Environmental benefits of high yield oil palm production

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Achieving maximum economic yield in oil palm plantations and smallholdings is a basic objective of all growers whose goal is to maximize profits. Yet, at present, yields in the major producer countries lag far behind what can be attained. By 2050 the planted area required to meet predicted demand is expected to increase by 18–26 million ha, depending on which assumptions on future yields are used. Increasing the area planted to oil palm instead of increasing yields has a ripple effect of reducing the amount of land available for the cultivation of other important crops. Furthermore, there appears to be a shortage of land for further expansion that meets RSPO criteria in Southeast Asia, Africa and Latin America. In particular, available data suggests that there is limited potential for expansion of high yield oil palm on non-high conservation value (HCV) land in Africa. Increasing yields therefore has broad societal benefits beyond conservation because higher yields result in a reduction in the amount of additional land required to provide the world with its palm oil requirements.

High yields provide additional benefits in terms of reduced carbon payback times and greater potential for energy production from capturing larger volumes of CH_4 from palm oil mill effluent (POME) for co-generation of electricity. Furthermore, emissions associated with fertilizer used to maximize yield on existing land are small compared with the emissions that result from clearing additional land for new plantations, particularly when best agronomic practices are used to maximize fertilizer use efficiency.

Whilst yield is mentioned once in the *RSPO Principles and Criteria* under *Principle 4* (*4.2 - Practices maintain soil fertility at, or where possible improve soil fertility to, a level that ensures optimal and sustained yield*) it is not mentioned as a primary goal for sustainable palm oil production and RSPO certification. According to RSPO, however, palm oil yields in certified plantations in major producer countries such as Indonesia and Malaysia are about 1 t ha^{-1} greater than national averages, suggesting a link between yield and sustainable production practices. Significantly, most of the best research and development work, a prerequisite for yield intensification, is presently carried out by companies that have already achieved RSPO certification. Work by the International Plant Nutrition Institute (IPNI) has shown that significant yield increases can be achieved by meticulous attention to details of field management and proper agronomic practices without necessarily increasing fertilizer inputs.

In this presentation I recommend the RSPO should give greater prominence to yield as a primary driver of sustainable oil palm production and urge all concerned to back science-based efforts to increase yields with efficient use of external inputs and best management practices.

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