Coastal areas in the Greater Mekong region are particularly vulnerable to the impacts of climate change. To predict how these areas will be affected, their socioeconomic and environmental contexts must also be understood.

In early 2008, the WWF Greater Mekong Programme (GMP), with support from WWF’s Macroeconomics Programme, collaborated on a pilot study to assess climate change vulnerability and its implications for economic development in coastal areas. Two provinces - Krabi in Thailand, and Ca Mau in Vietnam - were chosen as different examples of coastal geomorphology and economy. These studies were unique in that for the first time they engaged local stakeholders to explore potential impacts on a variety of sectors using regional scale climate models applied at an appropriate local scale.

Krabi Province lies on the west coast of peninsular Thailand, facing the Andaman Sea, and its robust economy relies primarily on agriculture and tourism. Palm oil and rubber, the principal crops, cover 95% of Krabi’s cultivated area with many smallholder farms as well as industrial plantations. And, in spite of the December 2004 tsunami tourism income has recovered and almost doubled since 2002.

Krabi Province%.

In summary, this study underlined the major challenges climate change will pose to Krabi Province. Careful planning, based on rigorous science and involving all stakeholders, will be fundamental to ensure sustainable development for the province’s people and ecosystems.

Fisheries. A longer dry season means additional days of fishing and increased pressure on available stocks of fish and shellfish. An agreement by all concerned parties on an equitable, enforceable, and scientifically-based regulatory system to ensure that coastal marine resources are not depleted by either commercial or subsistence fishing must be developed.

Upland areas. Though rainfall will decrease over the next 25 years, it will remain sufficient to meet the needs of rubber cultivation, and the shorter monsoon season will permit additional days of tapping. Productivity per tree is expected to rise by 10-15%.

Reduced rainfall may reduce the productivity of oil palms. This provides another incentive to smallholders, already vulnerable to abrupt income swings traceable to market conditions, to diversify their crop base so as to increase resilience to economic and climate changes.

Rising temperatures will most likely force upland ecosystems – in particular Krabi’s hill evergreen forests, protected in Khao Phnom Benja National Park – to retreat to higher elevations wherever possible. Research is needed to develop a strategy that protects the high conservation values of these ecosystems.

Urban areas. Urban zones are likely to face water scarcity during the dry season, in response to which basin-wide water management systems will be essential. Engineering for infrastructure, in particular storm and wastewater management, should anticipate increasing climate change impacts over a 100 year horizon.

In summary, this study underlined the major challenges climate change will pose to Krabi Province. Careful planning, based on rigorous science and involving all stakeholders, will be fundamental to ensure sustainable development for the province’s people and ecosystems.

December 2008