

ADAP-T for water disaster risk management and sustainable development

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The anthropogenic climate change is increasing water-related disaster risks such as flood and drought, in particular, because most of the adverse impacts of climate change is delivered to society through water. The global mean temperature has risen by more than 1.0 degree Celsius increase compared to pre-industrial era and it is predicted that it will likely reach 1.5 degree Celsius between 2030 and 2050 if it continues to increase at the current rate, according to the latest IPCC Special Report on the impacts of global warming of 1.5 degree Celsius. Mitigation efforts to reduce the greenhouse gas, e.g., CO₂, emission and to reduce the speed of climate change is essentially important, and at the same time, adaptation measures to reduce the vulnerability and exposure of human lives and properties from risks exacerbated by climate change are also relevant.

After the Paris Agreement of UNFCCC in 2015, all the member states are encouraged to set their National Adaptation Plan, and a new research project entitled "Advancing co-design of integrated strategies with adaptation to climate change in Thailand (ADAP-T)" with international collaboration between Thailand and Japan was proposed, approved, and implemented since 2016, supported by JICA for Thai side and JST for Japanese side under the framework of SATREPS. ADAP-T has three piers of research, namely i) Knowledgebase of climate change, ii) Adaptation measures to climate change, and iii) Co-designing adaptation measures. Major sectors prone to climate change, such as riverine hydrology, forest hydrology, sediment erosion, coastal erosion, urban hydrology, and agricultural hydrology are considered in ADAP-T, and Kasetsart University, Thai Meteorological Department, Royal Irrigation Department, and ONEP (Office of Natural Resources and Environmental Policy and Planning) are managing the ADAP-T project in Thailand with close communication with The University of Tokyo and member researchers. Latest research achievements will be introduced.