Risk Management and Climate Change: El Niño Case in 2010

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Flood and drought are the main risks in water resource management and they are associated with weather extremes. Traditionally statistical approach can be adequately used for quantifying and managing risks from these extremes. However, the climate change not only reduces efficiency of our existing systems or infrastructures to cope with weather extremes, but also makes the statistical approach becoming outdated to manage water resource. It is believed that climate change would bring more “unusual events” and El Niño case in early 2010 is a good example. Usually during the El Niño (warm phase) the Southeast Asia would have less precipitation based on probability. In fact this region just had the first tropical depression (01W) of the 2010 Pacific Typhoon season in the middle of the South China Sea. This was due to a local effect of high sea surface temperature anomalies in this region. Therefore, the new challenge is that the weather forecasting should be more physically based and integrate interaction from local climate.