The water footprint of oil palm crop in Phetchaburi province
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Abstract
This study quantifies the water footprint of oil palm at the Chaipattana-Mae Fah Luang Reforestation Project in 2006-2010. For green, blue and grey WFs of oil palm production (land preparation, cultivation, harvesting and transportation steps) are assessed by the water footprint assessment framework as followed [1]. The crop evapotranspiration is calculated with the CROPWAT version 8.0 models. Considering the water footprint of oil palm crop is 10,150 m³/ton; 1333, 4,657 and 4,160 m³/ton of green, blue and grey WFs, respectively. An oil palm yields average is 3.09 tons/ha (0.49 tons/rai). The crop water used of oil palm is 2.2x10⁴ m³/ha/year (3.5x10³ m³/rai/year) and the efficiency of crop water used is 0.2 kg/m³. The water used in the study area has appeared especially in oil palm growth stage and blue water consumption is higher than rainwater. So the trend of water irrigation demand is increasing. WF value of oil palm can reduce by increasing productivity of oil palm per area as possible because a yield factor can make significantly for WF value too.

Keywords: water footprint, oil palm, Chaipattana-Mae Fah Luang reforestation project