

## An Integrated Watershed-based adaptation to climate change (WACC) in Thailand

The Watershed-based Adaptation to Climate Change (WACC) initiative is a suite of four separate but related projects supported and overseen by the National Research Council of Thailand (NRCT), which aims to identify the likely climate change impacts on the Petchaburi River Basin in Petchaburi Province, Southern Thailand. NRCT is a government agency and funded



research institute with a mandate to carry out in-depth research projects across a wide range of disciplines and subjects, with a view to generating information and knowledge and providing insights and recommendations which can be used to inform the development and revision of government policies, plans and projects. The four distinct projects cover:



downscaling of regional climate models (Ramkamhaeng University - RU), mapping and analysis of land cover and land-use changes (Land Development Department - LDD), assessment of the likely climate change impacts in a locally important protected area (Sirindhorn International Environmental Park - SIEP) and a basin-wide vulnerability and capacity assessment, drawing on the outputs and results of the other three projects (Sustainable Development Foundation - SDF).



Additional technical backstopping is provided by Kasertsart University (KU - ecological impacts) and the United States Forest Service (USFS - watershed-scale vulnerability and capacity assessments), with the United States Agency for International Development (USAID) coordinating the participation of government representatives from neighbouring countries in Southeast Asia in order to increase the regional impact of the initiative. Assessing vulnerability to climate change impacts at landscape scales like the watershed scale poses unique challenges. In-depth approaches typically applied at the local and subnational levels do not scale well and become unwieldy and impractical at the



watershed level. Conversely, national policy frameworks tend to be too broad and generic to be able to effectively inform decision-making at the landscape level. Using the Petchaburi River Basin as a working example, and through coordination with regional governments, the WACC initiative hopes to develop a flexible framework for landscape-scale assessment of climate change vulnerability which can be readily applied throughout Southeast Asia.



In the context of the Paris COP, the WACC initiative has several unique aspects which are likely to be of general interest to participating representatives of member parties. First and foremost is the multi-project, multi-partner,

multi-disciplinary approach outlined above. Implementing partners include both local and international government agencies, park authorities, universities, non-governmental organizations and international aid agencies, with expertise in areas including climate model downscaling, land cover mapping, ecosystem-based natural resource management, socio-economic analysis, local development planning and international cooperation. Secondly, the



WACC initiative is not limited to scientific enquiry, nor is it restricted to merely assessing climate change vulnerabilities. Rather, there is a strong emphasis on participation of local stakeholders, consensus building processes and in-depth analysis of socio-economic factors. Furthermore, the initiative will provide recommendations regarding appropriate and cost-effective climate change adaptation measures, and will promote and facilitate the integration of those measures into local and subnational development planning. Apart from the implementation arrangements and the overall approach adopted, the WACC initiative has some interesting technical aspects too. The RU team have conducted particularly fine resolution downscaling of regional climate models to a grid size of just 25 square kilometers, and the outputs from the downscaling process are now being used to apply the Watershed Evaluation and Planning System (WEAP) model to the Petchaburi River Basin. The SDF team have developed 'climate scorecards' to facilitate systematic assessment of the potential capacity of government agencies and local authorities in adapting to climate change, and have identified 'candidate communities' - deemed likely to be representative of the climate impacts faced by communities across the wider basin - as a way to enable in-depth socio-economic analysis and local development planning to be carried out at the watershed scale. Finally, the USFS team are developing a set of 'climate facets', based around the World Meteorological Organization's (WMO's) climate extremes indices, as a way to provide local stakeholders with context specific information about potential climate change impacts in a readily recognizable and easily understood form.

