature increase to 2081-2100 relative to the 1850-1900 baseline		Global mean sea level rise for 2081-2100 relative to 1986-2005	
		Average	Likely range	Average	Likely range
RCP2.6	421ppm*	1.6°C	0.9-2.3°C	0.40m	0.26-0.55m
RCP4.5	538 ppm	2.4°C	1.7-3.2°C	0.47m	0.32-0.63m
RCP6.0	670 ppm	2.8°C	2.0-3.7°C	0.48m	0.33-0.63m
RCP8.5	936 ppm	4.3°C	3.2-5.4°C	0.63m	0.45-0.82m

*ppm is parts per million, a measure of concentration

Figure 9: The RCP scenarios and the resulting temperature increase

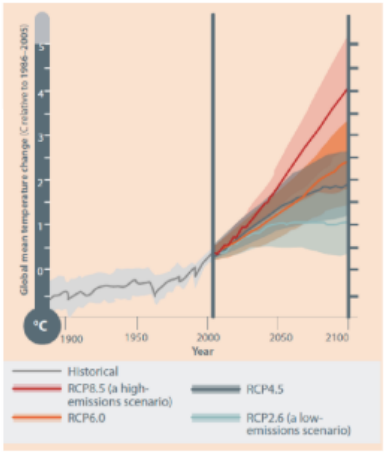


Figure 9 shows the result of the different level of emissions of greenhouse gases on global warming, from the present day to 2100. In all scenarios, carbon dioxide concentrations are higher in 2100 than they are today. In the next few decades, warming will be the same in all emission scenarios. Regardless of action taken now to reduce emissions, the climate will change until around the middle of this century. In the longer term, in all except the RCP2.6 scenario, global warming at the end of the 21st century is ***likely*** to be at least 1.5°C. In the two higher emissions scenarios, global warming is ***likely*** to be 2°C. In the RCP4.5 emission scenario, global warming is ***more likely than not*** to be 2°C. Warming will continue beyond 2100 under all emissions scenarios except for RCP2.6, and will continue to vary between years and between decades. [12]

POSSIBLE CLIMATE SCENARIOS FOR SOUTHEAST AND SOUTH ASIAN COUNTRIES UNDER RCPS

Southeast Asia

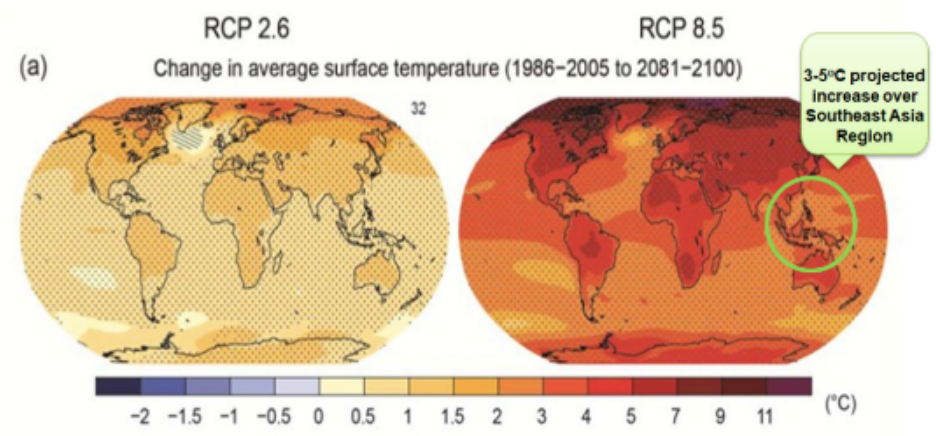
Temperature: Southeast Asia is projected to continue experiencing warmer temperature (around 3 to 5 oC for an RC8.5 scenario (see Figure 10), more intense precipitation events, large variations of rainfall and temperature associated with ENSO and changes in monsoon, warmer ocean resulting to sea level rise and widespread acidification.

10 Radiative forcing is a measure of the energy absorbed and retained in the lower atmosphere – effectively a measure of the amount that the Earth's energy budget is out of balance. It can be positive (heating) or negative (cooling) and is affected by greenhouse gas concentration, aerosol concentration, changes in land cover and natural drivers such as total solar irradiance. Irradiance is the density of radiation incident on a given surface usually expressed in watts per square centimeter or square meter

11 Van Vuuren and co-authors, 2011: The representative concentration pathways: an overview. Climatic Change, 109, 5-31, doi:10.1007/s10584-011-0148-z. (Detlef P. Vuuren, Jae Edmonds, Mikiko Kainuma, Keywan Riahi, Allison Thomson, Kathy Hibbard, George C. Hurtt, Tom Kram, Volker Krey, Jean-Francois Lamarque,Toshihiko Masui, Malte Meinshausen, Nebojsa Nakicenovic, Steven J. Smith and Steven K. Rose)

12 IPCC, 2013: The Physical Science Basis. Technical Summary (Figure TS-15, p89)

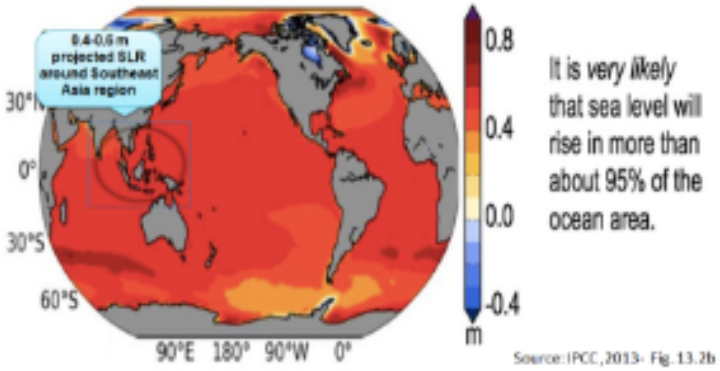
Figure 10: Change in average surface temperature from the period (1986-2005) to (2081-2100)



Source: IPCC ,2013 Fig. SPM8a

Rainfall: There is high confidence that ENSO will remain the dominant mode of inter-annual variability in the tropical Pacific, with global effects in the 21st century. Due to the increase in moisture availability, ENSO-related precipitation variability on regional scales will likely intensify.[13] These translate to both extreme rainfall events (i.e., wetter and drier than usual).

Sea level rise:



Source: IPCC, 2013- Fig. 13.2b

Tables 2 and 3 indicate temperature increases and rainfall changes in countries in Southeast Asia. All countries will experience increases in temperature for the high emission scenarios and increases in rainfall (except Cambodia[11] during the first half of 21st century)).

13 Christensen, J. H., Krishna Kumar, K., Aldrian, E., An, S.-I., Cavalcanti, I. F. A., de Castro, M., Zhou, T., 2013: Climate Phenomena and their Relevance for Future Regional Climate Change Supplementary Material. In T. F. Stocker, D. Qin, G. K. Plattner, M. Tignor, S. K. Allen, J. Boschung, P. M. Midgley (Eds.), Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (pp. 1217–1308). Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.

14 https://www.env.go.jp/earth/ondanka/pamph_gcm/gcm_southeastasia_en.pdf

15 http://climexp.knmi.nl/plot_atlas_form.py

Table 2: Changes in annual mean surface temperatures (C) and changes in precipitation (%) from the current climate (1984 to 2004) to a future climate (2080 – 2100)[14]

Country	RCP 4.5		RCP 8.5	
	Temperature Change, °C	Rainfall Change, %	Temperature Change, °C	Rainfall Change, %
Indonesia	1.75	5.00	3.20	12.50
Laos	1.50	5.00	3.50	2.00
Vietnam	1.20	8.00	3.50	10.00
Cambodia	1.80	- 8.00	3.50	12.50

Table 3: Ranges of climate difference between the period (2081-2100) from (1986-2005) Jan-Dec AR5 CMIP5 subset[15]

Country	RCP 4.5		RCP 8.5	
	Annual Mean Temperature Change, °C	Precipitation, mm/day	Annual Mean Temperature Change, °C	Precipitation, mm/day
Philippines	1.50 to 2.00	0.20 to 0.50 (most parts) 0.10 to 0.20 (Regions 1 & 2)	3.00 to 4.00	0.50 to 1.00 (most part) 0.10 to 0.20 (Regions 1 & 2)
Thailand	1.50 to 2.00	0.10 to 0.20 (Northern, characterized by greater variability) 0.20 to 0.50 (elsewhere)	3.00 to 4.00	- 0.10 to 0.0 (Northern part) 0.10 to 0.20 (elsewhere)
Malaysia	1.50 to 2.00	1.00 to 2.00 (Western and Central Sabah) 0.20 to 0.50 (N, E and S Sabah) -0.10 to 0.00 (Malaysia Peninsula, largely characterized by variability)	3.00 to 4.00	0.50 to 1.00 (small pocket in Central Sabah) 0.50 to 1.00 (Southern Sabah, with large variability) 0.10 to 0.20 (elsewhere in Sabah) 0.10 to 0.20 (Eastern Malaysia Peninsula, large variability) 0.50 to 1.00 (Western Malaysia Peninsula, with large variability)
Myanmar	2.00 to 4.00	0.50 to 1.00 (NW part) 0.20 to 0.50 E & S parts)	3.00 to 5.00	2.00 to 3.00 (NW part) 0.50 to 1.00 (central part) 0.20 to 0.50 (NE part)

South Asia

South Asia's climate is already changing and the impacts are already being felt. Further climate change is inevitable in the coming decades Climate change poses challenges to growth and development

Temperature: Projections indicate that, compared to the average in the 20th century, average annual temperatures could rise by more than 2°C over land in most of South Asia by the mid-21st century and exceed 3°C, up to more than 6°C over high latitudes, by the late 21st century under RCP8.5. Under a low-emissions scenario (RCP2.6), average temperatures could rise by less than 2°C in the 21st century, except at higher latitudes, which could be up to 3°C warmer. Oceans in subtropical and tropical regions of Asia could warm under all emissions scenarios and would warm most at the surface. The frequency of hot days in South Asia is likely to increase further in the future (high confidence).[18]

Rainfall: Projections indicate that more rainfall will be very likely at higher latitudes by the mid-21st century under RCP8.5 scenario and over southern areas of Asia by the late 21st century. Under a low-emissions scenario, more rainfall at higher latitudes is likely by mid-century but substantial changes in rainfall patterns are not likely at low latitudes. More frequent and heavy rainfall days are projected over parts of South Asia (low confidence).[19]

Sea level rise: Global mean sea level will continue to rise during the 21st century; under all emissions scenarios, the rate of sea level rise will very likely exceed that observed during the past three decades. Global mean sea level rise by the last two decades of the 21st century (as compared to sea levels in 1986 to 2005) will likely be in the ranges of 26 to 55cm under a low-emissions scenario, but 45 to 82 cm for a high-emissions scenario, with total sea level rise of up to 98 cm by 2100 under this latter scenario.[20] This magnitude of sea level rise by the century's end implies significantly increased risks for South Asia's coastal settlements, as well as for coastal economies, cultures and ecosystems, particularly if combined with changes in cyclone frequency or intensity.[21] Low lying, densely populated coastal areas in South Asia, including India and Bangladesh, will be at increased risk of storm surges, putting many millions of people at risk. Negligible change or a decrease in average significant wave heights are projected for the trade and monsoon wind regions of the Indian Ocean.

176 IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Chapter 24 (pp 6–7)
17 Same as in footnote 19
18 Same as in footnote 19
19 IPCC, 2013: Climate Change 2013: The Physical Science Basis. Summary for Policymakers (p9)
20 Same as in footnote 22
21 IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Chapter 24 (p15)

22

KEY RISKS IN ASIA

With a business-as-usual scenario (high emissions, RCP 8.5) stated in previous parts of this Report, the key risks that could be expected over Asia are summarized in Table 4 below.

Table 4: Key risks in Asia

High confidence	Medium confidence
Increased risk of heat-related mortality Increased risk of drought-related water and food shortage causing malnutrition Exacerbated poverty, inequalities and new vulnerabilities Coral reef decline in Asia Mountain-top extinctions in Asia	Increased coastal, riverine and urban flooding leading to widespread damage to infrastructure and settlements in Asia Increased risk of water and vector- borne diseases Increased risk of flood-related deaths, injuries, infectious diseases and mental disorders Increased risk of crop failure and lower crop production could lead to food insecurity in Asia Water shortage in ***arid areas*** of Asia

There is low confidence in the future precipitation projections at a sub-regional scale and thus in future freshwater availability in most parts of Asia. However, water scarcity is expected to be a major challenge for most of the region due to increased water demand and lack of good management (medium confidence). Integrated water management strategies could help adapt to climate change, including developing water saving technologies, increasing water productivity, and water reuse.

CONCLUSION

Natural processes on Earth create many hazards, including earthquakes, volcanoes, landslides, tsunamis, floods, droughts, fires, heat waves, storms, and extreme weather. Some of these hazards are changing with time, in both frequency and magnitude (e.g., climate change). In such cases, the past may not be representative of the future. The exposure of the society to hazard increases with time and intersect with socio-economic factors such as increasing population, urbanization, land use practices and other inherent vulnerability.

22 IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Chapter 24

Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions. Adaptation must be stepped up to address remaining risks. Effective risk management and adaptation have to be tailored to local and regional needs and circumstances. Each location has unique vulnerabilities and exposure to hazards; effective risk management and adaptation have to address the factors contributing to increasing exposure and vulnerability. Asian countries have already started to do adaptation on the ground, but will need to be strengthened further. Some of these are shown in Table 5 below.

Table 5: Adaptation efforts currently being practiced in may parts f Asia

- Combining traditional and scientific knowledge
- Adapting communications infrastructure
- Coastal & water management
- Environmental protection & land use planning
- Disaster risk management
- Municipal-level actions
- Adapting energy & public infrastructure
- Basic public health
- Livelihood diversification
- Development planning
- Early warning systems
- Mangrove reforestation
- Water resources management
- Ecosystem-based adaptation
- Water resources management
- Resilient crop varieties
- Planning for sea-level rise
- Planning for reduced water availability
- International cooperation
- Marine spatial planning

Still, challenges exist to be surmounted and the foremost is availability of data; on weather/climate related hazards and climate change on sub-national levels. If ever these exist, there is no or limited access to scientific data in many sub-regions, particularly at the national level, for modeling and impact assessments. Resilience to climate change and disaster risks requires collaboration among scientists, policy makers, and other major stakeholders. We create a more resilient society where lives are saved and economic losses are minimized when scientific information are used in formulating public policy, and when we take scientifically informed action towards disaster and climate change risks reduction and adaptation.

This science brief was prepared with the help of Dr. Rosa Perez, Ph.D

22 IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Chapter 24

ACCESS TO INFORMATION: A KEY TO RESILIENCE, ADAPTATION AND SURVIVAL AMID THE CHALLENGE OF CLIMATE CHANGE

The United Nations Educational, Scientific and Cultural Organizes recognizes the role of scientific information in sustainable development.[23] According to UNESCO, developing innovative, green solutions to address the climate, food and energy crises requires the strengthening of science, technology, research and development capacities. These shall "inform behaviours, policy action and governance decisions." Climate science in particular must be "a key factor in designing informed policy responses to mitigate and adapt to climate change and for disaster preparedness and resilience."

In recognition of the crucial role of science and access to scientific information in shaping transformative climate change policies, the Asia Climate Change Consortium (ACCC), a regional advocacy and learning platform for local and national organizations and networks in Asia, call on our governments, the Association of Southeast Asian Nations as well as international development organizations such as the Asian Development Bank, the Asian Infrastructure Investment Bank and the World Bank, to increase efforts in downscaling the projections of the Representative Concentration Pathways (RCPs) to inform multilateral, national and local policies on climate change.

23 http://www.unesco.org/new/en/rio-20/science-for-sustainable-development/

We implore our governments to generate localized, high-resolution scenarios based on Representative Concentration Pathways to determine community-specific and sector-specific impacts and possible responses. We ask that these localized scenarios be utilized in formulating and updating our National Development Plans, Nationally Determined Contributions and National Adaptation Plans to guide enhanced action on mitigation and adaptation.

We also call for increased coordination between government agencies and scientific institutions in developing tools to build the capacities of local governments and communities. We ask agencies and the academe to harmonize efforts based on the scenarios in order to develop local capacities for risk and vulnerability assessments and implementing actions to increase resilience. We envision the use of these tools in ecosystems-based impact analysis for local government units and communities to further understand vulnerabilities. Scenarios must be downscaled further for communities to understand the intensity, magnitude and extent of multiple risks in their ecosystem. In doing so, their responses will be calibrated appropriately.

We ask that our governments facilitate efforts to utilize the knowledge generated from the initiatives above to aid increased access to climate financing. The capacities of local government units and communities in communicating scenarios and establishing scientific evidence behind resilience-building initiatives must be enhanced to access risk transfer and finance mechanisms.

We also call on regional bodies, development financing institutions and regional economic forums, such as the Association of Southeast Asian Nations, the Asian Development Bank, the Asian Infrastructure Investment Bank, the Asia Pacific Economic Forum and others to utilize the science of RCPs in their climate change safeguards for the conduct and evaluation of their projects and investments. True to their respective commitments -- ASEAN's Joint Statement on Climate Change which aims to enhance cooperation among member states to improve the region's collective capacity to address climate change, the ADB's commitment to facilitate a regional shift toward a low greenhouse gas emissions and climate-resilient development path in their Climate Change Operational Framework 2017 - 2030,

the AIIB's Environment and Social Management Framework which supports the three aims of the Paris Agreement to strengthen global response to the threat of climate change related to mitigation, adaptation and the redirection of financial flows, and the APEC's commitment to reduce aggregate energy intensity by 45% from 2005 levels by 2035 as set out in the 2011 APEC Economic Leaders' Declaration -- the scenarios put forward by the RCPs should motivate enhanced climate action and cooperation towards sustainable development for all.

Lastly, **we call on all stakeholders to use new technologies and strategic engagements with the media in communicating the science of Representative Concentration Pathways and localized scenarios as well as appropriate responses based on these to reach the general public**. New technologies such as data science and visualization, social media and virtual reality science, must be maximized in aiding information dissemination.

TOWARDS SCIENCE-INFORMED HIGHER AMBITION AND NATIONALLY-DETERMINED CONTRIBUTIONS TO THE PARIS AGREEMENT IN ASIA

MAY 2018

The Asian continent is the most vulnerable region in the world to the impacts of climate change. Given its diverse geographic, climatic, and demographic profile, the frequency and/or intensity of these impacts will vary between and within nations. However, common projected trends emerged across the continent based from future simulations using Representative Concentration Pathway (RCP) scenarios. By 2100, Asia will experience a rise in temperatures over land and the surrounding oceanic regions at 2.4°C (at RCP4.5) and 4.3°C (at RCP8.5). Historically wet and dry regions will become wetter and drier, respectively. Consequently, six of the 10 countries in the world at highest risk to the impacts of climate change are located in Asia as of 2015.

Given such a high degree of vulnerability throughout the continent, it is critical to achieve the target of "holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels" of the 2015 Paris Agreement. For Asian countries, it is equally urgent, but the window for interventions is short.

Thus, increasing resilience to both slow onset and sudden impacts of climate change shall be a priority. Specifically, disaster and risk reduction management systems must be strengthened to avoid unnecessary losses to both human life and property. The root causes preventing peoples, ecosystems, and institutions from becoming resilient against current and future hazards must be immediately addressed by national and local governments and other legally-mandated authorities.

It is also critical to institute strong adaptation measures in their Nationally Determined Contributions (NDCs), the implementation of which must commence at 2020. The role of healthy ecosystems in helping vulnerable communities better adapt to adverse impacts must be recognized and included in such strategies. To account for the widespread impacts of climate change on different facets of societal development and well-being, NDCs must be linked to the targets specified under the 2030 United Nations Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction. It is also important to recognize that adaptation actions, particularly in relation to natural resource protection and ecosystems integrity, are important factors in mitigation action.

To support this course of action, all countries need to increase their committed targets for reducing greenhouse gas (GHG) emissions in their NDCs. Achieving the reduction targets are not merely a matter of fulfilling a country's voluntary commitments to the Paris agreement; it is also a matter of survival for populations, especially those in the most vulnerable countries in Asia.

Transitioning from fossil fuel-based energy sources to renewable energy sources, complemented by strengthening energy efficiency measures, will pave way to the transformation of Asian countries to low-carbon, resilient economies by the middle and end of the 21st century. However, it is important to recognize that any current or future transitions of this nature alone will not affect the historical GHG emissions that already caused extreme weather events recorded in the past few decades. Therefore, the preservation of carbon sinks such as forests and oceans must be an integral part of the NDCs in Asian countries. Their preservation will not only lead to the reduction of GHG concentrations in the atmosphere; it will also provide co-benefits needed to ensure sustainable development in this continent.

As climate change in itself is a global threat rooted in shifts in natural processes, formulating all mitigation and adaptation measures within NDCs must be based on scientific evidence. Otherwise, it will lead to the implementation of solutions inappropriate for the current conditions and, therefore result in failed action plans that compromise the future of entire nations. As such, the results of climate projections using RCPs should form the core of the basis for science-based solutions. Scientific data and information relevant to instigate climate action should be localized and made available to the public to allow them to deal with all impacts relevant to their localities.

However, developing Asian countries lack the necessary financial and technical resources to deal with the impacts within their respective jurisdictions, especially considering the frequency and intensity of these events relative to the rest of the world. Thus, developed nations must increase their support to allow states in Asia to sufficiently cope with these impacts and reduce their emissions without compromising their ongoing socioeconomic development. This is within the spirit of the United Nations Framework Convention on Climate Change and the subsequent agreements, wherein Parties must operate under the principle of “common but differentiated responsibilities and respective capabilities”.

These courses of action must be implemented within the framework of climate justice. Cases of previous extreme events repeatedly show the tragedy that those least responsible for climate change suffer its most severe consequences. Measures to be implemented must be inclusive of all sectors within all countries, especially those most vulnerable such as indigenous peoples, the youth, women, and the poorest communities. Such actions must ensure an equitable distribution of the benefits of any climate change-related policies and initiatives among all sectors while respecting and protecting their basic human rights.

Therefore, the ACCC strongly calls for the following measures:

1. Commit climate and disaster risk governance and mobilize climate finance to limit temperature increase to 1.5°C or lower, through mitigation actions that reduce and remove historical and current GHG emissions;
2. Increase investments in climate resilience that enhance coping capacities to address risks from current and near-term hazards in order to avoid loss and damage, as well as strengthen adaptive capacities for mid-term and future climate-related hazards;
3. Transition to renewable and sustainable systems and options that drive transformative actions, without threatening the capacities of peoples and ecosystems for resilience and sustainable development; and
4. Urge immediate actions to reduce vulnerabilities in communities at risk to near-term hazards and pave the way for incremental and transformational adaptation in Asia.

NET-ZERO EMISSIONS IN ASIA: KEY ASKS

JUNE 2018

Rapid economic growth in the Asia and the Pacific, coupled with increased population growth, rapid urbanization and expanding industrialization, has led to a dramatic increase in energy demand by 3.3 per cent annually over the last decade. While the region has emerged as a global economic powerhouse, it has become increasingly dependent on imported fossil fuels for energy production in the face of worsening impacts of climate change and environmental degradation. Recent studies have shown that by 2040, Asia will lead the global energy demand growth accounting for 60% share of the global increase (OECD/IEA, 2018).

Six of the 10 countries in the world at highest risk to the impacts of climate change are located in Asia as of 2015. Based on Representative Concentration Pathway (RCP) scenarios, by 2100, Asia will experience a rise in temperatures over land and the surrounding oceanic regions at 2.4°C (at RCP4.5) and 4.3°C (at RCP8.5). Historically wet and dry regions will become wetter and drier, respectively. Consequently, the risks to climate change impact will increase with climate change.

Given such a high degree of risk throughout the continent, it is critical to achieve the target of "holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels" of the 2015 Paris Agreement. For Asian countries, it is equally urgent, but the window for interventions is short. At 0.82 degree temperature increase, the region witnessed the onslaught of Haiyan. At 1 degree increase, monsoon rains and floods devastated the lives of many across the region.

Asian countries must transition away from coal and towards renewable energy and net-zero emissions. All options for decarbonisation have to be considered to meet the global target of limiting temperature increase to 1.5 °C. All countries need to increase their committed targets for reducing greenhouse gas (GHG) emissions in their Nationally Determined Contributions (NDCs). Achieving the reduction targets are not merely a matter of fulfilling a country's voluntary commitments to the Paris agreement; it is also a matter of survival for populations, especially those in the most vulnerable countries in Asia.

However, developing Asian countries lack the necessary financial and technical resources to deal with the impacts within their respective jurisdictions, especially considering the frequency and intensity of these events relative to the rest of the world. Thus, developed nations must increase their support to allow states in Asia to sufficiently cope with and adapt to climate risks and achieve net-zero emissions without compromising their ongoing socioeconomic development. This is within the spirit of the United Nations Framework Convention on Climate Change and the subsequent agreements, wherein Parties must operate under the principle of "common but differentiated responsibilities and respective capabilities".

The following are key asks submitted by the Asia Climate Change Consortium (ACCC), a regional advocacy and learning platform with members of local organizations and national networks in Asia, to the Governments, inter-governmental platforms, and multi-lateral development banks:

1. Accelerate decarbonisation of the energy system across all sectors of the economy.
Transitioning from fossil fuel-based energy sources to renewable energy sources, complemented by strengthening energy efficiency measures and coupling this with phasedown of all GhGs will very high global warming potential like the HFCs (hydroflourocarbons), will pave way to the transformation of Asian countries to low-carbon, resilient economies by the middle and end of the 21st century. Furthermore, low carbon development strategies across all sectors of the economy, including agriculture, transport, buildings and industries, have to be mainstreamed to achieve net-zero emissions. Transforming the economy towards a low carbon pathway means reducing reliance on fossil fuel, developing renewable energy sources, enhancing energy efficiency across urban systems, providing green jobs, sustainable resource management, and nurture ecosystems for sustainable ecosystem services. To achieve this, climate finance to limit temperature increase to 1.5°C or lower must be mobilized through various mitigation actions and decarbonisation strategies.

2. Shift energy investments from coal to renewable energy in a manner that reduces over-all risks especially vulnerabilities.
We call on governments and financial institutions to ensure that all new investments are geared towards the urgent need to meet climate and development targets set by the global community such as the 1.5-degree Celsius limit of the Paris Agreement, the Sustainable Development Goals (SDGs) and the Sendai Framework for Disaster Risk Reduction (SFDRR). Coal-fired power plants must be phased out and the construction of any new coal power plant must be opposed strongly. New energy investments must be directed towards safe and modern renewable energy excluding large hydro and nuclear options. The finance sector cannot be business as usual and must be part of the solution by addressing the immediate needs to mitigate historical and current emissions, increase coping and adaptive capacities to make communities resilient.

3. Promote community-based natural carbon sinks and oppose false solutions.
It is important to recognize that any current or future net-zero transitions alone will not affect the historical GHG emissions that already caused extreme weather events recorded in the past few decades. Therefore, the preservation of carbon sinks such as forests and oceans must be an integral strategy towards net-zero emissions. Their preservation will not only lead to the reduction of GHG concentrations in the atmosphere; it will also provide co-benefits needed to ensure sustainable development in this continent. Natural carbon sinks must be maintained and expanded in recognition of human rights, ecological services, community participation, and biodiversity. Communities must share in the benefits in the expansions of sinks. This also means false solutions must be avoided and opposed. Before adoption, any technology should be assessed for social, cultural, and environmental risks.

4. Uphold climate justice during the process of transition.

The transition towards net-zero emissions should not threaten the capacities of peoples and ecosystems for resilience and sustainable development,safeguards the rights of all, leaving no one behind, and abides by fair-share principles without compromising the call accountability for historical emissions. . Governments must ensure job security and economic opportunities for those who may be displaced or adversely impacted by the phasing out of fossil-fuel-based industries. Measures to be implemented must be inclusive of all sectors within all countries, especially those most vulnerable such as indigenous peoples, the youth, women, and the poorest communities. Decarbonisation strategies must ensure an equitable distribution of the benefits among all sectors while respecting and protecting their basic human rights. Appropriate risks assessments must be conducted to avoid negative impacts and social safeguards must be implemented with due recognition of the rights of all. All these must be pursued with determined resolve and action without forgetting that those accountable for historical emissions have the responsibility to enable challenged States and communities to survive the challenges of climate change.

HFC PHASEDOWN AND ENERGY EFFICIENCY: KEY ASKS

JUNE 2018

According to a report released by OECD/IEA (2018), Asia is becoming the centre of the global energy system. By 2040, the region will account for 60% of the global increase in energy demand with India, China, Southeast Asia taking the lead. In the analysis of the World Energy Outlook Special Southeast Asia Energy Outlook for 2017, India will take 26%, China 21%, Middle East 13%, and Southeast Asia 11% of the 2016-2014 in global energy growth. The use of hydrofluorocarbons (HFCs) has become a growing concern in Asia. Energy demand is projected to increase in the continent, which leads to an increase in the use of cooling equipment amidst rising temperatures, The study indicates that energy demand for space cooling will account to nearly 40% in electricity growth in buildings. Increasing temperature will also increase the demand in the global air conditioner stock. By 2050, when 2/3 of the world's households is projected to acquire air conditioners, China, India and Indonesia are projected to account for half the total number of air-conditioners. This scenario leads to an increase in HFC emissions, which are more powerful greenhouse gases than carbon dioxide, and could lead to further warming. This presents a challenge in climate change mitigation and adaptation in Asia, which will experience its most devastating impacts such as more extreme weather events and sea level rise throughout the 21st century.

To solve this dilemma, the ratification of the Kigali Amendment must become a priority among Asian countries. Adopted in 2016, this addition to the Montreal Protocol aims for a phasedown of HFCs while promoting both energy efficiency and the use of natural refrigerants as alternatives. It also provides financial, logistical, and technical support for nations aiming for an accelerated phasedown process. A successful HFC phasedown can prevent a 0.5-degree temperature increase by 2100, which makes it the most concrete option for achieving the 1.5-degree target of the Paris Agreement. It will enter into force on 1 January 2019 after ratification by at least 20 countries.

However, only three Asian countries have ratified the Kigali Amendment as of this writing: Lao PDR, Maldives, and the Democratic People's Republic of Korea. Some nations have yet to achieve ratification as they are still transitioning from hydrochlorofluorocarbons (HCFCs) to HFCs under the Montreal Protocol, making another change in refrigerant usage expensive and impractical. China, which has yet to ratify the Amendment, is the world's largest HFC manufacturer, placing it in a key political and economic position regarding the phasedown. Despite the historically successful implementation of the Montreal Protocol, these issues may hinder the proposed HFC phasedown if left unaddressed. Thus, the ACCC calls for the following actions to be done by Asian governments:

1. Couple the HFC phasedown with promoting energy efficiency and renewable energy. Improving the energy use by cooling equipment reduces emissions of not only HFCs and other refrigerants, but also carbon dioxide. Pairing such programs with actions toward generating more power from renewables will amplify these reductions, assuring the achievement of targets under both the Kigali Amendment and the Paris Agreement. Therefore, governments must set stricter energy efficiency standards for refrigerators and air-conditioning units after or even before ratification of the Amendment. Policy interventions need to be made to create a demand for low-GWP technologies and facilitate a smoother market transition.

2. Support the growth of sustainable cities through green architecture and sustainable transportation. Most of the energy use from refrigeration and air-conditioning (and thus, HFC emissions) comes from the operationalization of buildings and vehicles throughout the day. As such, governments must establish stringent green building codes to assure their sustainability. With the boom of high-rise edifices across large urban centers, buildings must be designed in a way that enhances ventilation and cooling of living spaces, especially during warmer periods. The use of native materials can also be beneficial for not only constructing these structures, but also provide a boost for local industries. A similar approach may be applied for public transportation, especially jeepneys and buses which are major sources of air pollutants and greenhouse gases. These innovations can be accomplished via collaborations with the private sector and CSOs.

3. Raise awareness about environmental impacts of HFCs among all sectors. Extensive training and capacity-building needs to be provided to servicing technicians, engineers, and other personnel through government agencies. Focus of capacity-building should be on the environmental impacts of refrigerants, recovery and storage of cooling agents, and equipment maintenance and/or disposal. Information and education campaigns for consumers should focus on choosing energy-efficient appliances and sustainable use of these equipment to lower costs and reduce emissions.

4. Collaborate with international funding institutions and neighboring countries for implementing policies and programs. National governments should explore all existing options to secure the necessary funding for enacting the HFC phasedown and energy efficiency plans, especially for developing countries that wants to accelerate the process yet face financial difficulties. Collaborating with nearby countries will also allow the sharing of best practices in innovations from the industry and governance sectors, the allotment of necessary technologies for attaining lower HFC emissions and higher energy efficiency, and an easier dissemination of relevant information among consumers in the region.

5. Demand the Chinese government to commit to the Kigali Amendment as it did with the Paris agreement. Recognizing China's as a major economic power and the world's primary HFC manufacturer, its commitment to the global HFC phasedown is important in achieving the goals of the Kigali Amendment and the co-benefits under the Paris Agreement. Thus, Asian governments must place pressure on China to immediately pledge to the HFC phasedown, promote energy efficiency, and provide support for other developing countries to achieve their targets.

SUBMISSION TO SUPPORT THE UNFCCC SECRETARIAT IN DETERMINING THE SCOPE OF A TECHNICAL PAPER WHICH WILL SERVE AS AN INPUT TO THE REVIEW OF THE WARSAW INTERNATIONAL MECHANISM FOR LOSS AND DAMAGE IN 2019:

TYPE AND NATURE OF ACTIONS TO ADDRESS LOSS AND DAMAGE FOR WHICH FINANCE MAY BE REQUIRED

SUBMITTED BY ASIA CLIMATE CHANGE CONSORTIUM (ACCC) WITH CONTRIBUTION FROM CHRISTIAN AID AND PARTNERS ENGAGED IN ADDRESSING LOSS AND DAMAGE POST-HAIYAN

Introduction

It is projected that Asia Pacific will suffer the most disasters through 2030. In 2017, the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) reported that the 60% of the world's population can be found in Asia Pacific. Through 2030 alone, it is projected that 405 of the global economic losses from disaster will occur in the region. Already, the World Economic Forum that while extreme weather events is a leading global risk, it is closely related to the failure in both mitigation and adaptation actions that will cause ecosystems failure and lead to substantial losses and damages.

Many countries will no longer have time to adapt and, thus, losses and damage will be certain if the matter is unaddressed. Climate change aggravates underlying issues (poverty, inequality, disempowerment, land and housing tenurial insecurity, lack of access and control over natural resources) that leads to loss and damages Reflecting on Article 8 item 1 of Paris Agreement which says, " Parties recognize the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage", ACCC asks what then is the viable approach to loss and damage?

Type and nature of actions to address loss and damage for which finance will be required:

1. Resilience of communities, livelihoods and ecosystems

A situation of loss and damage occurs when failure of climate mitigation occurs and the conditions for extreme weather events and slow-onset events are created affecting communities and ecosystems who lack adaptive and coping capacities in the facing climate change-related hazards.

However, IPCC notes that resilience is a means of managing climate change-related risks that, if left unaddressed can lead to disasters --- which technically is a state of significant losses and damages. The Fifth Assessment Report of the IPCC defines resilience as "the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions".

Thus, the authors of this document recommend that significant investment in resilience of communities, livelihoods and ecosystems are vital in averting loss and recovery of communities and ecosystems. Among the resilience interventions that will need to be financed are the following:

Anticipatory actions for resilience

End-to-end early warning system for early action against slow and rapid onset events;
Contingency measures and pre-emptive evacuation in geographically isolated areas;
Integrated risk assessment, data management including setting up the registry of at-risk populations, data sharing and communication;
Ecosystems-based preparedness measures among communities and countries
Land-use planning informed by climate-related risk assessments
Acquisition of and investing on safer lands for settlement and on climate-resilient infrastructures for temporary and transitional shelter needs;
Multi-stakeholder but community-led and managed approach to the development of safe settlements
Innovations leading to resilience particularly in livelihoods, social cohesion food and water systems, ecosystems and infrastructure
Development of locally-led response preparedness measures to ensure immediate action, upon impact of climate-related hazards, and avoid cascading disasters that lead to further losses and damages
Planning for the continuity of essential service delivery, business and markets
Risk transfer mechanisms that specifically address climate change-related risks rather than impacts to allow early action avoid loss and damage

Actions that will enable communities to absorb unavoidable climate hazards

Invest in building social capital and cohesion in all communities not only among the most vulnerable and the geographically-isolated areas but also among highly dense settlements but where social capital is low;
Enhancement of primary, secondary and tertiary health care services especially in areas with highly vulnerable populations to reduce susceptibility to climate change associated hazards;
Develop climate-resilient infrastructures especially those that are needed to deliver essential services and provide temporary safe shelters where needed;
Enhance resilience of food systems, water systems and ecosystems to ensure food and water security and secure livelihood assets;
And as IPCC AR 5 recommends, finance initiatives that address multi-dimensional inequalities and, to add, addressing the need for social protection that enhance capacities and reduce dependencies and vulnerabilities
Inclusion of marginalized and undocumented sectors in capacity building measures to address vulnerabilities

Actions that will help communities recover from impacts of climate change-related events

Pre-disaster recovery planning at the local, national, and regional levels that become essential part of development planning of governments at all levels;
Recovery measures that promote co-benefits in mitigation, adaptation and resilience in the recovery process;

Multi-stakeholder yet community-lead and managed ecosystems restoration: The case of Haiyan in the Philippines saw the destruction of vital coastal and marine ecosystems as well as terrestrial farming ecosystems. Failure to restore those ecosystems will have devastating impacts in livelihoods and will encourage displacement;
Asset restoration: shelter and livelihood assets in particular
Transformative restoration of ecosystems, settlements, livelihoods, markets that address both mitigation and adaptation needs and honors just transformation processes;
Risk insurance coverage specifically for the most vulnerable sectors who are most-at-risk and often times excluded from risk insurance or unable to pay for high insurance premiums because of their risk status;
Safe, secure and acceptable settlements for displaced populations;
Psycho-social support and health care honoring following loss and damage

Non-economic losses and damages (NELD)
There will be losses and damages that are, for certain, not based on physical nor economic assets. Dedicated financing will have to be set aside for these concerns that are vital to human survival and well-being:

Restoration of human dignity

Legal support for the restoration of identity - many of those who suffer loss and damage will have lost their basic identification records as citizens of States, thus, unable to secure services, assistance, recognition from their own governments;
Shelter, clothing, food, service deliver that befit the status of human beings worthy of respect and honor consistent with Core Humanitarian Standards;

Multi-stakeholder and community-owned restoration of cultural and historical artifacts vital to the identities of peoples and communities;

Support for community-led, determined and owned activities facilitating the restoration of social capital and promoting social cohesion;
Social protection coverage for those displaced ;
Protection of the basic human rights of those in caught in climate-induced migration and support rights-claiming initiatives;
Mainstream NELD the preparation of the National Communications
Create a Centre for NELD Research, Documentation and Advice

The UNFCCC Conference of Parties through the review of the Warsaw International Mechanism for Loss and Damage in 2019 must consider investing in the Architecture to Finance Loss and Damage at the global, regional and national levels without prejudice to climate justice . Specifically,

Invest in setting up a Global Fund to address Loss and Damage of the climate affected communities in vulnerable countries and regions;
Promote the inclusion of measures addressing climate change-related loss and damage in emergency and social safety net programmes of the governments

Provide support for the setting up of institutional and policy frameworks that will accommodate financial support and/or generate/mobilize resources to address loss and damage at the national , regional and global levels and facilitates coherent, effective and efficient implementation

Initiate national level mechanisms to collect data/information on both economic and non-economic loss and damages including measures to address them;
Legislate the formulation of a Strategic Framework and Action and Financial Plan addressing structural and non-structural components of loss and damage;
Developing standard tools and methods for identifying, monitoring, and assessing different non-economic losses and damages considering the challenges of direct and indirect impacts

ACCC SUBMISSION TO THE ASIAN INFRASTRUCTURE INVESTMENT BANK (AIIB)

JUNE 2018 | MUMBAI, INDIA

We acknowledge the initiative of the AIIB to be responsive to the calls of CSOs. However, it has come to our attention that AIIB still funds coal projects despite the commitments made on SE4all, Paris and SDG7. There is an urgency to meet these goals because Asia is not only the most at risk to the challenges of climate change but is now seen as a major contributor to increasing energy demand and , thus, emissions. We have yet to witness a more determined action to urgently respond to these challenges from AIIB especially the social and environmental impacts of projects AIIB so that vulnerabilities of at-risk communities can be reduced and their resilience, enhanced.

The following are key asks submitted by the Asia Climate Change Consortium (ACCC), a regional advocacy and learning platform with members of local and national organisations and networks in Asia, to the Asian Infrastructure Investment Bank (AIIB).

1. Urgently Contribute to Greater Ambition. We call on MDBs to ensure that all new investments are geared towards the urgent need to meet climate and development targets set by the global community such as the 1.5-degree Celsius limit of the Paris Agreement, the Sustainable Development Goals (SDGs). AIIB must commit to ensuring support for the preparation and implementation of NDCs of countries to ensure that targets of the Paris Agreement, on mitigation, adaptation and resilience, especially, keeping the temperature increase to 1.5 C and below are met. AIIB should scale up its support to decentralized RE solutions like solar, wind, mini-hydros and the like that provide energy access especially to poor, off-grid, and isolated communities. We ask AIIB to finance pathways towards the transition to more sustainable energy systems to include renewable energy, energy efficiency, phasedown of HFCs, technology development and transfer, among others, outlined in the NDCs of parties to the Paris Agreement.

2. Prioritize Transformational Projects with Co-Benefits. Financing of false solutions must stop because it creates an excuse to use more fossil fuels and contribute to GHG emissions, all of which may lead to maladaptation. False solutions such as high efficiency low emission (HELE) coal, “clean coal”, large hydro dams, carbon capture and storage (CCS), geo-engineering, and natural gas are unacceptable. These projects do not facilitate the societal transition from unsustainable practices towards a transformation to a fossil-free and more resilient future. Therefore, project selection for financing must have a clear and conscious bias towards sustainable development investments that have co-benefits for both mitigation and adaptation, and does not compromise the adaptive and coping capacities of the most vulnerable.

3. Guarantee Environmental and Social Safeguards. Projects have widespread impacts on populations and ecosystems therefore AIIB must set stringent E&S standards, conduct climate and disaster risk assessments, ex-ante impact analysis and strategic environmental assessments (SEA). All project financing must adopt a rights-based and gender-sensitive approach, and the transition to clean energy must incorporate climate justice principles. These are necessary to avoid and mitigate project impacts and negative externalities on environment and society such as degradation of flora and fauna, water scarcity, displacement, loss of livelihoods and others.

4. Align AIIB Value Chains to the Global Climate Financing Safeguards. AIIB must own its responsibility to the climate financing value chain and its stakeholders that guarantee transparency and accountability in relation to environmental and social safeguards, and international agreements. Multi-sectoral consultations should be conducted to attain free, prior and informed consent (FPIC) for project financing. Banks must also follow the full disclosure principles, be open to grievances and commission third parties to verify compliance.

ACCC ON THE STRATEGY 2030 CONSULTATION DRAFT OF THE ASIAN DEVELOPMENT BANK (ADB)

JUNE 2018

According to the Asia Strategy 2030 Consultation Draft of the ADB, Asia would significantly contribute to the GhG emissions in the decades to come. As such, Asia must start the process of ensuring that their development pathway would be sustainable to ensure that future emissions would be minimized or avoided. This, however, should be countenanced within the development needs of the Asian people, majority of which are highly vulnerable.

It is reported that the Asian continent is the most vulnerable region in the world to the impacts of climate change. Given its diverse geographic, climatic, and demographic profile, the frequency and/or intensity of these impacts will vary between and within nations. However, common projected trends across the continent emerge based on future simulations using Representative Concentration Pathway (RCP) scenarios. They show increase temperatures over land and the surrounding oceanic regions at 2.4°C (at RCP4.5) and 4.3°C (at RCP8.5) by 2100. Historically wet and dry regions will become wetter and drier, respectively. Consequently, 6 of the 10 countries in the world at highest risk to the impacts of climate change are located in Asia as of 2015.

The draft document also states that Asia is at risk to climate change. This is true. However, its risks are not simply due to its exposure to climate and disaster-related hazards. They are also due to its vulnerability as Asia has 326 million people still living in a state of extreme poverty and inequality; and this number is rising.

In the crafting of operational priorities, addressing poverty and inequality, accelerating gender equality, making cities more livable, promoting rural development and security, strengthening governance and institutional capacity must be done in relation to climate and disaster risk and resilience action. There is urgency for immediate actions to reduce vulnerabilities in communities at risk to near-term hazards and pave the way for incremental and transformational adaptation in Asia.

As ADB increases its investments in climate resilience, attention must go to enhance coping capacities to address risks from current and near-term hazards in order to avoid loss and damage, as well as strengthen adaptive capacities for mid-term and future climate-related hazards. Transitioning to renewable and sustainable systems and options that drive transformative actions, without threatening the capacities of peoples and ecosystems for resilience and sustainable development, is imperative.

Therefore, in Tackling Climate Change, Building Climate and Disaster Resilience, and Enhancing Environmental Sustainability, we urge the ADB to:

1. Urgently Contribute to Greater Ambition. ADB must ensure that all new investments are geared towards the urgent need to meet climate and development targets set by the global community such as the 1.5-degree Celsius limit of the Paris Agreement, the Sustainable Development Goals (SDGs) and the Sendai Framework for Disaster Risk Reduction (SFDRR). The financing sector cannot be business as usual and must be part of the solution by addressing the immediate needs to mitigate historical and current emissions, increase coping and adaptive capacities to make communities resilient. Investments must contribute to Parties' nationally determined contributions (NDCs) and ensure reduction and removal historical and current GHG emissions –– and not just current emissions alone.

2. Prioritize Transformational Projects with Co-Benefits. Financing of false solutions must stop because it creates an excuse to use more fossil fuels and contribute to GhG emissions, all of which may lead to maladaptation. False solutions such as high efficiency low emission (HELE) coal, "clean coal", large hydro dams, carbon capture and storage (CCS), geo-engineering, and natural gas are unacceptable. These projects do not facilitate the societal transition from unsustainable practices towards a transformation to a fossil-free and more resilient future. Therefore, project selection for financing must have a clear and conscious bias towards sustainable development investments that have co-benefits for both mitigation and adaptation, and does not compromise the adaptive and coping capacities of the most vulnerable.

3. Guarantee Environmental and Social Safeguards. Projects have widespread impacts on populations and ecosystems therefore ADB must set stringent E&S standards, conduct climate and disaster risk assessments, ex-ante impact analysis and strategic environmental assessments (SEA). All project financing must adopt a rights-based and gender-sensitive approach, and the transition to clean energy must incorporate climate justice principles. These are necessary to avoid and mitigate project impacts and negative externalities on environment and society such as degradation of flora and fauna, water scarcity, displacement, loss of livelihoods and others.

4. Align ADB Value Chains to the Global Climate Financing Safeguards. ADB must own its responsibility to the climate financing value chain, including relationships with financial intermediaries, and its stakeholders that guarantee transparency and accountability in relation to environmental and social safeguards, and international agreements. Multi-sectoral consultations should be conducted to attain free, prior and informed consent (FPIC) for project financing. Banks must also follow the full disclosure principles, be open to grievances and commission third parties to verify compliance.