**Soil erosion under land use change from two catchments in Laos, and Thailand**

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The systems identified as 'traditional' undergo most often rapid changes as a response to demographic, economic, and political drivers. These transitional periods are most critical for soil erosion. The combined processes of soil erosion result in less productive soils hence lower farm income. To study the impact of land use change upon erosion, concurrent case studies, as seen with a dynamic perspective, can compensate for long-term monitoring studies. This approach provides data, which can be used in prediction soil erosion as based on land use change scenarios. The objective of this study was to assess the influence of the rapid change of cropping systems on water erosion from two small catchments of South-East Asia.

These two catchments were selected because of their similar biophysical components (very steep slopes on shale) and their land use intensification gradient. The Houay Pano catchment (64 ha; Lao PDR) is representative of the slash and burn systems, without inputs, submitted to a reduction of the fallow period. The Mae Yom catchment (97 ha; Thailand) is representative of the transition between the systems with intensive annual crops and high inputs, and the perennial fruit tree crops. Water discharge and soil erosion were monitored during two years. Data were used to calibrate and validate the PCARES model (Predicting Catchment Runoff and Soil Erosion for Sustainability), developed in the Philippines for very steep slope conditions. Based on the concept developed by Rose & Freebairn (1985), it simulate overland flow and soil erosion for each erosive rainfall event.

This model was run for the two catchments using two main scenarios and two rainfall events. The first scenario was based on the most likely changes as based on the observed tendencies. The second scenario was based on the best bet options of land management. The first rainfall event was a rain with a ten–year return period. The second was based on a climatic change scenario for the region.

Our results confirmed the very high sensibility of soil erosion to land use change as compared to climatic change. They also illustrated the dramatic hydrological changes (time-response and peak discharge).

**Wednesday II** (Talk)