Chapter 16
Assessment of Smallholders' Barriers to Adopt Sustainable Practices:
Case Study on Oil Palm *(Elaeis Guineensis)* Smallholders' Certification in North Sumatra, Indonesia

Diana Chalil
University of Sumatra Utara, Indonesia

EXECUTIVE SUMMARY

The significant increase in oil palm areas has led to concerns about the sustainability of the associated farming practices. To address these issues, the Roundtable Sustainable Palm Oil (RSPO) organization formulated principles and criteria (P&C) for sustainable practices for members of the oil palm industry. Initially, only big companies applied for RSPO's certificate of sustainable product. However, with the growing proportion of smallholders, they are strongly suggested to get involved. Currently, only a few smallholders have obtained the certificate. One possible reason is that the RSPO P&C might be too complicated for smallholders. Using a descriptive and correlation method, this study found that lack of information, cost

DOI: 10.4018/978-1-4666-2842-7.ch016

of adoption and incompability with the stage of farm development, social values and farming conditions, inadequate managerial skills, and profitability explain the barriers for smallholders to adopt the RSPO's P&C. These barriers need to be addressed in order to improve the adoption of sustainable practices among oil palm smallholders.

ORGANIZATION BACKGROUND

Sustainable Agriculture

Agricultural has long been an important sector of human life It supplies food, fibers, fuel and raw materials for various industriesandwith increasingpopulationand income levels, demands for agricultural products have also increased. This has lead to a shift from the traditional agricultural patterns towards the more intensiveone. The results intensive agricultural practices have been quite impressive, but they have not always sustainable. For example, in the 1940s the shift known as the Green Revolution, marked the development of high-yield hybrid crops, however, they required the useof extensive fertilizers, pesticides and large quantities of irrigation water. While high-yield hybrid crops increased crop production by almost 3% per year over the period 1961-2004, unintended consequences included excessive exploitation of land and water, and a subsequent decrease in production and profit. For example, in 1961-1963 the average Asian farmer's fertilizer use was 6 kg/ha (2.5 kg/acre), four decades later, in 2000-2002, it increased more than 20-fold to 143 kg/ha (57.9 kg/acre) (WorldBank, 2008). As a result, the production costs increased and the profit decreased. It was found that an increase in fertilizer price caused a sharp decline in rice yield growth in Asia from 2.6% in 1970 to only 1.5% in 1980 (Kassie and Zihali, 2009).

Giampietro (1994) argued that such technological advances cannot be defined as unsustainable development, which includesnot only productionefficiency and profitability, but also social responsibility and environmental soundness. In fact, genetic engineering tended to address the first two criteria, but was usually not compatibility withother human activities and natural ecosystem processes. The situation is exacerbated when agricultural products are not only grown to meet thefood needs of a country, but are alsoa source of export revenue. For Indonesia, palm oil is recorded as an important export revenue contributor, with an export value of US$109 million in 1981, increasing to US$1.6 trillion in 2009 (Directorate Generale of Estate, 2012).