

JOINT COOPERATION PROGRAMME BANGLADESH – THE NETHERLANDS

Key findings of the Working Group I (WGI) contribution to the IPCC's Sixth Assessment Report (AR6) and its importance for Bangladesh

Short summary of the webinar on 11 August 2021



JOINT COOPERATION PROGRAMME

Bangladesh Netherlands

Knowledge development for a prosperous delta

Summary of Webinar on 11 August 2021 on the key findings of the Working Group I (WGI) contribution to the IPCC's Sixth Assessment Report (AR6) and its importance for Bangladesh

Organizer:	ICCAD, IUB, IPCC, BUET and JCP
Key Note speaker:	Professor A. K. M. Saiful Islam, IWFM, BUET
Moderator:	Professor Saleemul Huq, Director, ICCAD
Discussant:	Professor Bart van den Hurk, Senior expert on weather and climate characteristics, Strategic Research Manager at Deltares
Summary:	Catharien Terwisscha van Scheltinga and Syeda Afifa Sonia, WUR/JCP

Introduction: Professor Saleemul Huq welcomed everyone and gave a brief description about IPCC and its 6th Assessment Report (AR6). For more details on AR6, please see <https://www.ipcc.ch/report/ar6/wg1/>

Prof A.K.M. Saiful Islam's Presentation: Prof Islam gave a presentation on the “Key Findings of AR6 - WG I”. He mentioned that 234 authors from 65 countries contributed to this report. He showed in his presentation that climate change is already affecting every inhabited region across the globe, with human influence contributing to many observed changes in weather and climate extremes. He also mentioned that multiple climatic impact-drivers are projected to change in all regions of the world.

Prof Bart van den Hurk's presentation: Bart mentioned that the global population has to make a clear choice about climate change. He discussed that low lying delta regions are particularly exposed to sea level rise, variable discharge, and high population density. He said that climate and hydrological dynamics may become less predictable. He showed in his presentation the regional fact sheets of climate change for Asia and South Asian region as included in AR6, WGI report. He highlighted the new element of AR6: the interactive atlas, where we all can see and use data: <https://interactive-atlas.ipcc.ch/>

Discussion: In the discussion, the point was raised that climate variability in Bangladesh is already high. As IPCC indicated that variability may change, we need to establish if and how variability in Bangladesh is changing. Overall, the need to collect data at local level, was stressed, also as global models do not always cover all particular climate aspects in Bangladesh. Further, the need to

translate climate change information to useful knowledge to local people e.g. regarding agriculture and water management, was discussed.

Actions:

- Professor Saleemul Huq and Professor Saiful Islam will write about “what does 6th assessment report mean for Bangladesh.”
- Saleemul Huq invited Catharien and Bart to liaise for a long term plan as “how do we collaborate doing further research of good quality”. He mentioned for instance the possibility for more Masters and PhD students to connect, to allow on regular basis Dutch students to come to Bangladesh and Bangladeshi student to go to the Netherlands.

Concluding Remarks:

- Professor Saleemul Huq mentioned that this 6th assessment report is the 1st report about loss and damage from climate change: We now have attribution of human in the climate change which was provided by 6th assessment report.

The registration of the event is online in the ICCCAD Facebook page and the webinar can be seen (819 views on 23 Aug 2021!) via the Facebook post in JCP group, or by clicking this link:

<https://www.facebook.com/icccad/videos/424259468899038>

Annex- A

Professor A. K. M. Saiful Islam's Presentation slides

SIXTH ASSESSMENT REPORT
Working Group I – The Physical Science Basis

11 August 2021

Key Findings of AR6 - WG I

নীতি নির্ধারকদের জন্য সারাংশ


AKM Saiful Islam, Lead Author, Chapter 12
এককএম সাইফুল ইসলাম, প্রধান লেখক, অধ্যায় ১২

#ClimateReport #IPCC

SIXTH ASSESSMENT REPORT
Working Group I – The Physical Science Basis

CONTRIBUTIONS TO THE REPORT

Author Team	Review Process
234 authors from 65 countries	14,000 scientific publications assessed
28% women, 72% men	78,000+ review comments
30% new to the IPCC	46 countries commented on Final Government Distribution



Recent changes in the climate are widespread, rapid, and intensifying, and unprecedented in thousands of years.

জলবায়ুতে সাম্প্রতিক পরিবর্তনগুলি ব্যাপক, দ্রুত এবং তীব্র, এবং হাজার হাজার বছরে নজিরবিহীন।

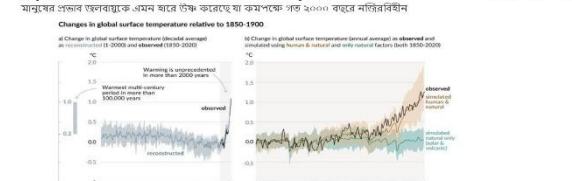
SIXTH ASSESSMENT REPORT
Working Group I – The Physical Science Basis

Human influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years

মানুষের প্রভাব জলবায়ুতে এমন দ্রুত তরলতা যা কমপক্ষে গত ২০০০ বছরে নজিরবিহীন

Figure SPM.1

Changes in global surface temperature relative to 1850-1900



The likely range of total human-caused global surface temperature increase from 1850–1900 to 2010–2019 is 0.8°C to 1.3°C, with a best estimate of 1.07°C.

SIXTH ASSESSMENT REPORT
Working Group I – The Physical Science Basis

CO ₂ concentration	Sea level rise	Arctic sea ice area	Glaciers retreat
Highest in at least 2 million years	Fastest rates in at least 3000 years	Lowest level in at least 1000 years	Unprecedented in at least 2000 years

SIXTH ASSESSMENT REPORT
Working Group I – The Physical Science Basis

Extreme heat More frequent More intense	Heavy rainfall More frequent More intense	Drought Increase in some regions	Fire weather More frequent	Ocean Warming Acidifying Losing oxygen

SIXTH ASSESSMENT REPORT
Working Group I – The Physical Science Basis

Human influence, main driver of...

- Hot extremes, which have become more frequent and more intense
- ocean warming since the 1970s, and ocean acidification.
- changes we see in the frozen areas of the planet:
 - global retreat of glaciers since the 1990s
 - 40% decrease in Arctic sea ice since 1979
 - decrease in spring snow cover since the 1950s.




Unless there are immediate, rapid, and large-scale reductions in greenhouse gas emissions, limiting warming to 1.5°C will be beyond reach.

গ্রিনহাউস গ্যাস নিঃসরণ হ্রাস অবিলম্বে, দ্রুত এবং ব্যাপক আকারে না করা পর্যন্ত, উষ্ণতা বৃদ্ধিকে ১.৫ ডিগ্রি সেন্টিগ্রেডে সীমাবদ্ধ করা নাগালের বাইরে থাকবে।

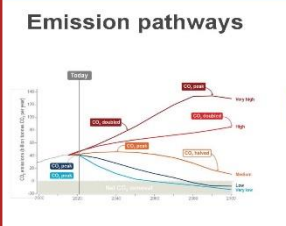
ভবিষ্যতের গ্রিনহাউস গ্যাস নিঃসরণ অতিরিক্ত উষ্ণতা সৃষ্টি করবে। মোট বৈশ্বিক উষ্ণায়ন অতীত এবং ভবিষ্যতের কার্বন-ডাই-অক্সাইড নিঃসরণ উপরই প্রধানত নির্ভর করবে।

Future emissions cause future additional warming

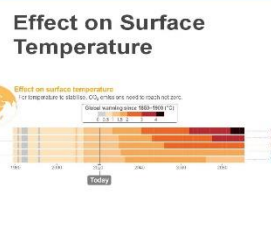


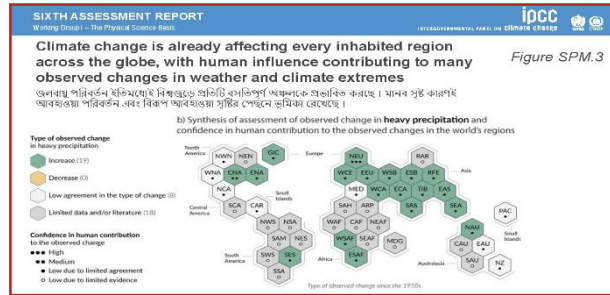
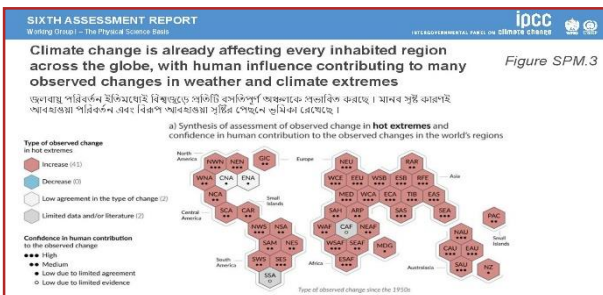
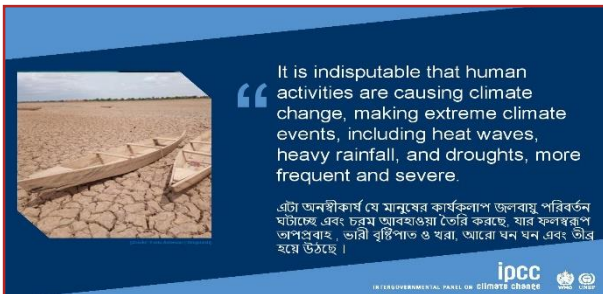
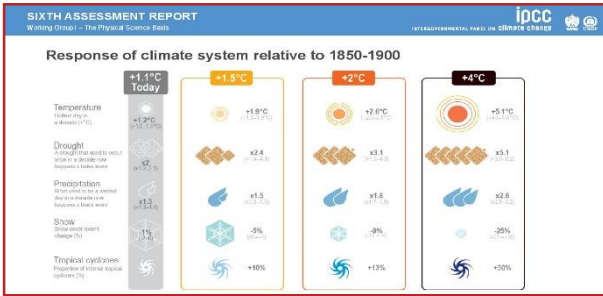
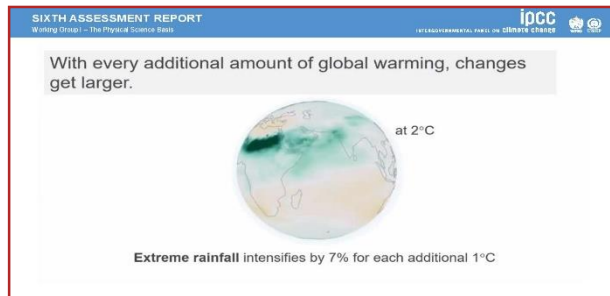
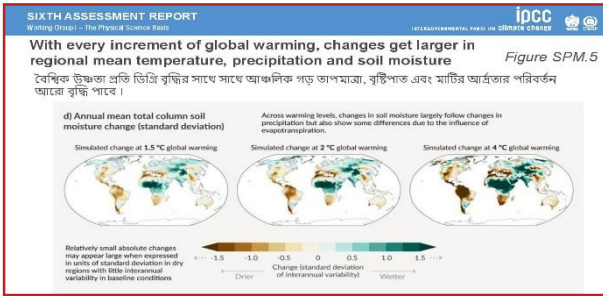
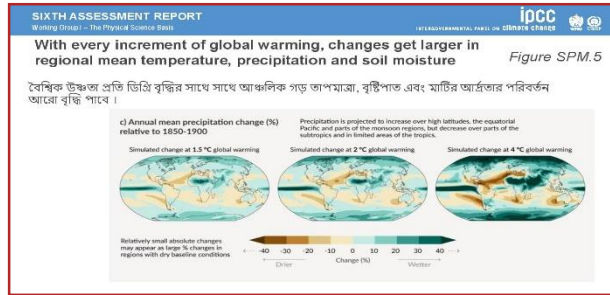
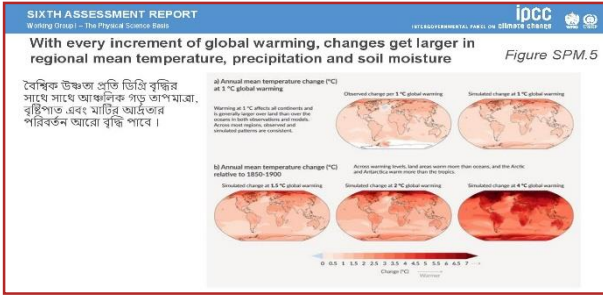
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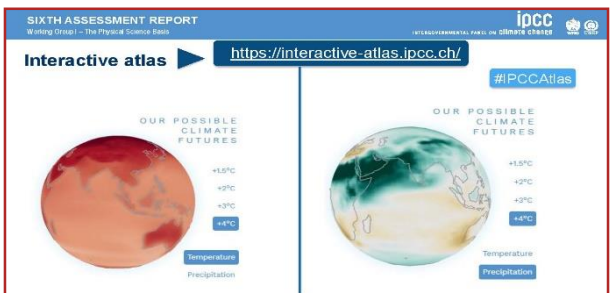
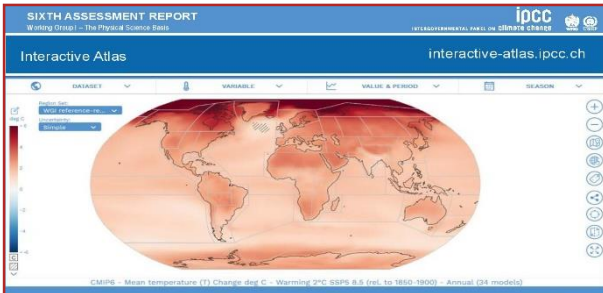
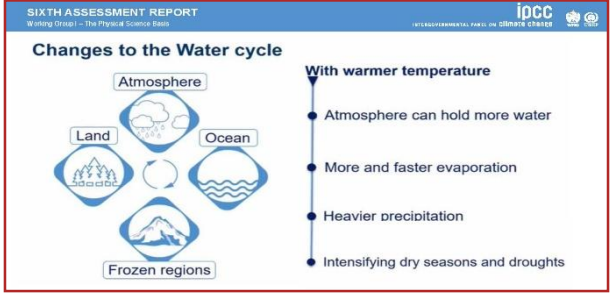
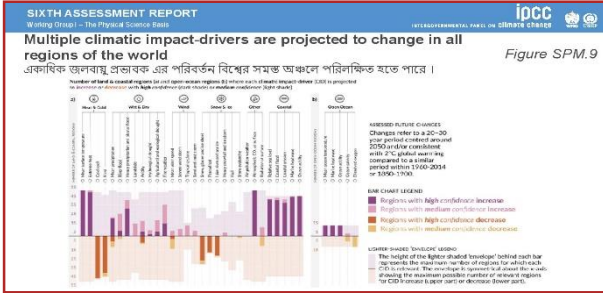
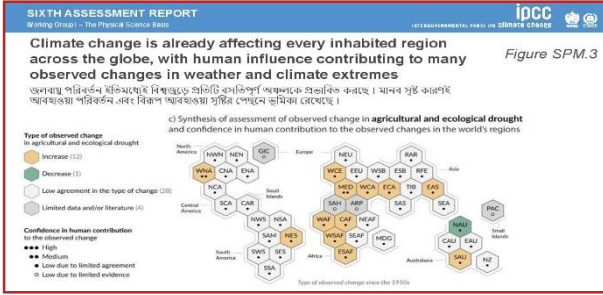
Emission pathways



Effect on Surface Temperature







“Climate change is already affecting every region on Earth, in multiple ways. The changes we experience will increase with further warming.”

জলবায়ু পরিবর্তন ইতিমধ্যেই পৃথিবীর প্রতিটি অঞ্চলকে একাধিক উপায়ে প্রভাবিত করছে। আমরা জলবায়ুর যে পরিবর্তনগুলি অনুভব করি তা উষ্ণতা বৃদ্ধির সাথে আরও বৃদ্ধি পাবে।

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“There's no going back from some changes in the climate system... জলবায়ু ব্যবস্থার কিছু পরিবর্তন থেকে পেছনে প্রত্যাবর্তনের সুযোগ নেই...”


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Ocean and ice sheets

Ocean temperature: Increasing
 Greenland Ice Sheet: Melting
 Sea level: Rising

“...However, some changes could be slowed or others could be stopped by limiting warming. কিন্তু, কিছু পরিবর্তনের গতি ধীর করা যেতে পারে এবং বেশিরকম উষ্ণতা বৃদ্ধি সীমাবদ্ধ করে অন্যগুলি বন্ধ করা যেতে পারে।”

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“ There’s no going back from some changes in the climate system. However, some changes could be slowed and others could be stopped by limiting warming.

জলবায়ু ব্যবস্থার কিছু পরিবর্তন থেকে প্রত্যাবর্তনের সুযোগ নেই। কিন্তু, কিছু পরিবর্তন ধীর হতে পারে এবং বৈশ্বিক উষ্ণতা বৃদ্ধি সীমাবদ্ধ করে অন্যতরিল বন্ধ করা যেতে পারে।

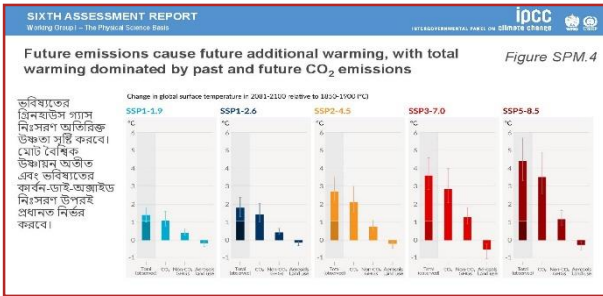
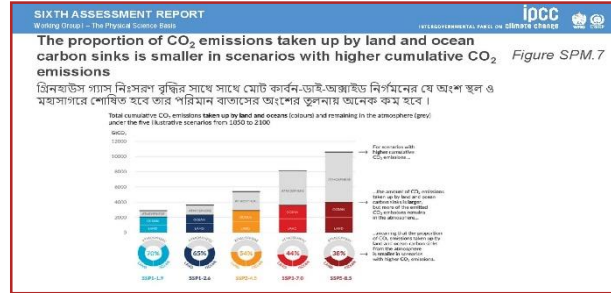
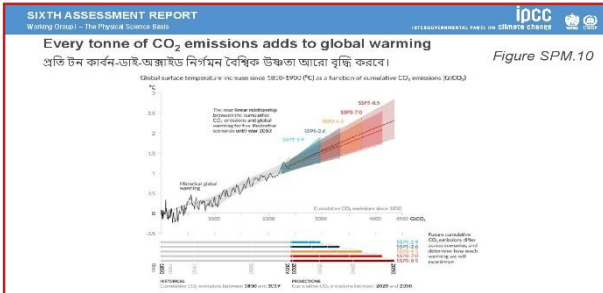
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INTERNATIONAL PANEL ON CLIMATE CHANGE

To limit global warming, strong, rapid, and sustained reductions in CO₂, methane, and other greenhouse gases are necessary.

This would not only reduce the consequences of climate change but also improve air quality.

বৈশ্বিক উষ্ণতা বৃদ্ধি সীমাবদ্ধ করার জন্য, কার্বন-ডাই-অক্সাইড, মিথেন এবং অন্যান্য গ্রিনহাউস গ্যাসের নিঃসরণ কমানোর দ্রুত এবং স্থায়ী হওয়া প্রয়োজন। এটি কেবল জলবায়ু পরিবর্তনের কারণে পরিণতি কমাবে না বরং বাতাসের মানও উন্নত করবে।

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INTERNATIONAL PANEL ON CLIMATE CHANGE



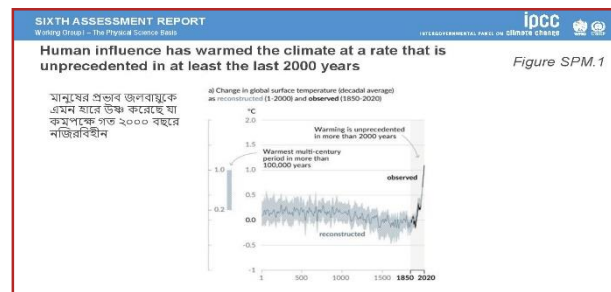
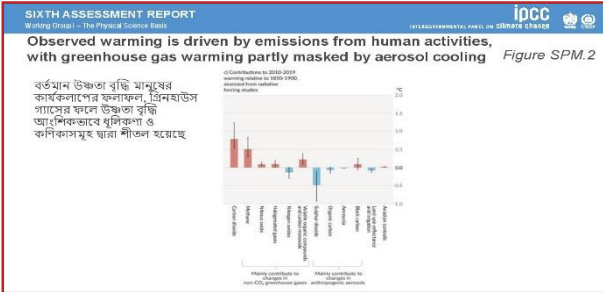
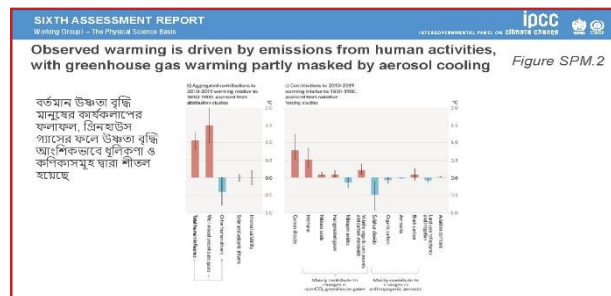
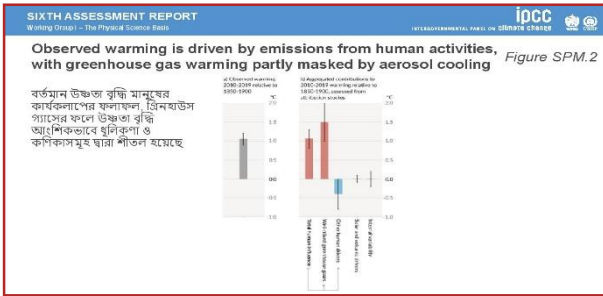
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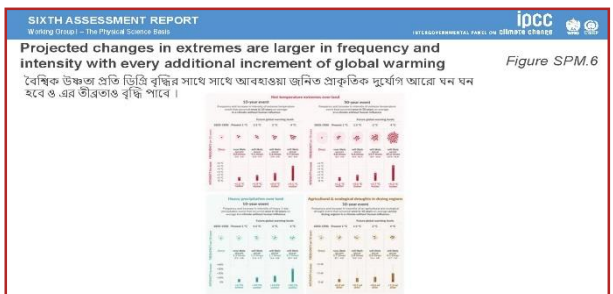
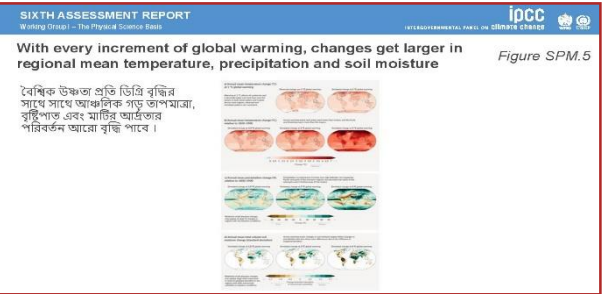
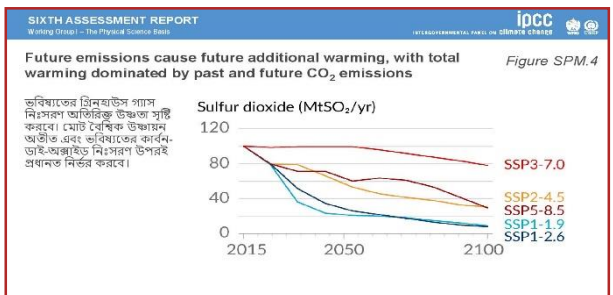
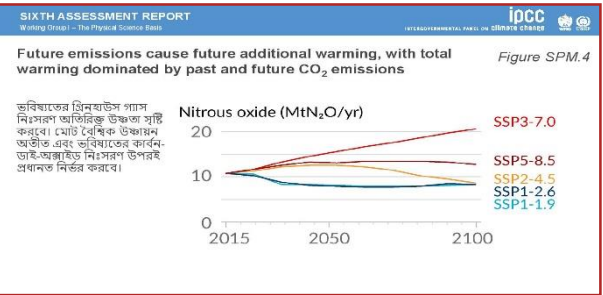
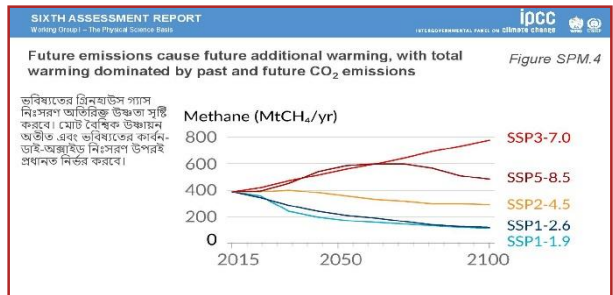
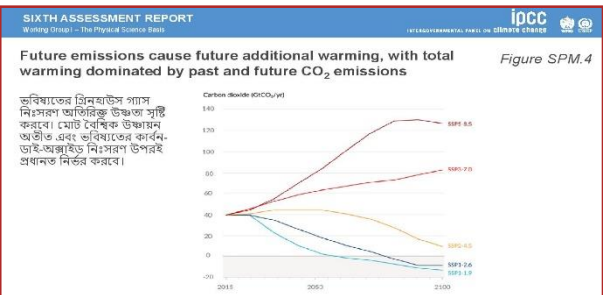
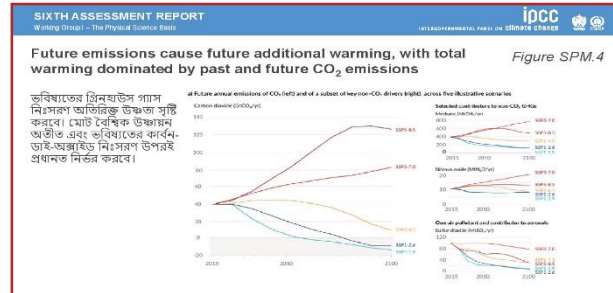
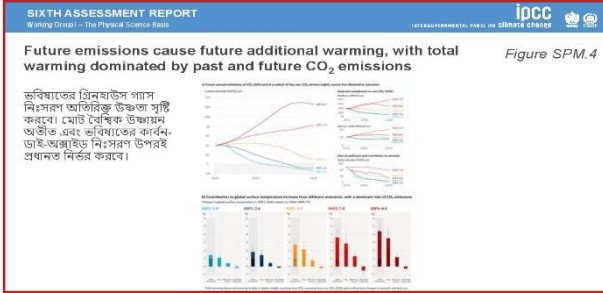
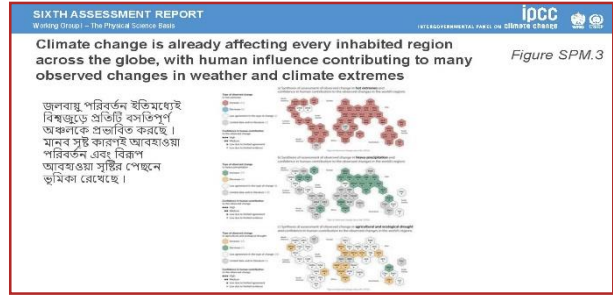
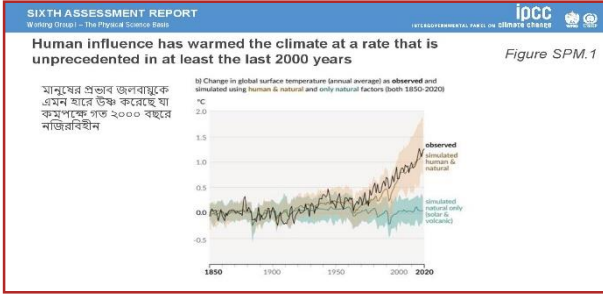
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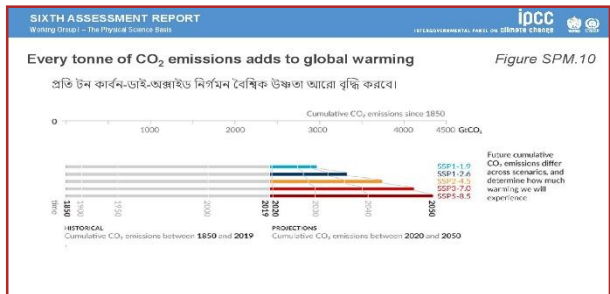
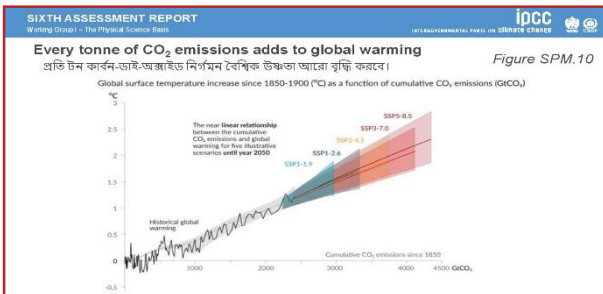
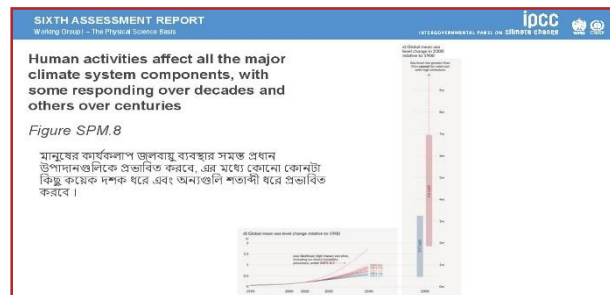
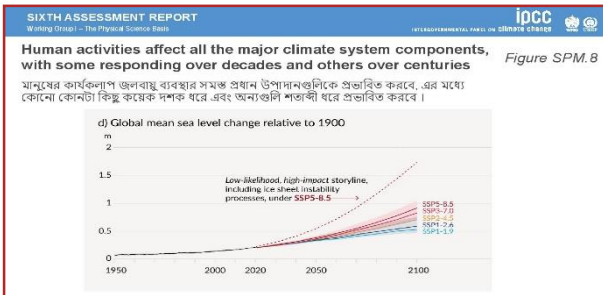
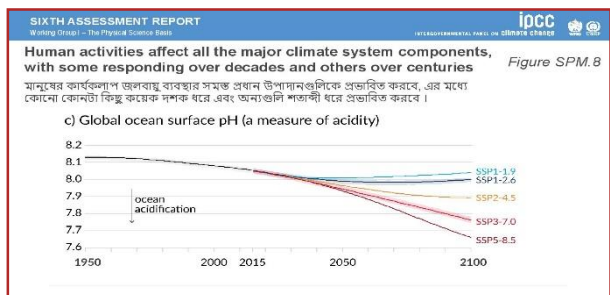
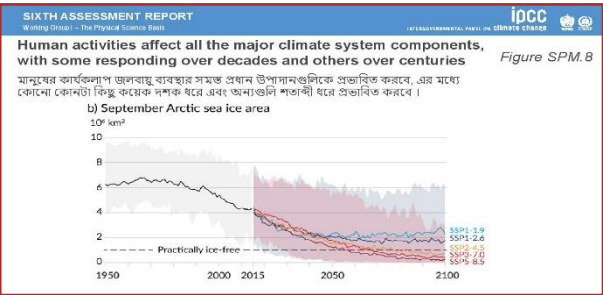
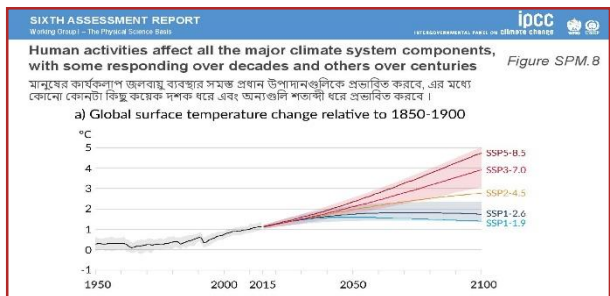
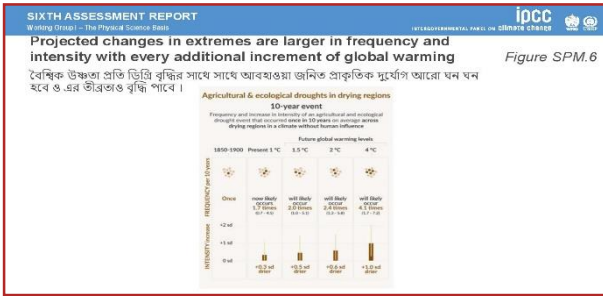
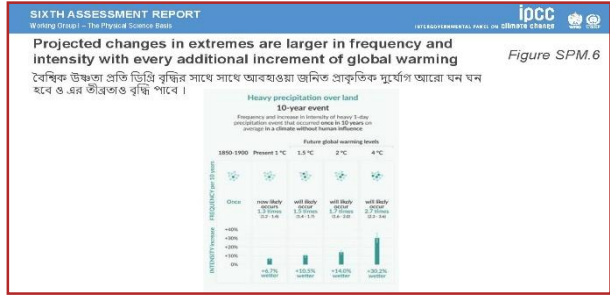
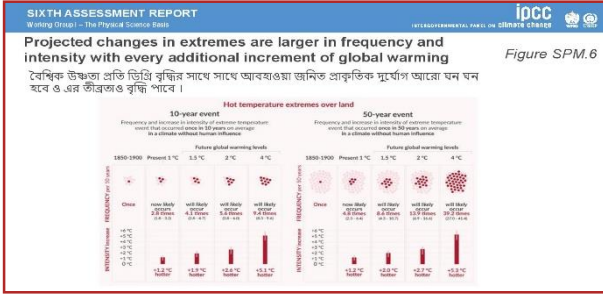
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Annex- B

Professor Bart van den Hurk's Presentation slides

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CLIMATE CHANGE 2021
 The Physical Science Basis
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Key findings of AR6-WG1

Prof Bart van den Hurk
 Lead Author in Atlas chapter

Deltares

Introduction to the Bangladesh Netherlands Joint Cooperation Programme (JCP)

Longer term knowledge cooperation
 6x knowledge programmes – to address important questions related to a.o. SDP2100 implementation

- Bangladesh Metamodel – supporting the BDP2100 – GED and key agencies
- Clean and safe water – Dhaka – DoE
- Polders of the future – Polder 40/1 – BWDB and DAE and WMOs
- Go with the flow – Old Brahmaputra – BIWTA and BWDB
- Information for Impact – App – GED & stakeholder community
- Make it real – Water and Food Nexus – DAE and agriculture sector

More info at our website: <http://www.jcpbd.nl/>
 Facebook page & group: <https://www.facebook.com/JCP-Bangladesh-The-Netherlands-1113368138862886/>
 JCP Newsletter and Delta Bulletin: Ms. Syeda Sonia sonyas05@gmail.com
 Bangladesh Netherlands Water Youth Forum: nishal.sardica@delatara.nl

Deltares

Sixth Assessment Report
My personal take home messages

- The global population has to make a clear choice
 - We shouldn't only convey bad news, but link it to options to act
- Low lying delta regions are particularly exposed
 - Sea level rise, variable discharge, hot & humid conditions, high population density
- Increase of extremes is linked to increase in interannual variability
 - Climate and hydrological dynamics may become less predictable

Deltares

Sixth Assessment Report
Useful resources

- The Regional Factsheets
 - For Asia and the South-Asian region separately

South Asia (SAS)

- Heatwaves and humid heat stress will be more intense and frequent during the 21st century (medium confidence).
- Both annual and summer monsoon precipitation will increase during the 21st century, with enhanced interannual variability (medium confidence).

Deltares

https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Asia.pdf

Sixth Assessment Report
Useful resources

- The Interactive Atlas
 - Observations and model projections
 - Global and regional

Deltares

<https://interactive-atlas.ipcc.ch/>

Sixth Assessment Report
Useful resources

- The Interactive Atlas
 - Observations and model projections
 - Global and regional
 - Regional zooms

Change in annual cycle precipitation @2° warming

Deltares

<https://interactive-atlas.ipcc.ch/>

Sixth Assessment Report
Useful resources

- The Interactive Atlas
 - Observations and model projections
 - Global and regional
 - Regional zooms

Change in annual cycle precipitation @4° warming

Deltares

<https://interactive-atlas.ipcc.ch/>