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Assessing the environmental impact of palm oil produced in Thailand

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### **Abstract**

There are several concerns related to the increasing production of palm oil in Southeast Asia, including pollution, greenhouse gas emissions and land conversion. The RSPO (Roundtable on Sustainable Palm Oil) certification standard provides an incentive for reducing environmental impacts of palm oil production but to date, only few producers have been certified and studies on environmental implications of RSPO certification in Thailand are scarce. The objective of this study is to assess environmental impacts of palm oil production in Thailand. A case study is conducted in the Tapi River basin, accounting for 60% of palm oil production in Thailand. We developed a model to quantify effects of different management practices in plantations and mills producing Crude-Palm-Oil (CPO) – including non-RSPO, potential RSPO, and RSPO certified producers.

Our study shows that five activities contribute most to environmental impacts of CPO production; 1) burning fibers in boilers, 2) use of fertilizers, 3) wastewater treatment and empty-fruit-bunch disposal, 4) gasoline use in weed cutters and 5) glyphosate use for weed control. Together these activities cause environmental impacts associated with global warming, ozone formation, acidification, and human toxicity problems. RSPO certified producers cause the lowest environmental impacts due to better waste management such as biogas production from wastewater. We found that environmental performance of the most environmental friendly mills considerably exceeds the RSPO standards, which may be related to the interventions of an environmental project in the Tapi basin.

Currently, only 11% of CPO in the Tapi River basin is produced by RSPO certified mills, and non-CPO certified mills produce around 60% of CPO. Most of environmental impacts of palm oil production in the basin are therefore caused by non-RSPO certified palm oil mills. We explored two alternative scenarios illustrating that if more mills in the basin would adopt best-practice CPO production processes in line with those group named “RSPO certified”, environmental impacts generated in the basin will be considerably lower.

*Keywords:* palm oil production; environmental impact; oil palm plantation; palm oil mill; RSPO; Thailand

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