United Nations Framework Convention on Climate Change

Workstream 4.3: Climate Risks

LEG regional training workshop on national adaptation plans (NAPs) for for African Lusophone and island States

7 – 11 September 2015, Antananarivo, Madagascar

Least Developed Countries Expert Group (LEG)

Terms of reference for the workstream

Objectives of the workstream:

a) To understand the workstream concept (using an example workstream)
b) To produce a sample workstream e.g. for the next 5-10 years.
c) To identify key elements and outputs and outcomes for the sample workstream
d) To focus on activities and steps pertaining to climate risks, climate information services and climate data needs
e) Produce a summary of scenarios of future climate risks under 2 degree global temperature goal based on best available science (IPCC 5AR or other)
f) Recommend a simplified approach for downscaling for the region and how capacity could be built to improve capacity for climate projections

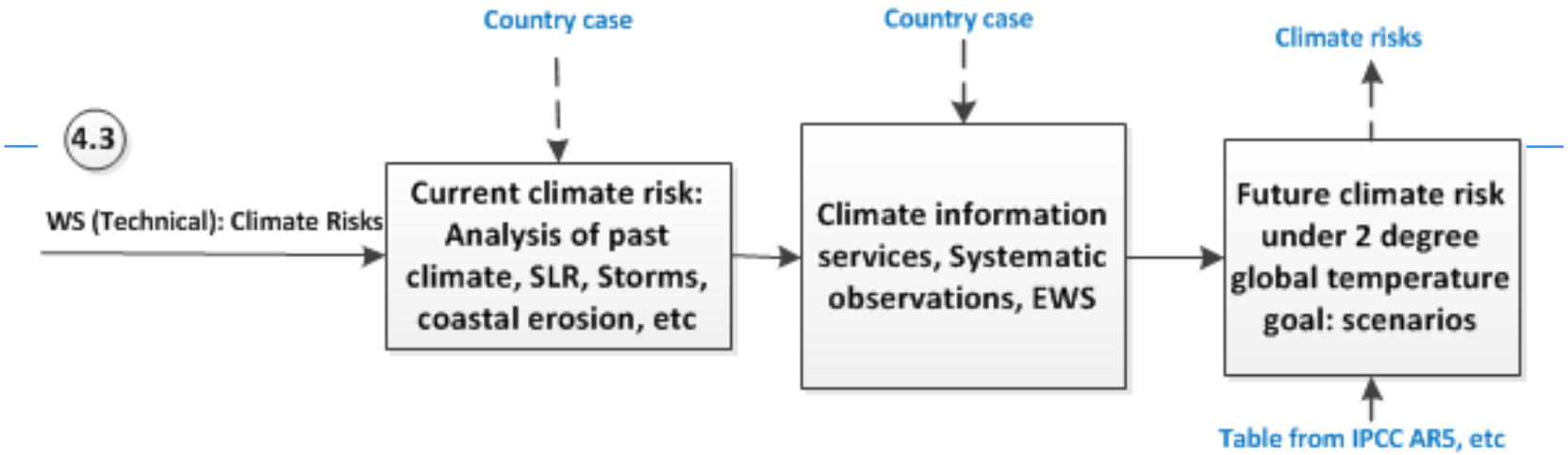
Terms of reference for the parallel workstream group

Mechanics of the parallel group

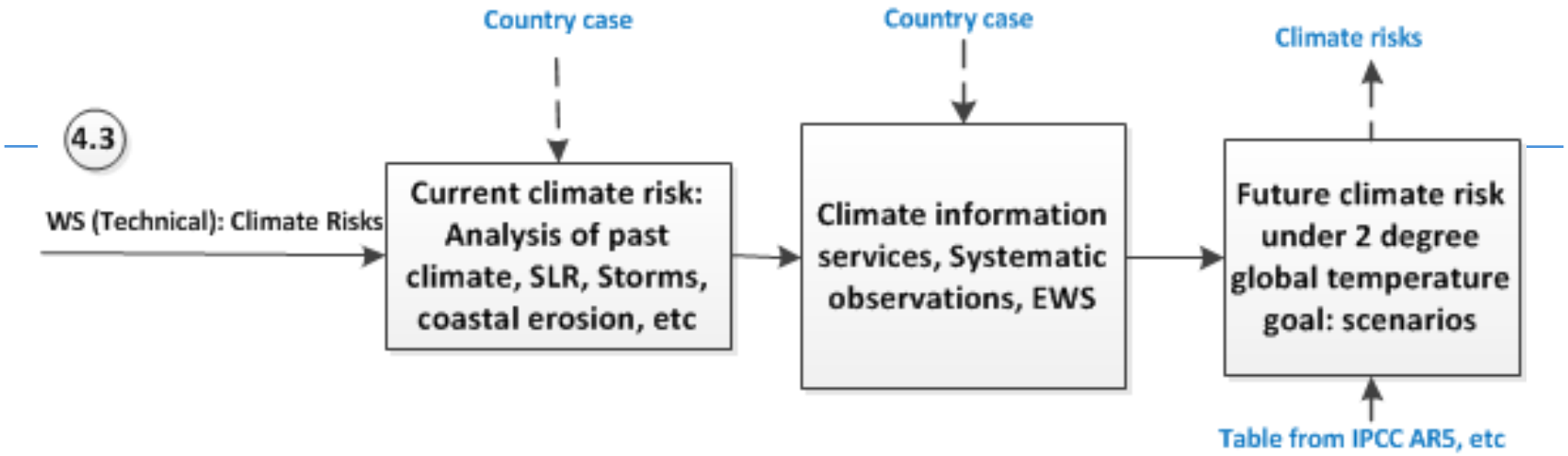
- Select a facilitator and rapporteur
- LEG member will present the objectives and overview of the particular workstream example, addressing how it fits in the whole process
- Presentations from the LEG, practical experiences from countries and organizations during the group work to add example
- The facilitator will ensure an open and interactive session to arrive at the outputs of the session
- Produce outputs listed in the objectives by focusing on
  a) key elements and outputs and outcomes for the sample workstream
  b) A table of projected climate for the region for use by other workstreams in assessing climate change

Note: Please agree on a schedule to complete the work within the time allocated

Time	Agenda
10:00 – 10:30	Introduction to WS 3. Climate risks Discussion of the case study: what is expected at the end of the day
10:30 – 16:30	Overview presentations and exercises to define
	- **Current climate risks: Analysis of past climate** - **Climate information services, Systematic observations, EWS** - Future climate risk under 2 degree global temperature goal: scenarios
	Country presentations to share specific experiences and good practices on the above during the discussion
16:30 – 17:30	Consolidation of outputs of the workstreams
17:00 – 17:30	Re-convene in plenary for wrap-up for the day



- Summarize major climatic risks for the region based on past climate
- Summarize key projections for the region (to be forwarded to WS 3.2 for identifying key vulnerabilities)
- Recommend a simplified approach for downscaling climate scenarios in the region (taking a regional approach)
- Discuss how climate information services could be improved in the region to service all stakeholders



The following are examples are for the Asia Region based on the IPCC AR5 for demonstration purposes.

Source: IPCC AR5 WGII, Asia Chapter

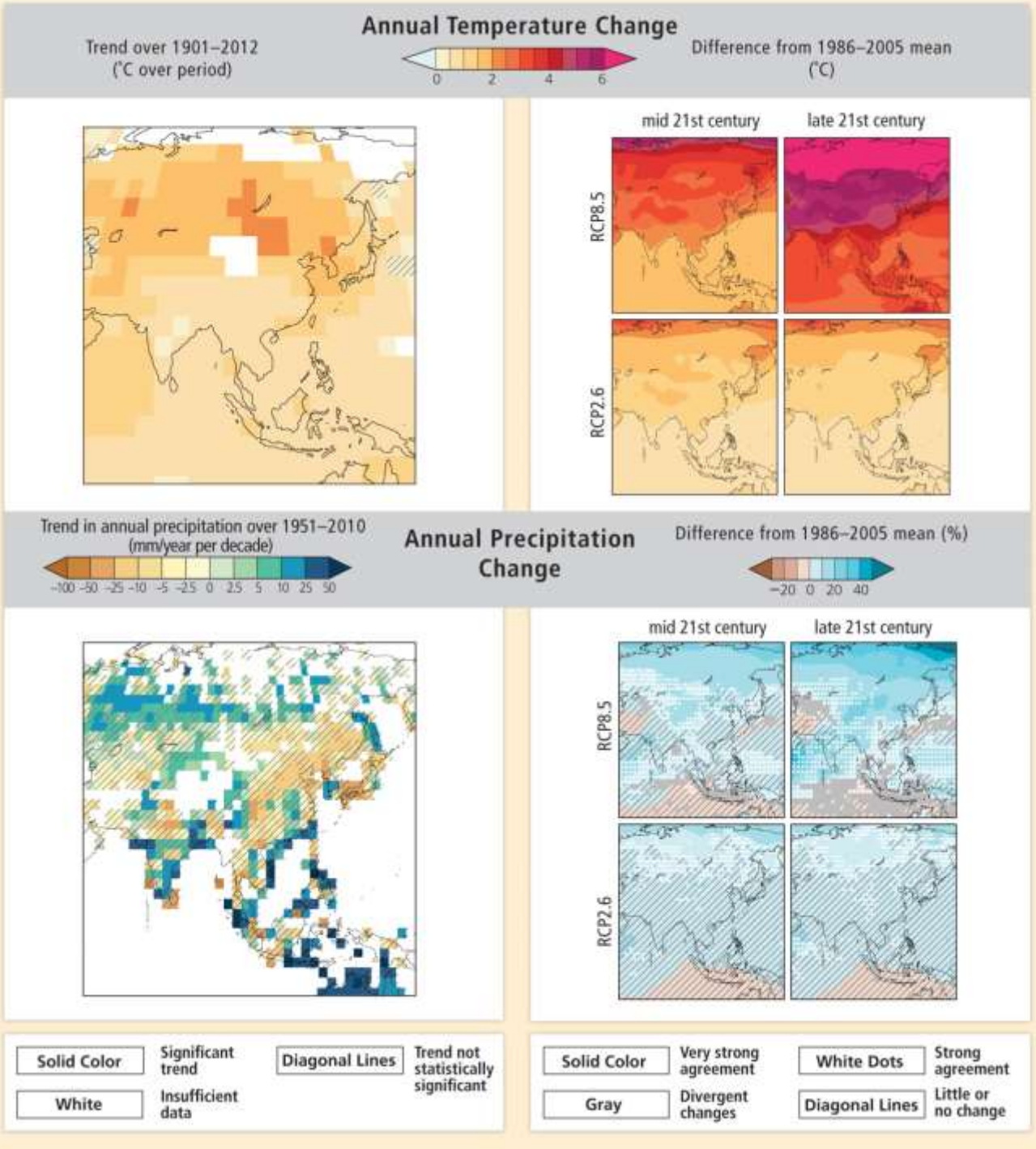
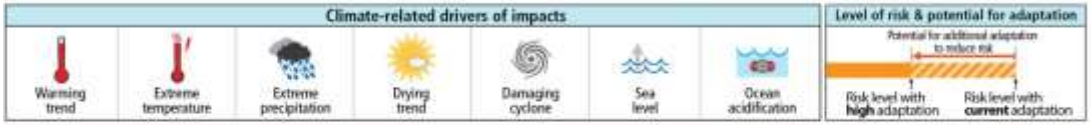

Annual Temperature Change
Trend over 1901–2012
(°C over period)
0 2 4 6
Difference from 1986–2005 mean
(°C)
mid 21st century
late 21st century
RCP8.5
RCP2.6
Trend in annual precipitation over 1951–2010
(mm/year per decade)
-100 -50 -25 -10 -5 -2.5 0 2.5 5 10 25 50
Annual Precipitation Change
Difference from 1986–2005 mean (%)
-20 0 20 40
mid 21st century
late 21st century
RCP8.5
RCP2.6
Solid Color
Significant trend
Diagonal Lines
Trend not statistically significant
White
Insufficient data
Solid Color
Very strong agreement
White Dots
Strong agreement
Gray
Divergent changes
Diagonal Lines
Little or no change

Table 24-1 | Key risks from climate change and the potential for risk reduction through mitigation and adaptation in Asia. Key risks are identified based on assessment of the literature and expert judgments, with supporting evaluation of evidence and agreement in the referenced chapter sections. Each key risk is characterized as very low, low, medium, high, or very high. Risk levels are presented for the near-term era of committed climate change (here, for 2030–2040), in which projected levels of global mean temperature increase do not diverge substantially across emissions scenarios. Risk levels are also presented for the longer term era of climate options (here, for 2080–2100), for global mean temperature increase of 2°C and 4°C above pre-industrial levels. For each time frame, risk levels are estimated for the current state of adaptation and for a hypothetical highly adapted state. As the assessment considers potential impacts on different physical, biological, and human systems, risk levels should not necessarily be used to evaluate relative risk across key risks. Relevant climate variables are indicated by symbols.



Key risk	Adaptation issues & prospects	Climatic drivers	Timeframe	Risk & potential for adaptation
Increased risk of crop failure and lower crop production could lead to food insecurity in Asia (*medium confidence*) [24.4.4]	Autonomous adaptation of farmers on-going in many parts of Asia.		Present Near term (2030–2040) Long term (2080–2100) 2°C 4°C	Very low – Medium – Very high
Water shortage in arid areas of Asia (*medium confidence*) [24.4.1.3, 24.4.1.4]	Limited capacity for water resource adaptation; options include developing water saving technology, changing drought-resilient crops, building more water reservoirs.		Present Near term (2030–2040) Long term (2080–2100) 2°C 4°C	Very low – Medium – Very high
Increased riverine, coastal, and urban flooding leading to widespread damage to infrastructure, livelihoods, and settlements in Asia (*medium confidence*) [24.4]	• Exposure reduction via structural and non-structural measures, effective land-use planning, and selective relocation • Reduction in the vulnerability of lifeline infrastructure and services (e.g., water, energy, waste management, food, biomass, mobility, local ecosystems, telecommunications) • Construction of monitoring and early warning systems; Measures to identify exposed areas, assist vulnerable areas and households, and diversify livelihoods • Economic diversification		Present Near term (2030–2040) Long-term (2080–2100) 2°C 4°C	Very low – Medium – Very high
Increased risk of flood-related deaths, injuries, infectious diseases and mental disorders (*medium confidence*) [24.4.6.2, 24.4.6.3, 24.4.6.5]	Disaster preparedness including early-warning systems and local coping strategies.		Present Near term (2030–2040) Long term (2080–2100) 2°C 4°C	Very low – Medium – Very high
Increased risk of heat-related mortality (*high confidence*) [24.4]	• Heat health warning systems • Urban planning to reduce heat islands; Improvement of the built environment; Development of sustainable cities • New work practices to avoid heat stress among outdoor workers		Present Near term (2030–2040) Long term (2080–2100) 2°C 4°C	Very low – Medium – Very high
Increased risk of drought-related water and food shortage causing malnutrition (*high confidence*) [24.4]	• Disaster preparedness including early-warning systems and local coping strategies • Adaptive/integrated water resource management • Water infrastructure and reservoir development • Diversification of water sources including water re-use • More efficient use of water (e.g., improved agricultural practices, irrigation management, and resilient agriculture)		Present Near term (2030–2040) Long term (2080–2100) 2°C 4°C	Very low – Medium – Very high
Increased risk of water and vector-borne diseases (*medium confidence*) [24.4.6.2, 24.4.6.3, 24.4.6.5]	Early-warning systems, vector control programs, water management and sanitation programs.		Present Near term (2030–2040) Long term (2080–2100) 2°C 4°C	Very low – Medium – Very high

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Table 24-2 | The amount of information supporting conclusions regarding observed and projected impacts in Asia.

Sector	Topics/issues	North Asia		East Asia		Southeast Asia		South Asia		Central Asia		West Asia	
	O = Observed impacts, P = Projected Impacts	O	P	O	P	O	P	O	P	O	P	O	P
Freshwater resources	Major river runoff	/	x	/	/	/	/	/	x	x	x	x	x
	Water supply	x	x	x	x	x	x	x	x	x	x	x	x
Terrestrial and inland water systems	Phenology and growth rates	/	/	/	/	x	x	x	x	x	x	x	x
	Distributions of species and biomes	/	/	/	/	x	x	x	/	x	x	x	x
	Permafrost	/	/	/	/	/	x	/	/	/	/	/	x
	Inland waters	x	x	/	x	x	x	x	x	x	x	x	x
Coastal systems and low-lying areas	Coral reefs	NR	NR	/	/	/	/	/	/	NR	NR	/	/
	Other coastal ecosystems	x	x	/	/	x	x	x	x	NR	NR	x	x
	Arctic coast erosion	/	/	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Food production systems and food security	Rice yield	x	x	/	/	x	/	x	/	x	x	X	/
	Wheat yield	x	x	x	x	x	x	x	/	x	x	/	/
	Corn yield	x	x	x	/	x	x	x	x	x	x	x	x
	Other crops (e.g., barley, potato)	x	x	/	/	x	x	x	x	x	X	/	/
	Vegetables	x	x	/	x	x	x	x	x	x	x	x	x
	Fruits	x	x	/	x	x	x	x	x	x	x	x	x
	Livestock	x	x	/	x	x	x	x	x	x	x	x	x
	Fisheries and aquaculture production	x	/	x	/	x	/	x	x	x	x	x	x
	Farming area	x	/	x	/	x	x	x	/	x	/	x	x
	Water demand for irrigation	x	/	x	/	x	x	x	/	x	x	x	x
	Pest and disease occurrence	x	x	x	x	x	x	x	/	x	x	x	x
Human settlements, industry, and infrastructure	Floodplains	x	x	/	/	/	/	/	/	x	x	x	x
	Coastal areas	x	x	/	/	/	/	/	/	NR	NR	x	x
	Population and assets	x	x	/	/	/	/	/	/	x	x	x	x
	Industry and infrastructure	x	x	/	/	/	/	/	/	x	x	x	x
Human health, security, livelihoods, and poverty	Health effects of floods	x	x	x	x	x	x	/	x	x	x	x	x
	Health effects of heat	x	x	/	x	x	x	x	x	x	x	x	x
	Health effects of drought	x	x	x	x	x	x	x	x	x	x	x	x
	Water-borne diseases	x	x	x	x	/	x	/	x	x	x	x	x
	Vector-borne diseases	x	x	x	x	/	x	/	x	x	x	x	x
	Livelihoods and poverty	x	x	/	x	x	x	/	x	x	x	x	x
	Economic valuation	x	x	x	x	/	/	/	/	x	x	x	x

Key:
/ = Relatively abundant/sufficient information; knowledge gaps need to be addressed but conclusions can be drawn based on existing information.
x = Limited information/no data; critical knowledge gaps, difficult to draw conclusions.
NR = Not relevant.

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