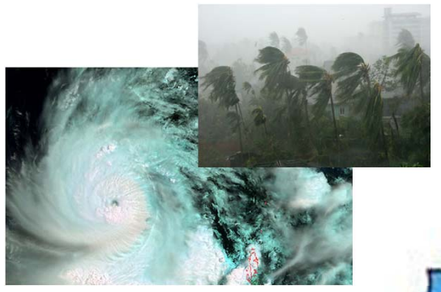
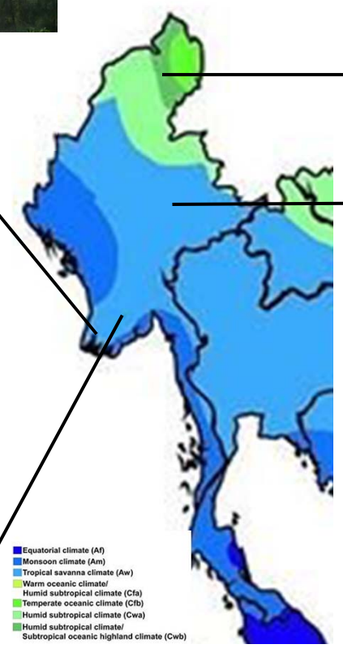
MORE FREQUENT AND INTENSE EXTREME EVENTS

(Moderate Confidence)



TROPICAL CYCLONES

LANDSLIDES



EXTREME HIGH TEMPERATURES AND DROUGHTS

FLOODS & FLASH FLOODS

Photos credit: AP Photo, ESA, Frontier, TVNZ

How will Climate Change impact Myanmar?

From the observations made on the past, the on-going and future climate changes will have many consequences in Myanmar, mainly on the economic, productive, social and environmental sectors. The negative impacts of changing temperature and precipitation patterns outweigh the benefits. For instance, the increased temperatures is having a large impact on sectors such as agriculture; for example in the Dry Zone. Many people have been forced to migrate and find new sources of income as a result of changing rainfall patterns and pest infestations. There is hope, however, that in some cases, adaptation measures may offset some of the negative impacts. The Department of Meteorology and Hydrology will work with its partners, within the context of the Myanmar Climate Change Alliance (MCCA), in assessing the impacts on: Agriculture, Fisheries, Livestock, Water Resources, Tourism, Human Settlements and Cities, Public Health, Etc.

Photo credit: The Global New Light of Myanmar

Enhanced Climate Services in Myanmar

Climate Change Trends and Projections

Mission of DMH

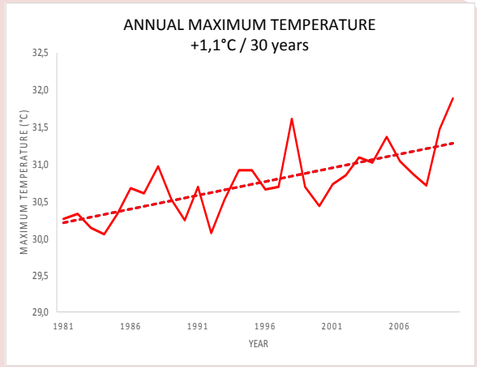
"Observing and understanding weather, climate and water resources as well as providing meteorological, hydrological, seismological and related services in support of national needs, including protection of life and property, safeguarding the environment, contributing to national security and sustainable development and promoting capacity building. It also contributes to national, regional and international cooperation."

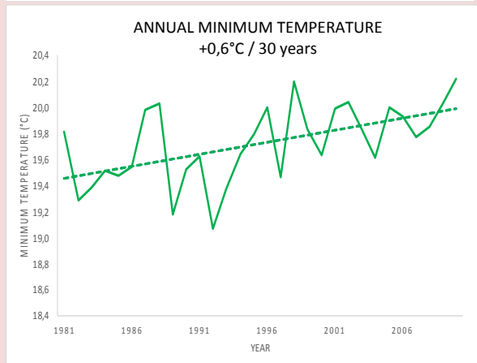
Photo credit: Humanity House

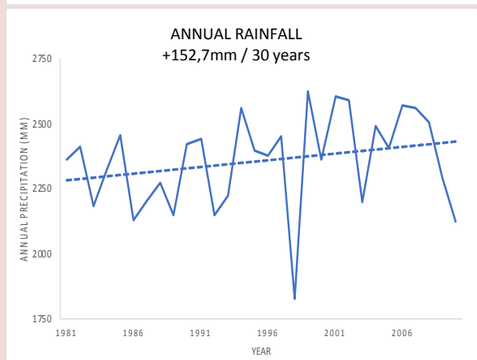
Climate change is regarded as one of the major challenges humankind is facing. New and possibly unprecedented weather phenomena require efficient adaptation measures. As a result of the COP21 in 2015, a large consensus on the ambitious goal to limit global warming to 1.5°C was set. Reaching this goal requires efficient mitigation actions that can have large influence e.g. on energy production and agriculture. The whole society requires temporarily and spatially detailed information on variability and change of past and future climate. The Department of Meteorology and Hydrology (DMH) is aware of its backbone role in providing efficient early-warning services, weather forecasts (at various timescales) and climate services in support of an efficient and effective preparation by all society, to new and increased hazards.

PAST CLIMATE

There is natural variability in both weather and climate, but 'climate change' refers to systematic changes across the climate system in response to a forcing agent, which can be natural (e.g. a volcanic eruption) or a result of human activities (e.g. emissions of greenhouse gases from industry or changes in land use).
In order to understand the ***past climate trends***, the Department of Meteorology and Hydrology (which is responsible for maintaining an observing network to monitor weather and climate), analysed observational data from the ***35 stations representatives of Myanmar climatic zones, for a 30-year period (1981-2010)***. Climate Variables include: ***Maximum and Minimum Temperatures (°C), and Rainfall (mm)***. Results indicate that there have been a ***significant increase of the maximum and minimum temperatures across the country*** (more pronounced in the maximum temperature), ***as well as of rainfall***. However, Myanmar has also been experienced periods of scarcity of water. Examples include the ***powerful 1997-98 El Niño episode.*** These events ***bring warmer and dryer weather and typically exacerbates the dry season with prolonged dry spells, leading to significant droughts***.



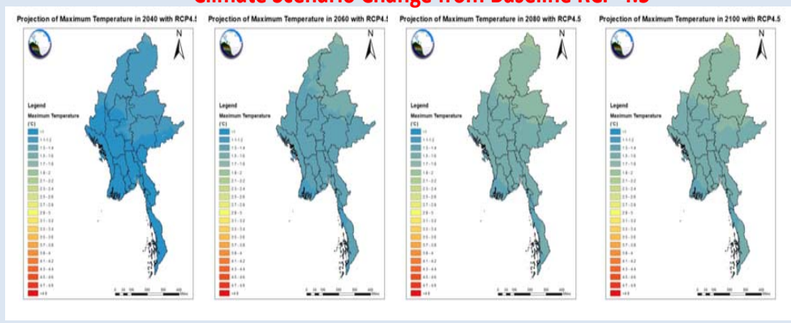




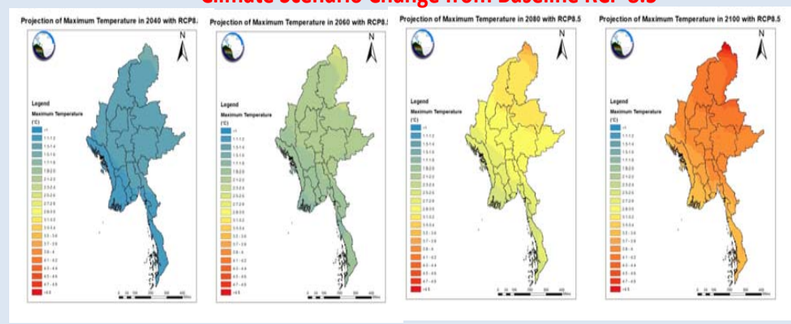
FUTURE CLIMATE IN MYANMAR

The Department of Meteorology and Hydrology calculated the ***Myanmar Climate Projections for two scenarions*** (RCP 8.5 High Emissions & RCP 4.5 Intermediate Emissions). Climate variables include: ***Maximum and Minimim temperatures (°C), and Precipitation (mm)***. Future developments include calculations for Sea Level (m). ***Baseline: WorldCLIM2 datasets, 1981-2010***.

Climate Scenario Change from Baseline RCP 4.5



Climate Scenario Change from Baseline RCP 8.5

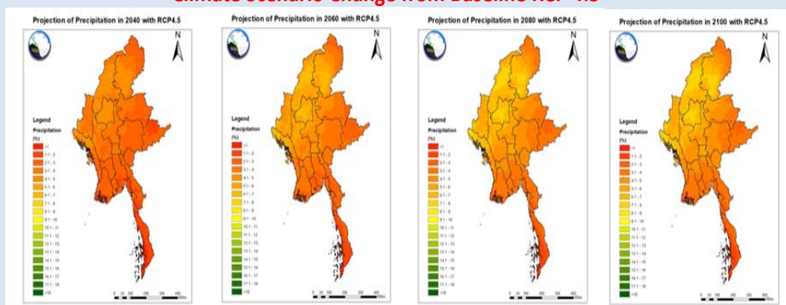


There is ***high confidence**** **that *warming* is very likely to continue across Myanmar**. Relative to the baseline period of 1981-2010, the annual cycle change in maximum temperature can go up to around 1.6°C (RCP 4.5) / 2.3°C (RCP 8.5) by 2060 and around 1.7°C (RCP 4.5) / 4.3°C (RCP 8.5) by 2100.

** Consensus among climate models*

In contrast, the ***projections for precipitation* show *large spatial and seasonal variations***. But generally, the projections indicate ***moderate confidence* in a *slightly wetter climate***. During part of the the ***southwest monsoon*** (especially in July and August), ***generally more rainfall is projected*** (typically ***shorter in time, but more intense***, leading to ***flash floods***). For the northeast monsoon (December to February), the scale of projected changes in precipitation for extremes is not as significant as for the southwest monsoon.

Climate Scenario Change from Baseline RCP 4.5



Climate Scenario Change from Baseline RCP 8.5