# Unit 2: Tropical Disturbances

## Learning Objectives

At the end of this unit, learners should be able to:

* Describe the structure and evolution of African easterly waves
* Identify easterly waves using various products
* Describe the basic structure and synoptic patterns of common tropical synoptic weather systems
* Describe the typical space and time scales, pattern of highs and lows, and propagation of Kelvin waves, equatorial Rossby waves, and mixed Rossby-gravity waves
* Identify equatorial Rossby waves and mixed Rossby-gravity waves from lower tropospheric wind analysis and satellite IR images
* Understand the influence of equatorial waves on tropical weather
* Describe the basic structure and evolution of the MJO
* Describe tropical cyclone global climatology (where and when they form)
* Identify distinguishing features of tropical cyclone structure
* Describe ingredients needed for tropical cyclone genesis
* Define the stages of a tropical cyclone lifecycle
* Detect changes in tropical cyclone intensity using satellite remote sensing
* Describe key storm and environmental factors that affect tropical cyclone intensity
* Describe the mechanisms that influence tropical cyclone motion
* Describe the basic mechanisms for tropical cyclone hazards particularly those at landfall
* Describe the influence of the MJO on tropical cyclone activity
* Describe the influence of ENSO on tropical cyclone activity