



Tropentag, October 5-7, 2011, Bonn

“Development on the margin”

Sustainable Intensification with Best Management Practices for Oil Palm in Marginal Environments of Southeast Asia

THOMAS OBERTHÜR, CHRIS DONOUGH

International Plant Nutrition Institute (IPNI), Southeast Asia Program, Malaysia

Abstract

The national average palm oil yields achieved in Indonesia continue to fall well below potential levels, and yields have stagnated for the last two decades as total production increased in line with planted area. However, at the level of a large company managing a group of plantations (ca. 150,000 ha), average oil yield of 6 t ha^{-1} and fresh fruit bunch (FFB) yield exceeding 27 t ha^{-1} have been reported. How can the rest of the industry reduce the yields gaps? The gap between actual achieved yield and the maximum yield potential can be apportioned into 3 parts: Yield Gap 1 arises from inefficiencies during development of a plantation until the end of the immature period; Yield Gap 2 arises from inaccurate assessment of nutrient requirements; and Yield Gap 3 arises from inefficiencies in the management of the mature stand. There are limited opportunities for plantations to correct Yield Gap 1. Yield Gaps 2 and 3 can be corrected in existing mature stands. Yield gap analysis can guide the implementation of best management practices (BMPs) for intensifying yield. IPNI Southeast Asia (SEA) has executed the BMPs as a management tool for yield intensification in mature plantations. A set of site-specific BMPs are identified and implemented in a number of full-sized management blocks representative of a plantation. The concept has been successfully implemented at 6 sites since 2006 in major production areas of Indonesia. IPNI SEA reported preliminary results from a limited number of years elsewhere. In this presentation, we will document the complete set of results from the BMP programme of IPNI SEA for the sites including those in marginal environments, demonstrating the usefulness and success of BMP over 4 years. The paper presents an overview of achievements regarding fresh fruit bunch and oil yields, the performance of the various yield components, and illustrates yield trends over the implementation period. The paper will discuss strategic implementation aspects covering (a) cost-benefit analyses as a tool for systematic decision support guiding the BMP implementation process, (b) resource constraints and management options, and (c) the further integration into whole plantation management.

Keywords: Best management practices, BMP, Indonesia, marginal environments, oil palm, sustainable intensification