International Federation of Red Cross and Red Crescent Societies

Southeast Asia Climate Change Master Training

Session Plan of Session 2: Basic Science and Facts of Climate Change - Past, Present and the Future/ Bangkok Country Cluster Support Team / 2016

# Session Plan of Session 2: Basic Science and Facts of Climate Change - Past, Present and the Future

Objective: At the end of this activity, the participants are able to:

1. To have the participants understand the basic science related to climate change, evolution of the climate from the past, present conditions and what can happen in the future and its relationship with GHG emission and observed pattern of disasters.

## Key terminologies to cover in the session:

* GHGs
* GHG emission
* Relationship between GHG emission and temperature
* Human influence in global climate
* Average global mean temperature for xx period
* Projection of climate change (global and regional)
* Climate change scenarios and consequences (i.e., changes in temperature, variation in rainfall, sea level rise) –observed and projected changes in disaster pattern.
* Impacts of climate change in various sectors (Water, Food security/ Livelihoods, Migration, Health, Shelter), extreme weather events (tropical cyclone, frequent flood, drought frequency, Hails, exposure to land slide, sea level rise), other impacts such as migration, health related events such as dengue outbreaks.

# Proposed Methodology:

Game, Video presentation, Group Discussion and Lecture

# Tips to Facilitator:

* Note (OPTIONAL): Much of the basic science and overall consequences will be further explained by the Al Gore Movie "An inconvenient truth" to be shown in the evening (voluntary participation)

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| * Messages in the movie clip "Voices from RC"
* Malaria – re-emerged
* Dengue
* Malaria colonised new areas (altitude)
* Heat waves
* Sea Level Rise
* Temp increase
* Coral bleaching/erosion
* Coastal erosion
* Super flooding / extreme rainfall
* More intense hurricane – in new area
 | * More cyclones
* Hurricane in new area
* More cyclones
* Seasons changing – famers confused (hunger)
* More work for the RCRC
* Drought frequency increasing – inducing conflict

**Actions to take*** Donor: step up resource/support for DRR/CC
* Change planning – "everything"
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Reference Materials:

* **Handout**: RCRC CC\_Southeast Asia Climate Trends 2012
* Climate Guide chapter 1 (please see in Session 12 Resources folder or can be accessed from http://www.climatecentre.org/downloads/File/reports/RCRC\_climateguide.pdf)
* CDKN\_Managing Climate Extremes and Disasters in Asia 2012
* IPCC\_Summary for Policymakers on Managing the Risks of Extreme Events & Disasters to Advance Climate Change Adaptation 2012
* IPCC\_Summary for Policymakers on Climate Change - Impacts, Adaptations, and Vulnerability 2014
* Video: World Could Be 4 Degrees Hotter By End of This Century

Duration: 30 min + 1.5 hours = 2 hours in total (interrupted by coffee break)

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| **Timing Session** | **Purpose/ Objective**  | **Methodology** | **Material/Facilitator** |
| *\*From when to when**(min)* | *What the activity aims at* | *How the activity is conducted, including the methods to be used (e.g. brain storming, group discussion, role play, etc.), questions, time duration, expected information, what the participants should do, etc.* *If case study or role play will be used, explanation or information should be provided as well.* | *What materials, facilities, equipment are required to conduct this activity (e.g. flip charts, marker pens, colour cards, etc.)* |
| 0 - 10 min | Engaging participants – hearing their perspective | 1. Introduce session and session objectives
2. Open the floor by asking the participants
3. Can someone offer a brief explanation on what is climate change?
4. What are the main causes of climate change – as generally perceived by people in your home country?
5. (OPTIONAL) Inform: later in the afternoon we will show the movie made by Al Gore in 2006 – explaining the science and impacts in a very interesting way. So now we will just summarize a few facts as a basis for our work today.
 | Plenary facilitated discussion No material (maybe record on flip chart?) |
| 50 min | To establish a common understanding of the scientific reasons for CC | Present:1. The basic science PPT part one (start at slide 3)– supplemented by the animation (see below)
2. On slide 5, facilitator post three “trigger questions” (it is suggested that the facilitator writes these questions on a flipchart so participants can refer to the questions during discussions
3. On slide 10 show the animation from <http://spark.ucar.edu/model-simulation-past-present-and-future-climate-change> (start at 0:34 – 2:30 (=2 min); it is recommended to download it first (using www.KeepIT.com) so it can be run without internet access
4. On Slide 11: Show World Bank animation ['World Could Be 4 Degrees Hotter By the End of This Century](Resources/World%20Could%20Be%204%20Degrees%20Hotter%20By%20End%20of%20This%20Century.mp4)’ (2:26)Point out that the movie is meant as a warning of even worse impacts of climate change if the world leaders cannot agree on measures that will limit global warming to 2°C
5. In relation to slides 16-21:
6. Discuss the implications of annual, decadal and long term variability
7. Highlight the uncertainty of science to predict at a local scale (not downscaling to small areas!)
8. Slide 22: certain things: higher average temperatures, sea level rise, ocean acidification, melting ice/glaciers
 | PowerPoint Presentation – interacting with participantsLaptopLCD projector |
|  | Tea/coffee break |
| 1 hour | To summarize the general effects of CC – the impacts that are most relevant to our RCRC work | 1. Show the short video "Red Cross voices in a changing climate" (at <https://www.youtube.com/watch?v=AXPfF47Tn9A> ) – and show the "messages in the movie clip “voices from RC." Listed in the “tips to facilitator” section above
2. Discuss with participants any additional effects they have heard of/experienced in their respective NS/countries
3. Note these on the whiteboard/flipchart
4. Help disentangle facts from "guesswork" and "blaming it all on climate change"
5. Present second part of Power Point (on impacts) (start at slide 32)

NOTE, that in this version of the PPT only a small selection of the slides are used – many are 'hidden' but can be activated if needed/questions arise1. Facilitate wrap-up discussion re the local impacts of CC in the zone
 | LaptopLCD projectorLoudspeakers (for videos)Powerpoint Presentation – interacting with participants |
| Optional (may be shown at the end of the training day) |  | Introduce the Al Gore movie 'An inconvenient truth' (NOTE: the movie is not part of the package – it is a copyrighted commercial product that can be bought at several internet-sites)We discuss: - in the first 'animation' big ice cubes are dropped into the ocean to cool – you can remind people that this is a caricature of "geo-engineering" increasingly proposed by certain parties as a (dangerous) solution to keep temperatures down.- science since the movie was made (2006) - now 400 ppm CO2 in atmosphere- the animations on sea level rise are exaggerated in relation to this century (coming IPCC projects 0.5 to 1.25 m in 2100) – although definitely true on a longer time scale, in particular if we cannot keep warming to 2°C |  |
| **End of Session 2** |